

U.S. DISTRICT COURT
CLERK
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**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS**

DORMA GMBH & CO. KG,
a German Corporation

Plaintiffs,

v.

AMERICAN DOORMAX, INC., an
Illinois Corporation

Defendant.

Civil No.

Judge

Magistrate Judge

02C 4763

JUDGE NORGLER

MAGISTRATE JUDGE BOBRICK

NOTICE OF CLAIMS INVOLVING PATENTS AND TRADEMARKS

Plaintiff Dorma GmbH & Co. KG (hereinafter "Dorma"), pursuant to Local Rule 3.4, hereby notifies the Clerk of Court that the above-captioned matter contains claims involving the infringement of one design patent and one federally registered trademark.

Plaintiff's claim of patent infringement, pursuant to 35 U.S.C. §271, involves United States Design Patent No. D429,992 ("the '992 patent"), entitled "Door Closer," duly and legally issued to inventors Olaf Ginzler and Rainer Fengler, on August 29, 2000, and subsequently assigned to Plaintiff Dorma.

Plaintiff's claim of trademark infringement, pursuant to 15 U.S.C. §1114, involves the United States federal trademark "DORMA" and design, Registration No. 1,557,624, issued on September 26, 1989 to Dorken & Mankel of Germany and subsequently assigned to Plaintiff Dorma.

DOCK E
JUL 03 2

2

The information provided herein by Plaintiff Dorma satisfies the requirement of
Local Rule 3.4.

Respectfully submitted,

DORMA GMBH & CO. KG

By: *Carolyn C. Andrepont*
One of the Attorneys for Plaintiff

Nils H. Ljungman
NILS H. LJUNGMAN & ASSOCIATES
426 Bovard Street
P.O. Box 130
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Timothy T. Patula, Esq.
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PATULA & ASSOCIATES, P.C.
116 S. Michigan Avenue, 14th Floor
Chicago, Illinois 60603
(312) 201-8220

NOTE: When the print dialogue box appears, be sure to uncheck the Annotations option.

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS**

Eastern Division

In the Matter of

DORMA GMBH & CO. KG, a German Corporation

v.

AMERICAN DOORMAX, INC., an Illinois Corporation

APPEARANCES ARE HEREBY FILED BY THE UNDERSIGNED AS ATTORNEY(S) FOR:

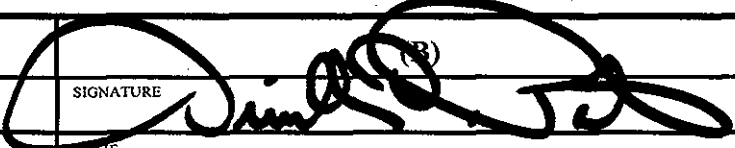
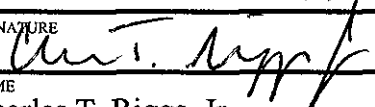
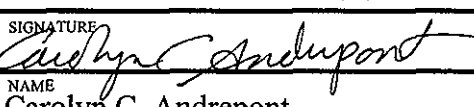
Dorma GmbH & Co. KG

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Case Number: **02C 4763**

JUDGE NORGLÉ

MAGISTRATE JUDGE ROBERT

(A)		(B)	
SIGNATURE		SIGNATURE	
NAME		NAME	Timothy T. Patula
FIRM		FIRM	Patula & Associates, P.C.
STREET ADDRESS		STREET ADDRESS	116 South Michigan Avenue, 14th Floor
CITY/STATE/ZIP		CITY/STATE/ZIP	Chicago, Illinois 60603
TELEPHONE NUMBER		TELEPHONE NUMBER	(312) 201-8220
IDENTIFICATION NUMBER		IDENTIFICATION NUMBER	06186853
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TRIAL ATTORNEY?	YES <input type="checkbox"/> NO <input type="checkbox"/>	TRIAL ATTORNEY?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
		DESIGNATED AS LOCAL COUNSEL?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
(C)		(D)	
SIGNATURE		SIGNATURE	
NAME	Charles T. Riggs, Jr.	NAME	Carolyn C. Andrepont
FIRM	Patula & Associates, P.C.	FIRM	Patula & Associates, P.C.
STREET ADDRESS	116 South Michigan Avenue, 14th Floor	STREET ADDRESS	116 South Michigan Avenue, 14th Floor
CITY/STATE/ZIP	Chicago, Illinois 60603	CITY/STATE/ZIP	Chicago, Illinois 60603
TELEPHONE NUMBER	(312) 201-8220	TELEPHONE NUMBER	(312) 201-8220
IDENTIFICATION NUMBER	06225931	IDENTIFICATION NUMBER	06271868
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TRIAL ATTORNEY?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	TRIAL ATTORNEY?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
DESIGNATED AS LOCAL COUNSEL?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	DESIGNATED AS LOCAL COUNSEL?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS**

Civil Cover Sheet

This automated JS-44 conforms generally to the manual JS-44 approved by the Judicial Conference of the United States in September 1974. The data is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. The information contained herein neither replaces nor supplements the filing and service of pleadings or other papers as required by law. This form is authorized for use only in the Northern District of Illinois.

**Plaintiff(s): DORMA GMBH & CO. KG, a
German Corporation**

**Defendant(s): AMERICAN DOORMAX, INC.,
an Illinois Corporation**

County of Residence: N/A - Resident of
Germany

County of Residence: Will County

Plaintiff's Atty: Nils H. Ljungman
Nils H. Ljungman &
Associates
426 Bovard Street, PO Box
130, Greensburg, PA 15601-
0130
(724) 836-2305

Defendant's Atty:

02C 4763
JUDGE NORGLÉ

II. Basis of Jurisdiction:

3. Federal Question (U.S. not a party)

III. Citizenship of Principal
Parties (Diversity Cases Only)

Plaintiff: -N/A
Defendant: -N/A

IV. Origin :

1. Original Proceeding

V. Nature of Suit:

830 Patent

VI. Cause of Action:

35 U.S.C. 271 et seq. - design patent infringement

VII. Requested in Complaint

Class Action: No
Dollar Demand: N/A
Jury Demand: Yes

VIII. This case **IS NOT** a refiling of a previously dismissed case.

Signature: *Carolyn C. Anderson*

Date: 7/3/02

If any of this information is incorrect, please go back to the Civil Cover Sheet Input form using the *Back* button in your browser and change it. Once correct, print this form, sign and date it and submit it with your new civil action. **Note: You may need to adjust the font size in your browser display to make the form print properly.**

Revised: 06/28/00

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CLERK
U.S. DISTRICT COURT

FILED

JUL 03 2002

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS**

**MICHAEL W. DOBBINS
CLERK, U.S. DISTRICT COURT**

DORMA GMBH & CO. KG,
a German Corporation

Plaintiffs,

v.

AMERICAN DOORMAX, INC., an
Illinois Corporation

Defendant.

Civil No. **02C 4763**

Judge

Magistrate Judge

JUDGE NORGLE

MAGISTRATE JUDGE BOBRICK

JURY TRIAL DEMANDED

COMPLAINT FOR INJUNCTIVE RELIEF AND DAMAGES

NOW COMES Plaintiff Dorma GmbH & Co. KG (hereinafter "Dorma") in the above-captioned matter and for cause of action against the Defendant American Doormax, Inc. (hereinafter "Doormax"), and complains as follows:

**DOCKETED
JUL 03 2002**

Cause Of Action

1. This is an action by Plaintiff Dorma, against Defendant Doormax, for patent infringement under 35 U.S.C. §271 *et seq.*, federal trademark infringement under 15 U.S.C. §1114, common law trademark infringement, federal and common law unfair competition and state deceptive trade practices.

2. Dorma seeks a preliminary and permanent injunction and damages, including treble damages and attorneys' fees for willfulness under 35 U.S.C. §284 and §285, against Doormax preventing Doormax from further manufacture, use, importation, offer for sale, and/or sale of any and all door closers or the like which infringe directly or indirectly upon Dorma's U.S. Design Patent Number D429,992, from using any

trademark that is likely to cause confusion, mistake or deception with Dorma's U.S. Trademark Registration Number 1,557,624, and from otherwise competing unfairly with Dorma.

Jurisdiction And Venue

3. Dorma's action for patent infringement arises under 35 U.S.C. §271 *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§1331 and 1338.

4. Dorma's action for trademark infringement arises under 15 U.S.C. §1114. This Court has jurisdiction over this action pursuant to 28 U.S.C. §1338.

5. Dorma's action for federal unfair competition arises under 15 U.S.C. 1125(a). This Court has jurisdiction over this action pursuant to 28 U.S.C. §1338.

6. Dorma's action for state deceptive trade practices arises under 815 ILCS 510/1 *et seq.* This Court has jurisdiction over this related state action pursuant to the principles of supplemental jurisdiction, 28 U.S.C. §1367.

7. These actions involve a diversity of citizenship in which one party is a citizen of a foreign state, and the amount in controversy exceeds \$75,000. Therefore, this Court has jurisdiction over these actions pursuant to 28 U.S.C. §1332.

8. Defendant resides in this district and venue is proper within the Northern District of Illinois under 28 U.S.C. §§1391 and 1400.

The Parties

9. Plaintiff Dorma is a German corporation, having a principle place of business at Breckerfelder Strasse 42 - 48, D-58256 Ennepetal, Germany.

10. Upon information and belief, Defendant Doormax is an Illinois corporation, having a principle place of business at 2457 Brakdoll Road, Naperville, Illinois 60565.

COUNT I
Patent Infringement

11. Dorma repeats and realleges paragraphs 1 - 10 as though fully stated herein.

12. On August 29, 2000, United States Design Patent No. D429,992 ("the '992 patent"), entitled "Door Closer," was duly and legally issued to inventors Olaf Ginzel and Rainer Fengler, and was subsequently assigned to Dorma GmbH & Co. A copy of the '992 patent is attached hereto as Exhibit A.

13. In 2001, Dorma became aware that Doormax was manufacturing, offering for sale and selling products, including the DM234 door closer, that infringed upon the '992 patent.

14. On May 4, 2001, Dorma wrote to Doormax notifying Doormax of the existence of the '992 patent. A copy of the letter is attached hereto as Exhibit B.

15. On May 25, 2001, Dorma again wrote to Doormax informing Doormax that it was infringing the '992 patent by reason of Doormax's manufacture, offer for sale and sale of its DM234 door closer. A copy of the letter is attached hereto as Exhibit C.

16. Upon information and belief, Doormax has been and still is infringing the '992 patent in violation of 35 U.S.C. §271 by making, using, offering for sale and/or selling the DM234 and/or other door closers embodying the patented design and by actively inducing others to practice the patent design.

17. Dorma has given notice of the infringement to Doormax in the manner required by 35 U.S.C. §287(a).

18. On information and belief, Doormax's actions constitute knowing and willful infringement of the '992 patent.

19. As a result of Doormax's infringement, Dorma has been and, unless Doormax is restrained by this Court, will continue to be irreparably harmed, damaged and injured.

20. This is an exceptional case pursuant to 35 U.S.C. §285.

COUNT II
Federal Trademark Infringement

21. Dorma repeats and realleges paragraphs 1 - 20 as though fully stated herein.

22. On September 26, 1989, the federal trademark "DORMA" and design, Reg. No. 1,557,624, was issued to Dorken & Mankel of Germany and subsequently assigned to Dorma.

23. In 2001, Dorma became aware that Doormax was using the confusingly similar mark "DOORMAX" not only as the corporation's name, American Doormax, but also as a trademark in connection with its products, including the DM234 door closer, a product that infringes upon the '992 patent.

24. Upon information and belief, Doormax has been and still is infringing Dorma's U.S. Trademark Registration Number 1,557,624, in violation of 15 U.S.C. §1114, by unlawfully using, in commerce, a colorable imitation of Dorma's federally registered trademark in connection with the sale, offering for sale, distribution, and

advertising of its DM234 door closer, which such use is likely to cause confusion, or to cause mistake, or to deceive.

25. Upon information and belief, Doormax has been and still is infringing Dorma's U.S. Trademark Registration Number 1,557,624, in violation of 15 U.S.C. §1114, by unlawfully using, in commerce, a colorable imitation of Dorma's federally registered trademark in connection with the advertising of a corporate name, which such use is likely to cause confusion, or to cause mistake, or to deceive.

26. As a result of Doormax's infringement, Dorma has been and, unless Doormax is restrained by this Court, will continue to be irreparably harmed, damages and injured.

COUNT III
Trademark Infringement Under Common Law

27. Dorma repeats and realleges paragraphs 1 - 26 as though fully stated herein.

28. Dorma has continuously and exclusively used the mark "DORMA," in connection with door closers, in the United States' market for numerous years.

29. In 2001, Dorma became aware that Doormax was using the confusingly similar mark "DOORMAX" not only as the trade name, American Doormax, but also as a trademark in connection with its products, including the DM234 door closer, a product that infringes upon the '992 patent.

30. Upon information and belief, Doormax has been and still is infringing Dorma's trademark rights under the Common Law, by using, in commerce, a colorable imitation of Dorma's trademark in connection with the sale, offering for sale,

distribution, and advertising of its DM234 door closer, which such use is likely to cause confusion, or to cause mistake, or to deceive.

31. Upon information and belief, Doormax has been and still is infringing Dorma's trademark rights under the Common Law, by using, in commerce, a colorable imitation of Dorma's trademark in connection with the advertising of a trade name, which such use is likely to cause confusion, or to cause mistake, or to deceive.

32. As a result of Doormax's infringement, Dorma has been and, unless Doormax is restrained by this Court, will continue to be irreparably harmed, damages and injured.

COUNT IV
Federal Unfair Competition

33. Dorma repeats and realleges paragraphs 1 - 32 as though fully stated herein.

34. Doormax's unlawful manufacture, use, offer for sale and/or sale in interstate commerce of a door closer embodying the '992 patent design is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection or association of Doormax with Dorma, or as to origin, sponsorship, or approval of Doormax's door closer by Dorma, when in fact no such business relationship exists, all in violation of §43(a) of the Lanham Act.

35. Doormax's unlawful promotion and sale in interstate commerce of a door closer under the product name and trade name DOORMAX is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection or association of Doormax with Dorma and its federally registered trademark Reg. No. 1,557,624, or as to

origin, sponsorship, or approval of Doormax's door closer by Dorma, when in fact no such business relationship exists, all in violation of §43(a) of the Lanham Act.

36. By reason of Doormax's acts, Dorma's rights under 15 U.S.C. §1125(a) have been violated. Doormax's acts have caused, and unless restrained by this Court, will continue to cause irreparable harm, damage and injury to Dorma's business and goodwill.

COUNT V
Unfair Competition Under Common Law

37. Dorma repeats and realleges paragraphs 1 - 36 as though fully stated herein.

38. Doormax's unlawful manufacture, use, offer for sale and/or sale in interstate commerce of a door closer embodying the '992 patent design is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection or association of Doormax with Dorma, or as to origin, sponsorship, or approval of Doormax's door closer by Dorma, when in fact no such business relationship exists, in violation of the Common Law.

39. Doormax's unlawful promotion and sale in interstate commerce of a door closer under the product name and trade name DOORMAX is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection or association of Doormax with Dorma, or as to origin, sponsorship, or approval of Doormax's door closer by Dorma, when in fact no such business relationship exists, in violation of the Common Law.

40. Doormax has unfairly competed with Dorma by the acts complained of, has done so intentionally, and has caused, and unless restrained by this Court, will continue to cause irreparable harm, damage and injury to Dorma's business and goodwill.

41. Dorma has no adequate remedy at law.

COUNT VI
State Deceptive Trade Practices

42. Dorma repeats and realleges paragraphs 1 - 41 as though fully stated herein.

43. Doormax, by the acts complained of is in violation of the Illinois Uniform Deceptive Trade Practices Act, Chapter 815 of the Illinois Compiled Statutes, Section 510/1 *et seq.* (815 ILCS 510/1 *et seq.*).

WHEREFORE, Plaintiff Dorma prays that this Court enter judgment against Defendant Doormax as follows:

- A. That the '992 patent is valid and enforceable;
- B. That Doormax has been and is infringing the '992 patent pursuant to 35 U.S.C. §271;
- C. That Doormax, its officers, agents, servants, employees, and others acting for, or on behalf of, or in concert with Doormax, be preliminarily and permanently enjoined from activities infringing upon the '992 patent;
- D. That Doormax's infringement of the '992 patent has been willful;
- E. That this Court award damages adequate to compensate Dorma for Doormax's infringement of the '992 patent pursuant to 35 U.S.C. §§284 and 289;
- F. That this Court award treble damages pursuant to 35 U.S.C. §284;

- G. That this is an exceptional case pursuant to 35 U.S.C. §285;
- H. That this Court award reasonable attorneys' fees pursuant to 35 U.S.C. §285;
- I. That this Court award costs and interest;
- J. That trademark Reg. No. 1,557,624 is valid and enforceable;
- K. That Doormax has been and is infringing upon Dorma's federally registered trademark, Reg. No. 1,557,624 pursuant to 15 U.S.C. §1114;
- L. That Doormax, its officers, agents, servants, employees, and others acting for, or on behalf of, or in concert with Doormax, be preliminarily and permanently enjoined from activities infringing upon trademark Reg. No. 1,557,624;
- M. That this Court award damages adequate enough to compensate Dorma for Doormax's infringement of trademark Reg. No. 1,557,624 pursuant to 15 U.S.C. §1114;
- N. That this Court preliminarily, permanently and finally enjoin Doormax from competing unfairly with Dorma and from any and all deceptive trade practices;
- O. That this Court award Dorma such damages as Dorma has sustained in consequence of Doormax's unfair competition and deceptive trade practices, including but not limited to Doormax's profits, and to account for all gains, profits and advantages derived by Doormax therefrom, and to award appropriate exemplary damages so as to set an example that the willful acts of Doormax cannot be condoned and further damages under 15 U.S.C. §1117 for willfulness;
- P. That this Court issue an order requiring Doormax and all those in privity or concert therewith to deliver up for destruction all infringing products, including containers, labels, signs, packages, wrappers, articles and promotional and advertising

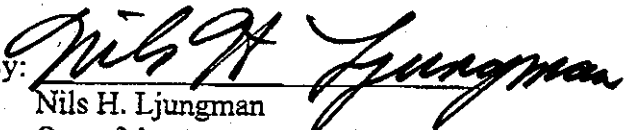
materials of any kind in its possession or under its control relating to the infringing products;

Q. That all costs and expenses in this action, including reasonable attorneys' fees as provided for inter alia by 15 U.S.C. §§1115 and 1125, and 815 ILCS 510/3, and appropriate interest on all damages sustained by Dorma, be taxed in favor of Dorma and against Doormax and that Dorma shall have judgment and execution thereof against Doormax; and

R. That this Court grant all other relief as this Court may deem just and proper.

Respectfully submitted,

DORMA GMBH & CO. KG

By: 
Nils H. Ljungman
One of the Attorneys for Plaintiff

Nils H. Ljungman
NILS H. LJUNGMAN & ASSOCIATES
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PATULA & ASSOCIATES, P.C.
116 S. Michigan Avenue, 14th Floor
Chicago, Illinois 60603
(312) 201-8220

EXHIBIT A



US00D429992S

United States Patent [19]

Ginzel et al.

[11] Patent Number: Des. 429,992
[45] Date of Patent: ** Aug. 29, 2000

[54] DOOR CLOSER

[75] Inventors: Olaf Ginzel, Dortmund; Rainer Fengler, Essen, both of Germany

[73] Assignee: DORMA GmbH + Co. KG, Ennepetal, Germany

[**] Term: 14 Years

[21] Appl. No.: 29/099,947

[22] Filed: Feb. 1, 1999

[51] LOC (7) Cl. 08-07

[52] U.S. Cl. D8/330

[58] Field of Search D8/330, 343, 346;
16/49, 71, 52, 59, 62

[56] References Cited

U.S. PATENT DOCUMENTS

D. 281,762	12/1985	Okazaki	.....	D8/330
3,426,382	2/1969	Lasier et al.	.....	16/49
3,546,734	12/1970	Pollack et al.	.....	16/52
5,265,306	11/1993	Yu	.....	16/51

Primary Examiner—Susan J. Lucas

Assistant Examiner—Jennifer Rivard

Attorney, Agent, or Firm—Nils H. Ljungman & Associates

[57] CLAIM

The ornamental design for a door closer, as shown and described.

DESCRIPTION

FIG. 1 is a first end view of the embodiment of the present invention.

FIG. 2 is a second end view opposite to the first end view of FIG. 1 of the embodiment of the present invention.

FIG. 3 is a front view of the embodiment of the present invention.

FIG. 4 is a rear view of the embodiment of the present invention.

FIG. 5 is a top view of the embodiment of the present invention.

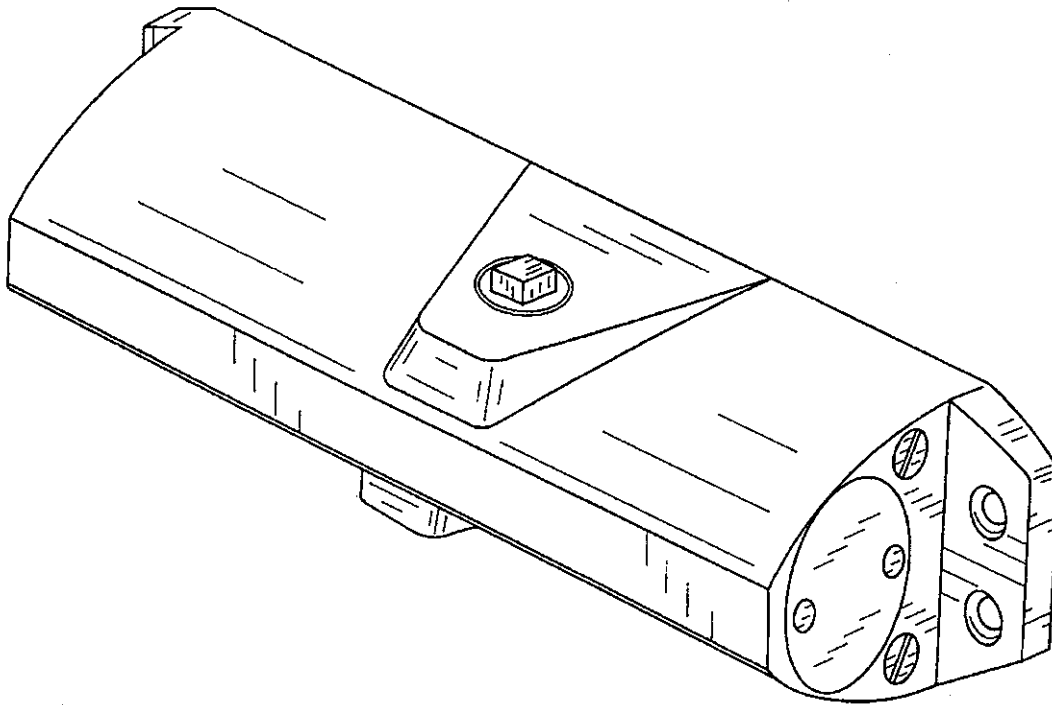
FIG. 6 is a bottom view of the embodiment of the present invention.

FIG. 7 is an isometric view of the embodiment of the present invention; and,

FIG. 8 is the front view of the door closer, with the door shown in broken lines, illustrating the environment in which the door closer may be used.

The broken lines are shown for illustrative purposes only and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



EXHIBIT

A

U.S. Patent

Aug. 29, 2000

Sheet 1 of 4

Des. 429,992

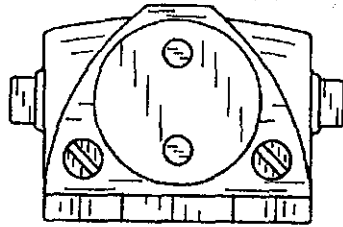


FIG. 1

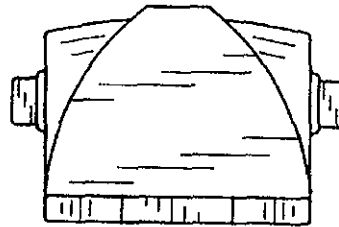


FIG. 2

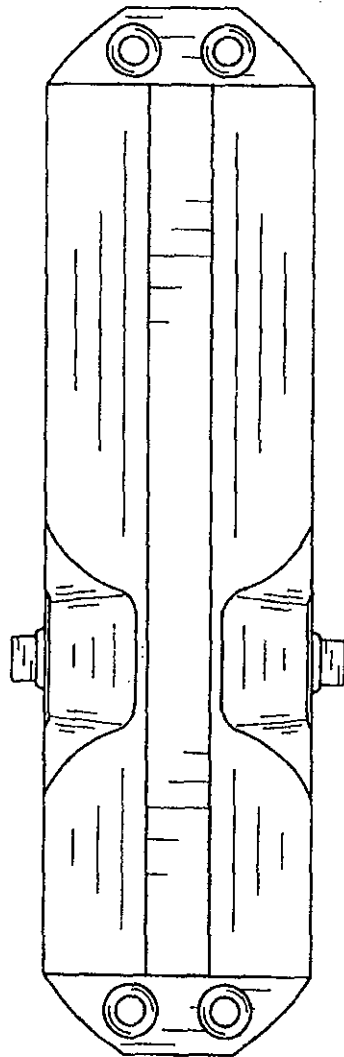


FIG. 3

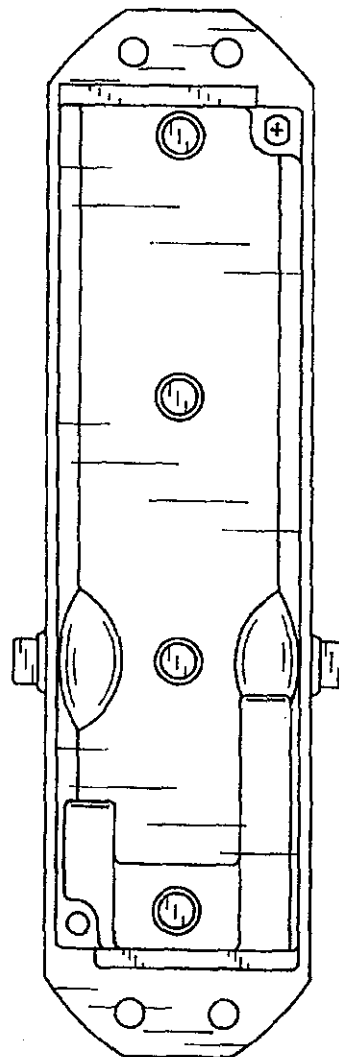


FIG. 4

U.S. Patent

Aug. 29, 2000

Sheet 2 of 4

Des. 429,992

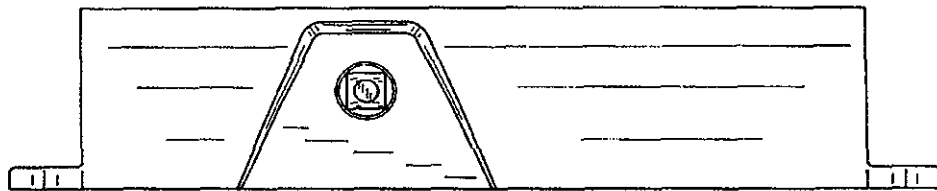


FIG. 5

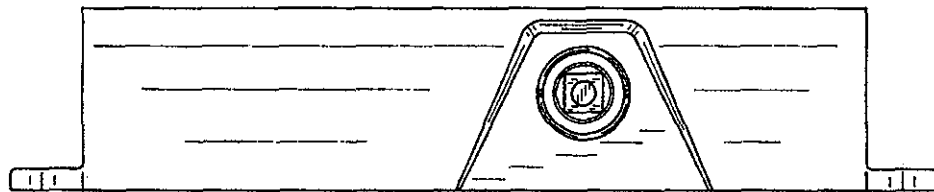


FIG. 6

U.S. Patent

Aug. 29, 2000

Sheet 3 of 4

Des. 429,992

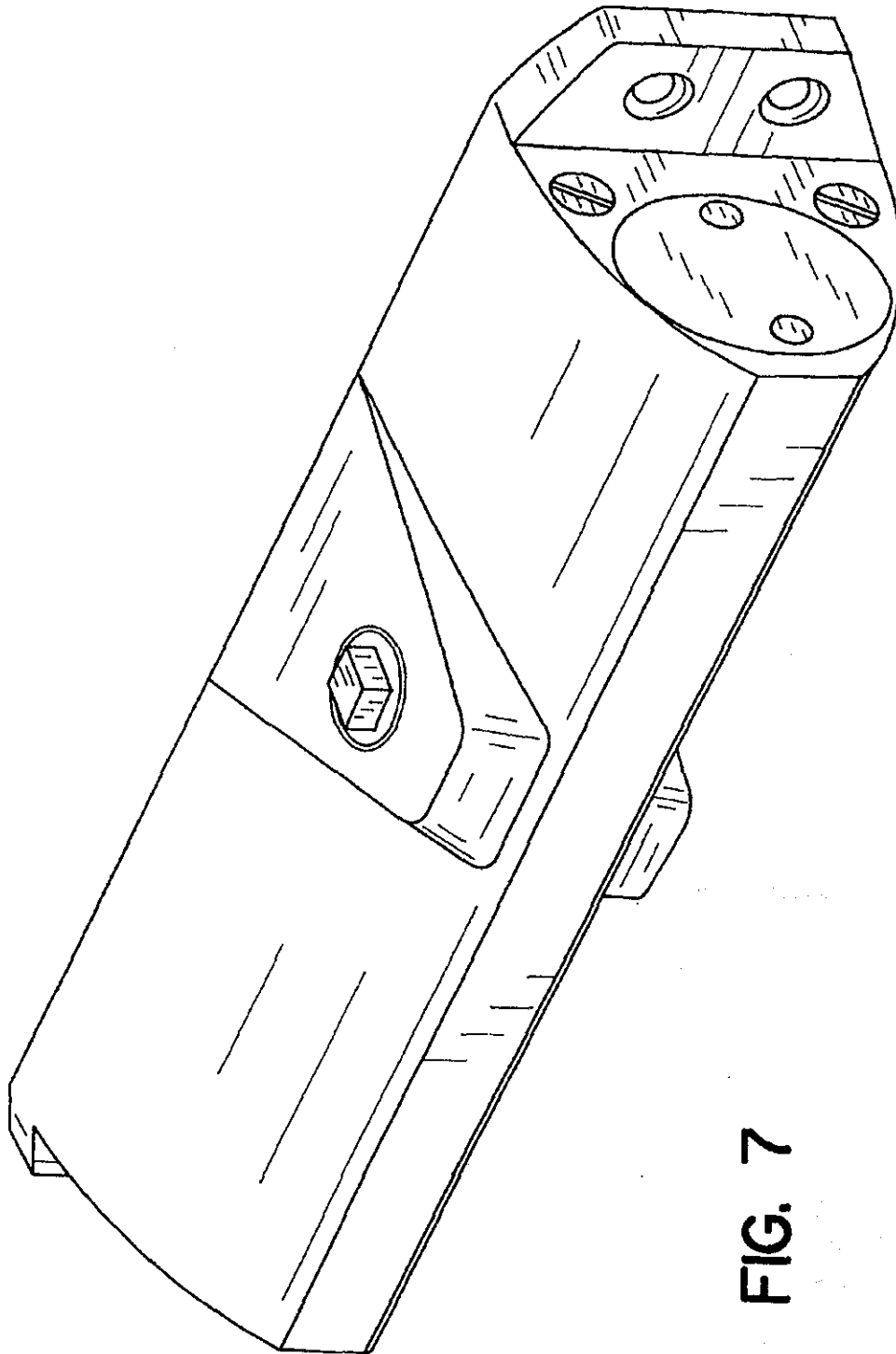


FIG. 7

U.S. Patent

Aug. 29, 2000

Sheet 4 of 4

Des. 429,992

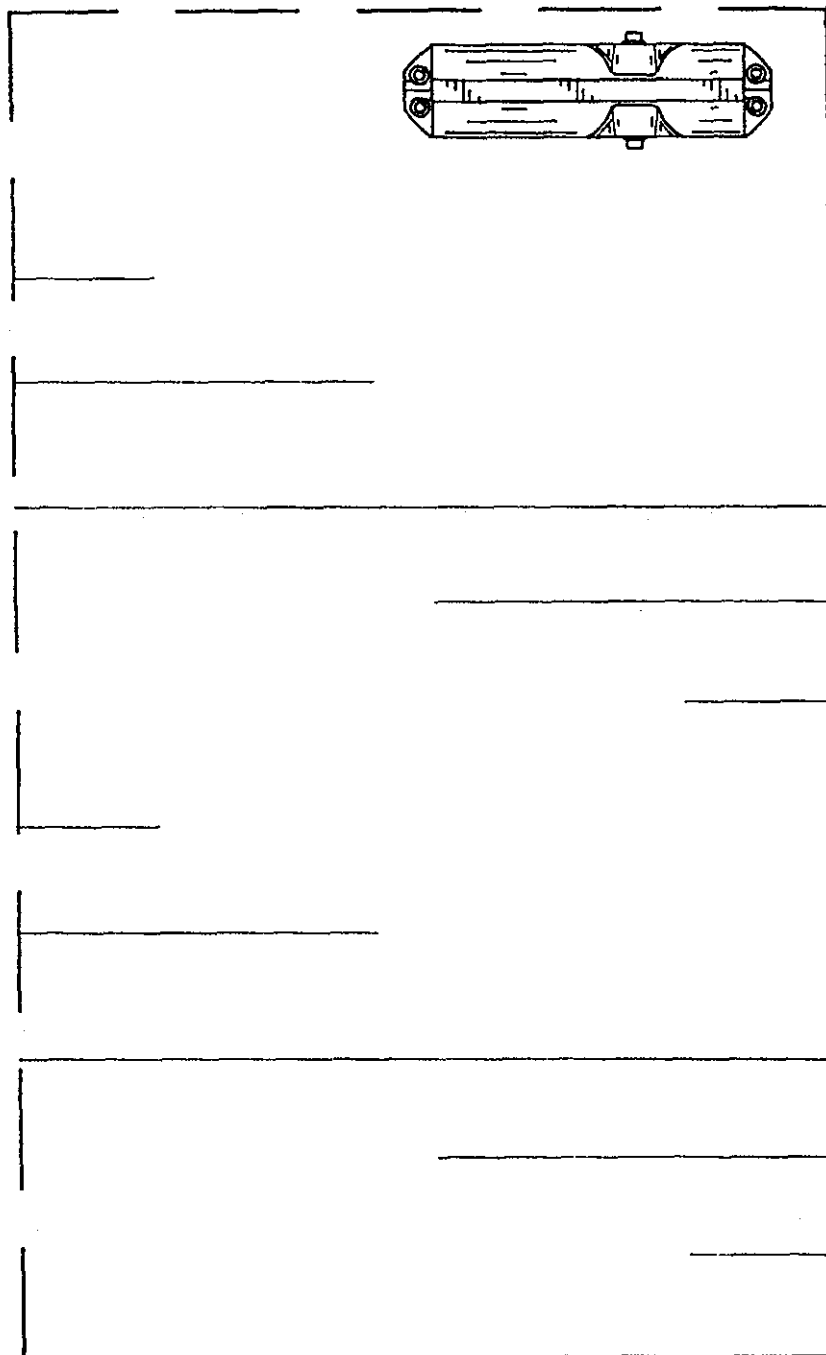


FIG. 8

EXHIBIT B

LAW OFFICES

NILS H. LJUNGMAN & ASSOCIATES

Attorneys At Law

Patent and Trademark Attorneys

426 BOVARD STREET (corner of Gaither Way), P.O. BOX 130, GREENSBURG, PA 15601-0130, U.S.A.

TELEPHONE: 724-836-2305 TELEFAX: 724-523-5230 or 724-836-2313 E-Mail: nhla@usaor.net or nhla@bellatlantic.net

VIA FIRST CLASS MAIL

American Doormax, Inc.
2457 Brakdoll Road
Naperville, IL 60565

May 4, 2001

Re: U.S. Design Patent No. D429,992

Gentlemen:

We wish to draw your attention to the enclosed Design Patent No. D429,992. Your comments would be appreciated by May 25, 2001.

If you have any questions, please do not hesitate to contact our office.

Very truly yours,

Nils H. Ljungman
Nils H. Ljungman

Encl.: U.S. Design Patent No. D429,992

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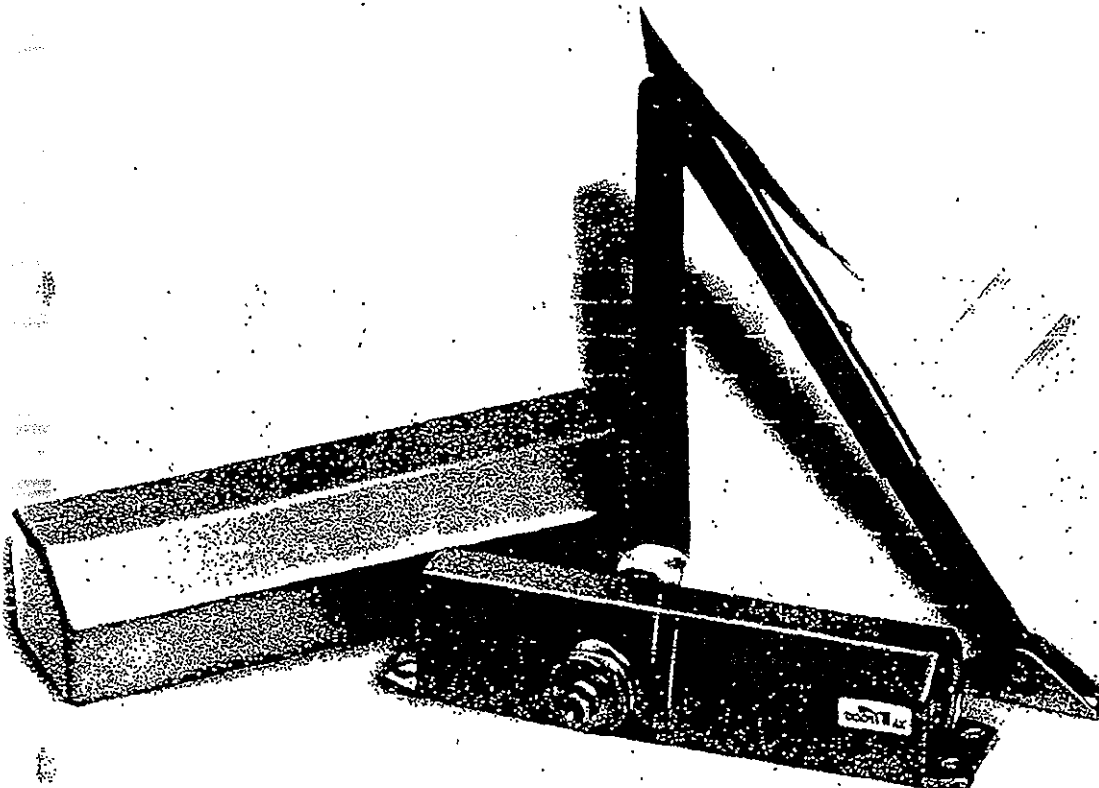
DOR-52-DES US 37sd/DOR069sd

EXHIBIT

B

DOORMAX
DOOR CLOSER SERIES

AMERICAN DOORMAX INC.

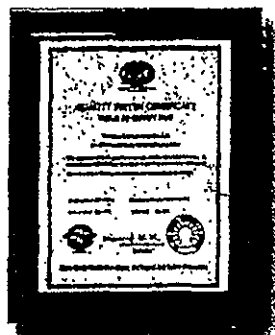


DOORMAX
DOOR CLOSER
SERIES
STANDARD
MODEL

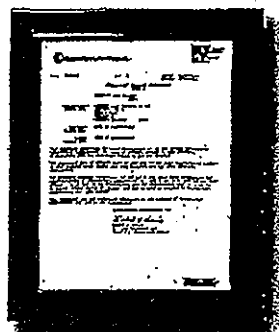
DOO

NHL-DOR-S2-DES

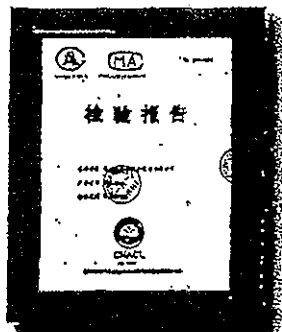
AUTOMATIC DOOR CLOSER SERIES



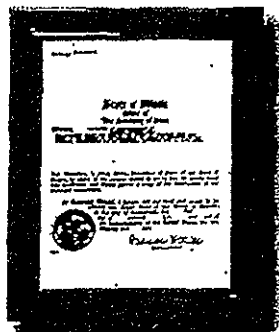
Certification Standard:
ISO 9002:1994



UL Approval



CNACL Approval



Foundation of
American DoorMax Inc.

DM2
SERIES DOOR CLOSER:
STANDARD FUNCTION AND
DIMENSION, COMMERCIAL
AND RESIDENTIAL APPLICATIONS.

DOOR CLOSER SERIES



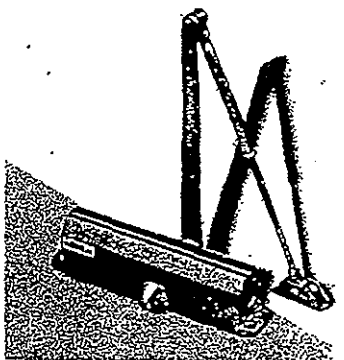
DM234
SERIES DOOR CLOSER:
THE POWER IS ADJUSTABLE
IF YOU ADOPT VARIOUS
INSTALLATION METHODS.

DOOR CLOSER SERIES



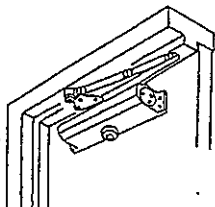
DM304
SERIES DOOR CLOSER:
INSTALLED ON WAREHOUSE
DOOR, GARAGE DOOR AND
WEIGHTY DOOR.

DOOR CLOSER SERIES



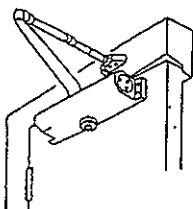
Type	Door Weight	Description	Door Width (mm)	Valve Number
DM2	45-65Kg		950	2
DM2H	45-65Kg	hold open function	950	2
DM304	85-105kg		1000	2

PARALLEL ARM APPLICATION
CLOSER MOUNTED ON STOP
SIDE OF DOOR



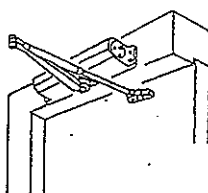
RIGHT HAND DOOR SHOWN

STANDARD APPLICATION
CLOSER MOUNTED ON
HINGE SIDE OF DOOR



LEFT HAND DOOR SHOWN

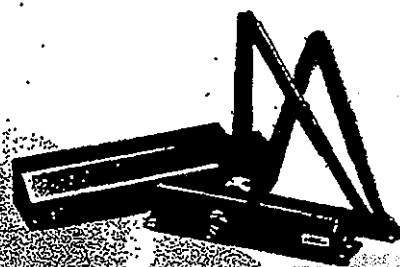
TOP JAMB APPLICATION
CLOSER MOUNTED ON FRAME
STOP SIDE OF DOOR



LEFT HAND DOOR SHOWN

DMZ
SERIES DOOR CLOSER:
SPECIAL DESIGNED FOR PROJECT
AND RESIDENTIAL DOORS, WITH
DECORATIVE COVER, ADJUSTABLE
ARM.

DOOR CLOSER SERIES

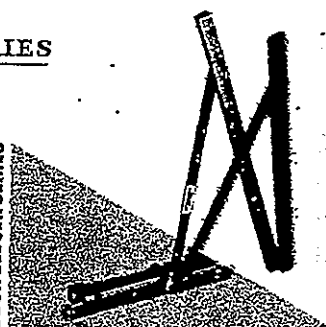


Type	Door Weight (Kg)	Valve Number
DMZ2	40-65	2

FULLY CONCEALED DOOR CLOSER SERIES

DMY2
SERIES FULLY CONCEALED DOOR
CLOSER: INSTALLED RIGHT INSIDE THE
DOOR, FRAME OR DOOR WITH LITTLE
EXPOSED, APPLICABLE TO THE HIGH
-LEVEL HOTEL AND HOUSEHOLD.

DOOR CLOSER SERIES



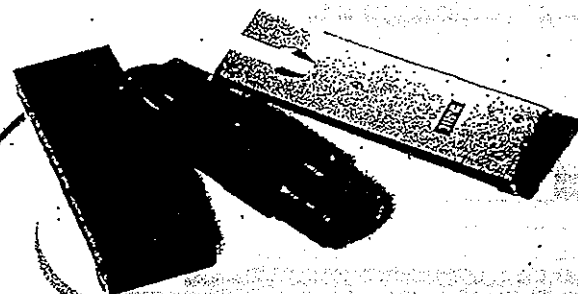
Type	Applicable Doors	
	Dimensions (mm)	Door Weight (Kg)
DMY1	800 X1800	15-30
DMY2	900 X2000	25-45

FLOOR HINGE SERIES

DMD
SERIES FLOOR HINGE:
INSTALLED ON METALLIC DOOR, WOODEN
DOOR, FRAMED AND NON-FRAMED
GLASS DOORS.



Type	DMD13	DMD14	DMD15
	DMD23	DMD24	DMD25
Door Weight (Kg)	65-85	80-120	100-150





AMERICAN DOORMAX INC.

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FAX:001-630-637 9207



US00D429992S

United States Patent [19]

Ginzel et al.

[11] Patent Number: Des. 429,992

[45] Date of Patent: ** Aug. 29, 2000

[54] DOOR CLOSER

[75] Inventors: Olaf Ginzel, Dortmund; Rainer Fengler, Essen, both of Germany

[73] Assignee: DORMA GmbH + Co. KG, Ennepetal, Germany

[**] Term: 14 Years

[21] Appl. No.: 29/099,947

[22] Filed: Feb. 1, 1999

[51] LOC (7) Cl. 08-07

[52] U.S. Cl. D8/330

[58] Field of Search D8/330, 343, 346;
16/49, 71, 52, 59, 62

[56] References Cited

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3,546,734	12/1970	Pollack et al.	16/52
5,265,306	11/1993	Yu	16/51

Primary Examiner—Susan J. Lucas

Assistant Examiner—Jennifer Rivard

Attorney, Agent, or Firm—Nils H. Ljungman & Associates

[57] CLAIM

The ornamental design for a door closer, as shown and described.

DESCRIPTION

FIG. 1 is a first end view of the embodiment of the present invention.

FIG. 2 is a second end view opposite to the first end view of FIG. 1 of the embodiment of the present invention.

FIG. 3 is a front view of the embodiment of the present invention.

FIG. 4 is a rear view of the embodiment of the present invention.

FIG. 5 is a top view of the embodiment of the present invention.

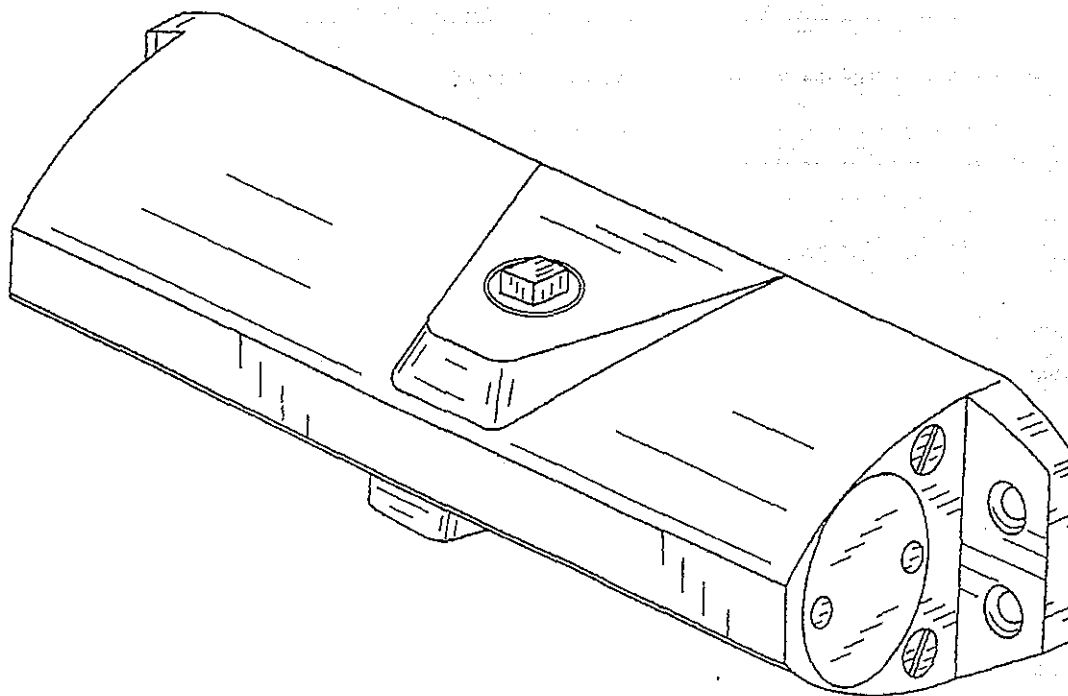
FIG. 6 is a bottom view of the embodiment of the present invention.

FIG. 7 is an isometric view of the embodiment of the present invention; and,

FIG. 8 is the front view of the door closer, with the door shown in broken lines, illustrating the environment in which the door closer may be used.

The broken lines are shown for illustrative purposes only and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



U.S. Patent

Aug. 29, 2000

Sheet 1 of 4

Des. 429,992

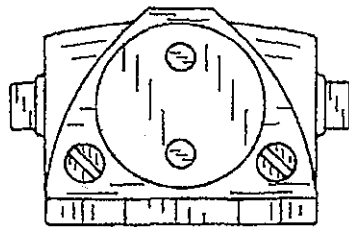


FIG. 1

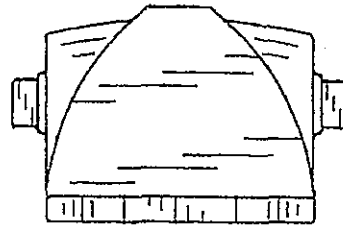


FIG. 2

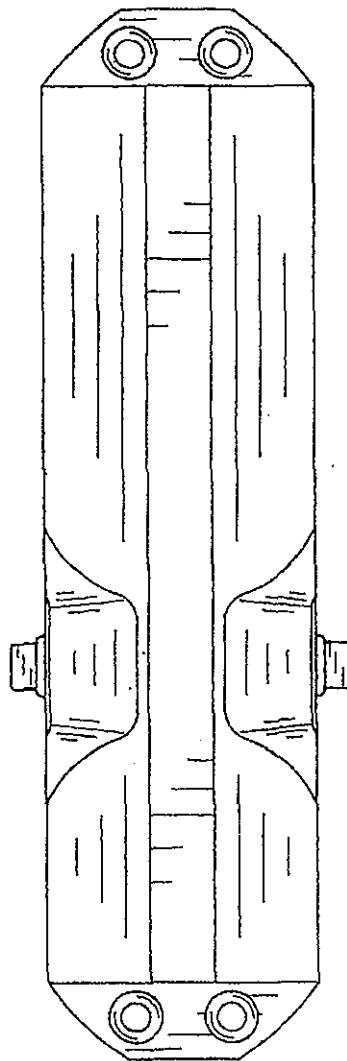


FIG. 3

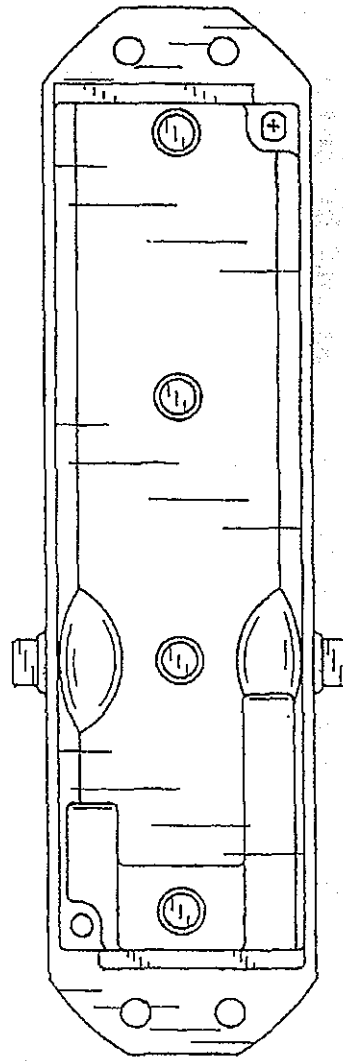


FIG. 4

U.S. Patent

Aug. 29, 2000

Sheet 2 of 4

Des. 429,992

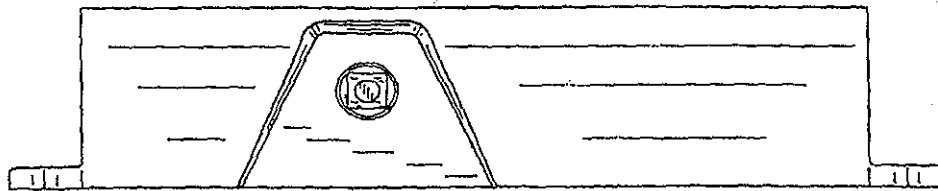


FIG. 5

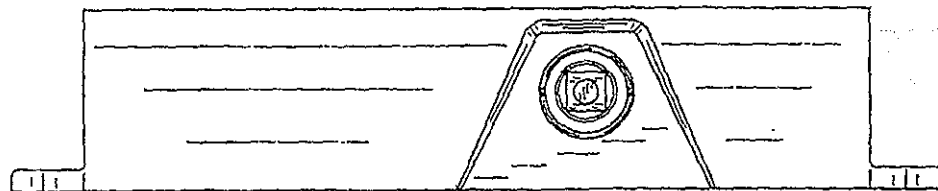


FIG. 6

U.S. Patent

Aug. 29, 2000

Sheet 3 of 4

Des. 429,992

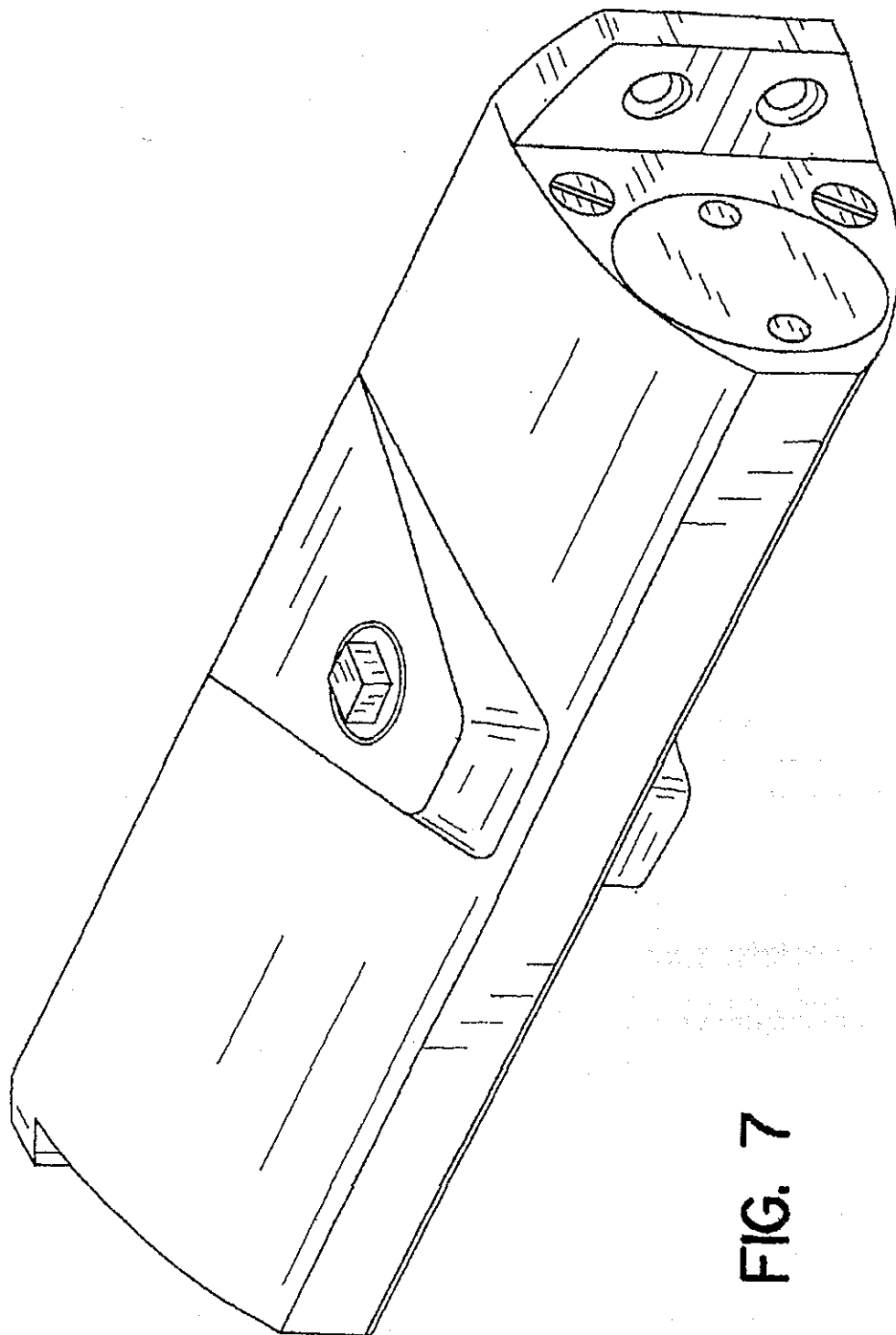


FIG. 7

U.S. Patent

Aug. 29, 2000

Sheet 4 of 4

Des. 429,992

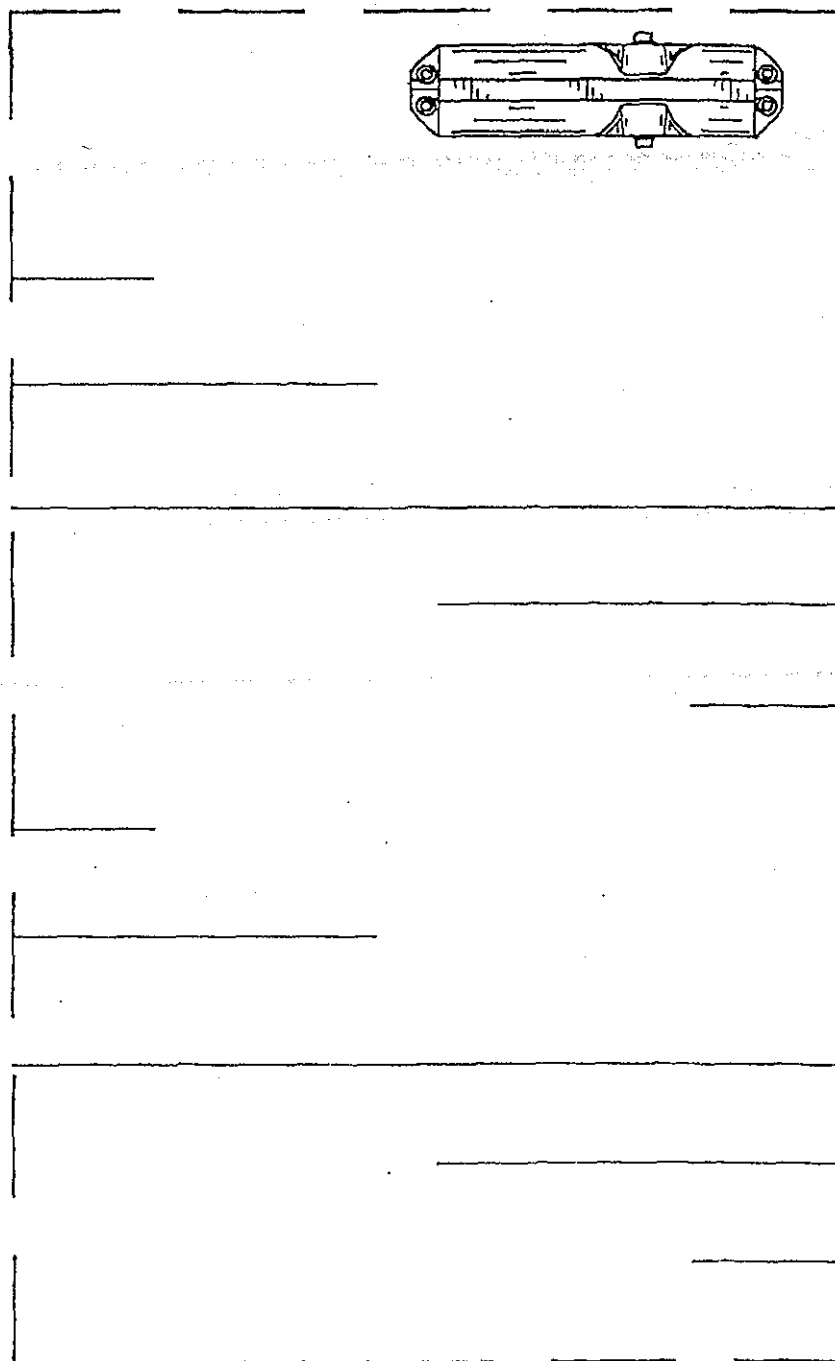


FIG. 8



US005265306A

United States Patent [19]

Yu

[11] Patent Number: 5,265,306

[45] Date of Patent: Nov. 30, 1993

[54] AUTOMATIC DOOR CLOSING DEVICE

[76] Inventor: King-Sung Yu, No. 5, Alley 31, Lane
556, Section 2, Chung-Shan Rd.,
Yuan-Lin, Chang-Hua Hsien,
Taiwan

[21] Appl. No.: 5,037

[22] Filed: Jan. 15, 1993

[51] Int. Cl.³ E05F 3/04; E05F 3/14

[52] U.S. Cl. 16/51; 16/62

[58] Field of Search 16/31, 62, 49, 79, DIG. 39

[56] References Cited

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Primary Examiner—John Sipos

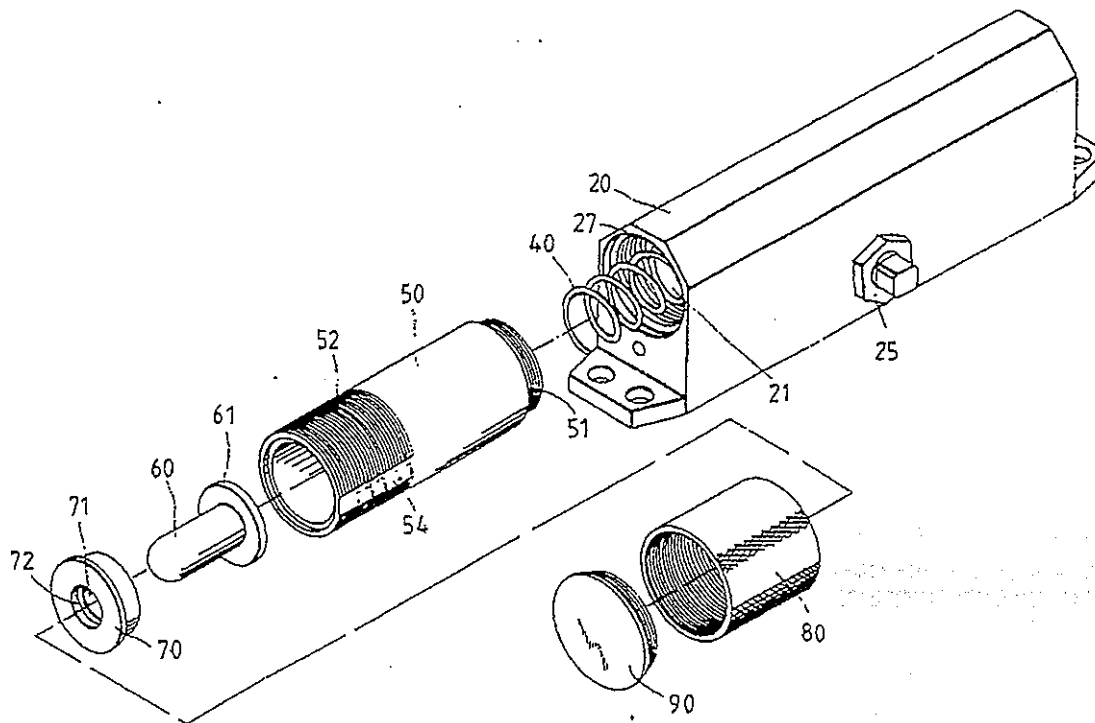
Assistant Examiner—Carmine Cuda

Attorney, Agent, or Firm—Browdy and Neimark

[57] ABSTRACT

An automatic door closing device comprises a base and an oil guiding loop. The base is provided in the direction of a longitudinal axis thereof with a canal and is further provided in the direction of a short axis thereof with a through hole. A sliding block and a spring are received slidably in an outer end portion of the canal. The oil guiding loop comprises a shaft tube having an inner end dimensioned to fit into the canal of the base and having an outer end provided thereon with a threaded portion and tension scale markings, a washer provided with a through hole and fitted into the outer end of the shaft tube, a sustaining rod having an outer end dimensioned to fit into the through hole of the washer and having an inner end provided thereon with an arresting flange dimensioned to fit into the outer end of the shaft tube, a rotating sleeve having an inner wall provided thereon with threads and having an inner diameter so dimensioned as to fit slidably over the threaded portion of the shaft tube, and a cap dimensioned to fit into the outer end of the shaft tube.

2 Claims, 3 Drawing Sheets



5,265,306

1

AUTOMATIC DOOR CLOSING DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to a hydraulic door closing device.

In most offices and private homes, the doors in general and the entrance doors in particular are provided with an automatic door closing device fastened to the door frame and the door. Such a hydraulic device facilitates the slow and automatic closing of the door.

The conventional hydraulic door closing device is composed of a spring having a fixed tension, which must be overcome to cause the door to open. The spring of the conventional hydraulic door is generally devoid of a means capable of adjusting the tension of the spring at such time when the wind is gusty or when the weather is marked with a wild fluctuation of temperature. The climatic factors do play a role in affecting the viscosity of the oil in the automatic door closing device.

A hydraulic door closing device of the prior art is provided with a means capable of adjusting the tension of the spring of the hydraulic door closing device. Such an adjusting means comprises a threaded rod provided at the front end thereof with a guide member which is capable of urging one end of the spring and is capable of sliding in conjunction with the rotation of the guide member. The adjusting means further comprises an adjusting member, which is coupled with the rear end of the threaded rod for controlling the rotation of the guide member. The adjustment of the hydraulic door closing device is initiated by a hexagonal wrench, which is used to actuate the rotation of the threaded rod so as to trigger a forward movement or a backward movement of the guide member. As soon as the guide member has moved close to the rear end of the threaded rod, the spring is caused to compress. On the other hand, when the guide member has moved close to the front end of the threaded rod, the spring is caused to expand. When the spring is in a state of compression, a greater force is needed to open the door. On the contrary, when the spring is in a state of relaxation, the door can be opened with a little effort. However, the prior art hydraulic door closing device described above is by no means free from defects, which are expounded hereinafter.

The extent of the tension of the spring of the prior art hydraulic door closing device is adjusted by rotating the threaded rod of the adjusting means. In other words, the degree of the tension of the spring depends on the number of rotation that the threaded rod has been caused to turn. It often happens that a person, who is adjusting the tension of the spring, might easily mix up the rotation counts. In addition, the threaded rod is caused to rotate by a hexagonal wrench. As there is often a limited maneuvering space available between the hydraulic door closing device and the frame of the door to which the hydraulic door closing device is attached, the operation of rotating the threaded rod by a hexagonal wrench is often hampered.

The guide member of the adjusting means of the prior art hydraulic door closing device is often unable to move with precision in the direction of the axis of the threaded rod when the threaded rod rotates. Moreover, it happens at times that the guide member rotates without sliding forward or backward when the threaded rod rotates.

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SUMMARY OF THE INVENTION

It is therefore the primary objective of the present invention to provide an automatic door closing device with the tension scale markings indicative of the precise extent of the compression of the spring of the device.

It is another objective of the present invention to provide an automatic door closing device with means enabling a person to make a quick adjustment of the degree or the tension of the spring of the device without using a hand tool.

The foregoing objectives, features and functions of the present invention will be better understood by studying the following detailed description of a preferred embodiment of the present invention in conjunction with the drawings provide herewith.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a partial exploded view of an automatic door closing device of the present invention.

FIG. 2 shows a perspective view of the automatic door closing device in combination, according to the present invention.

FIG. 3 shows a partial longitudinal sectional view of the automatic door closing device of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 2 and 3, an automatic door closing device of the present invention is shown to comprise a base 20 of a rectangular construction. The base 20 is provided therein a canal 21 running in the direction of the longitudinal axis of the base 20. The canal 20 is provided at a right end thereof with a female thread 211 for engaging a lock plate 22 which is used to seal off the right end of the canal 20, as shown in FIG. 3. Located along the short axis of the base 20 and under the canal 21 is a through hole 23 having two ends provided respectively with a female thread. A rotating rod 24 is received in the through hole 23 and is fastened securely by two lock rings 25 as to seal off the through hole 23. The base 20 is further provided at a side thereof with three holes and a strip hole, which are in communication with one another to form a part of a hydraulic loop. sliding block 30 received in the canal 21 is capable of being actuated by the rotating rod 24 to slide linearly. A spring 40 is partially received in the canal 21 for affording the sliding block 30 a retrieving force. The left end of the canal 21 of the base 20 is provided with a female threaded portion 27 dimensioned to receive a male threaded portion 31 of a shaft tube 50 having another end provided thereon with a long threaded portion 52 having thereon scale markings 54 arranged in parallel to the axis of the shaft tube 50. A sustaining rod 60 received in the shaft tube 50 has one end provided with an arresting flange 61 for stopping the spring 40. The sustaining rod 60 has another end dimensioned to fit into a through hole 71 of a washer 70, which is provided with an annular groove 72 for receiving therein an oil seal ring to prevent an oil leakage. A rotating sleeve 80 has an inner wall provided thereon with a threaded portion 81 and is so dimensioned as to fit over the long threaded portion 52 of the shaft tube 50 such that the rotating sleeve 80 can be rotated to move forward or backward. A cap 90 is dimensioned to fit into the outer end of the rotating sleeve 80 to stop the outer end of the sustaining rod 60.

5,265,306

3

The adjustment of the tension of the spring 40 of the present invention is done easily by turning the rotating sleeve 80 to move forward or backward until a desired tension scale marking 54 is in alignment with the inner end edge of the rotating sleeve 80.

The automatic door closing device of the present invention has advantages over the prior art device, which are elucidated hereinafter.

It is easy and convenient to adjust the tension of the spring of the automatic door closing device of the present invention by turning the rotating sleeve to move forward or backward without the help of a hand tool such as a hexagonal wrench, which is used in adjusting the tension of the automatic door closing device of the prior art.

In the process of adjusting the tension of the spring of the automatic door closing device of the present invention, the rotating sleeve works precisely every time without failure, in view of the fact that the spring is always urged by the sustaining rod. In the prior art device, the guide member often fails to move forward or backward with precision when the threaded rod rotates, thereby resulting in a failure of the tension adjustment of the spring.

The tension adjustment of the spring of the automatic door closing device of the present invention is further made easy by the tension scale markings provided visibly on the shaft tube.

In comparison with the prior art device which is made of an aluminium material, the material cost of the present invention is relatively lower in view of the fact that the shaft tube of the present invention is made of a non-aluminium material.

What is claimed is:

1. An automatic door closing device comprising: a base provided in the direction of a longitudinal axis thereof with a canal and further provided in the

4

direction of a short axis thereof with a through hole passing through said canal which has one end in which a sliding block is received in such a manner that said sliding block slides in the direction of an axis of said canal and in which a biasing means is received to provide said sliding block with a retrieving force, said through hole receiving therein a rotating rod capable of being turned by an external force so as to actuate said sliding block to make a linear movement; and

an oil guiding loop which is arranged between said base and a side of said sliding block and which further comprises:

a shaft tube having one end that is received in said canal and having another end that remains outside said canal and has a threaded portion of a length provided thereon with tension scale markings;

a washer provided with a through hole and fitted into said another end of said shaft tube;

a sustaining rod having one end dimensioned to fit into said through hole of said washer in such manner that said one end of said sustaining rod extends beyond said washer, said sustaining rod having another end provided thereon with an arresting flange dimensioned to fit slidably into said another end of shaft tube; and

a rotating sleeve having an inner wall provided thereon with threads and having an inner diameter so dimensioned as to fit slidably over said threaded portion of said shaft tube, said rotating sleeve further having an outer end dimensioned to receive therein cap.

2. The automatic door closing device in accordance with claim 1 wherein said through hole of said washer is provided with an annular groove dimensioned to receive therein an oil seal ring.

* * * * *

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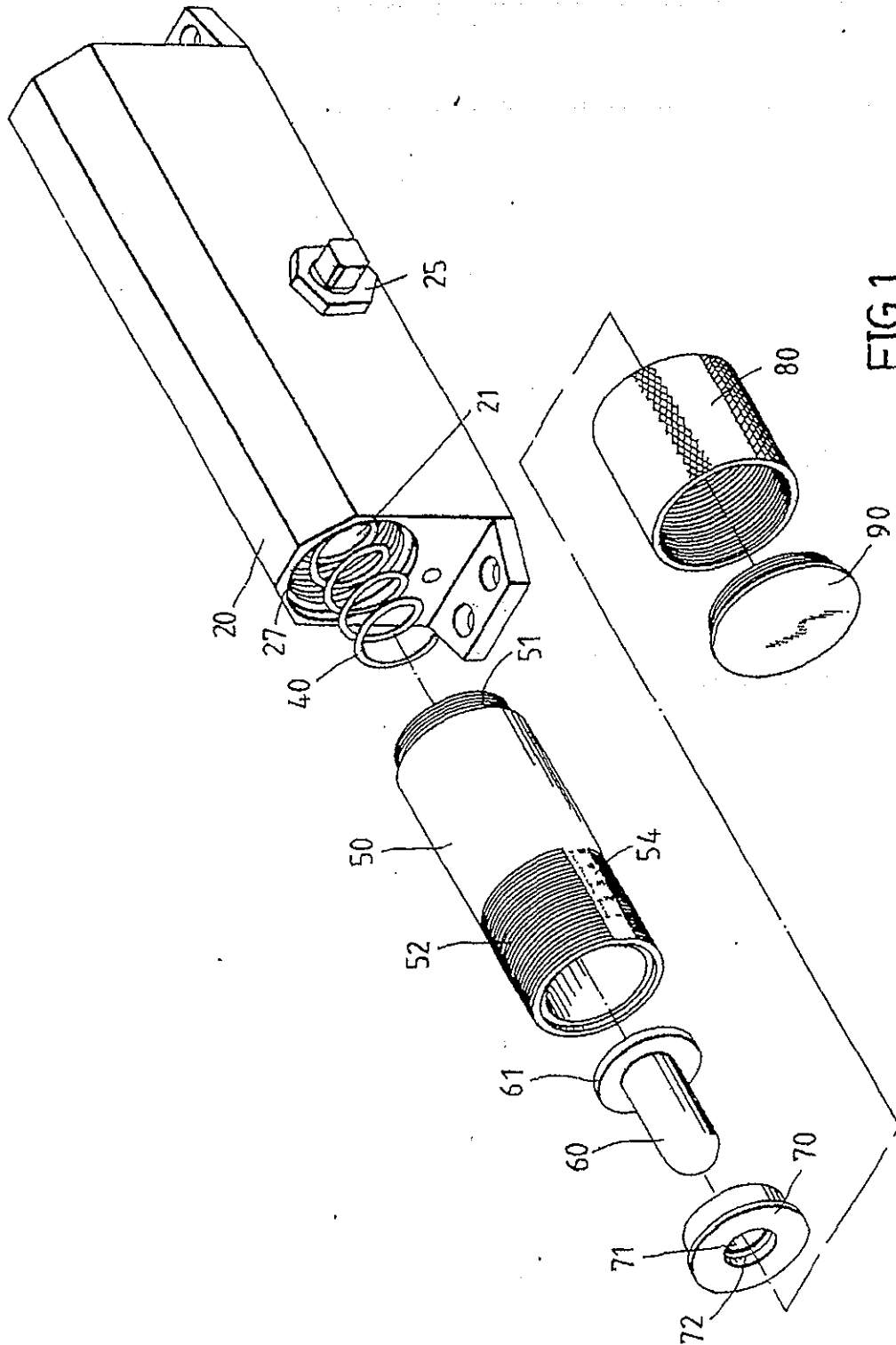
65

U.S. Patent

Nov. 30, 1993

Sheet 1 of 3

5,265,306



U.S. Patent

Nov. 30, 1993

Sheet 2 of 3

5,265,306

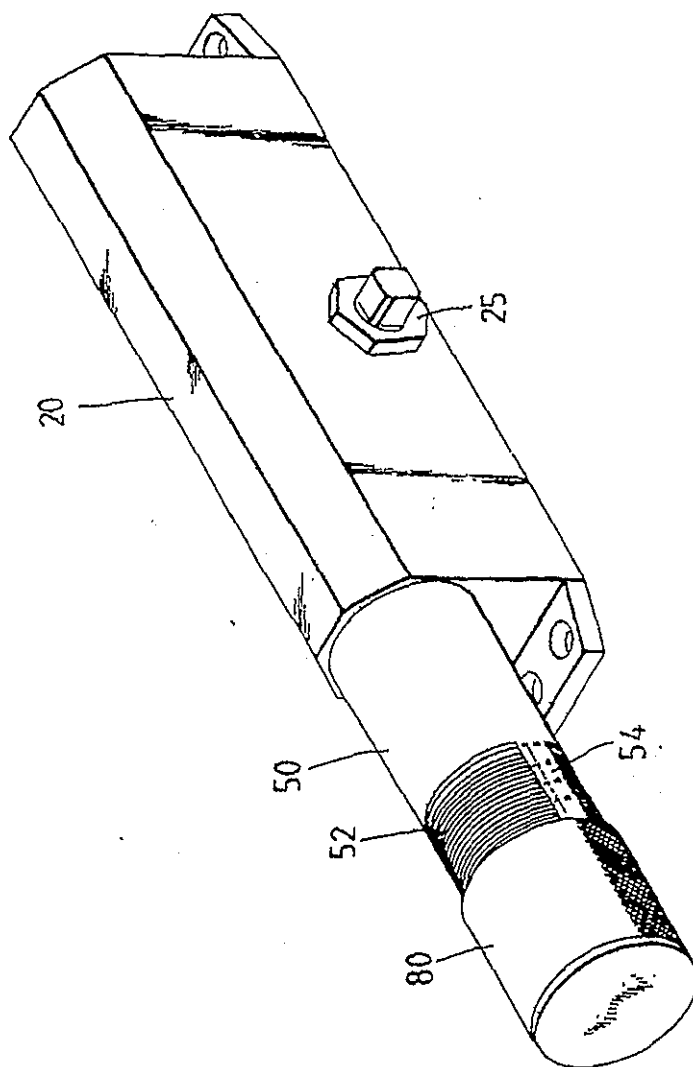


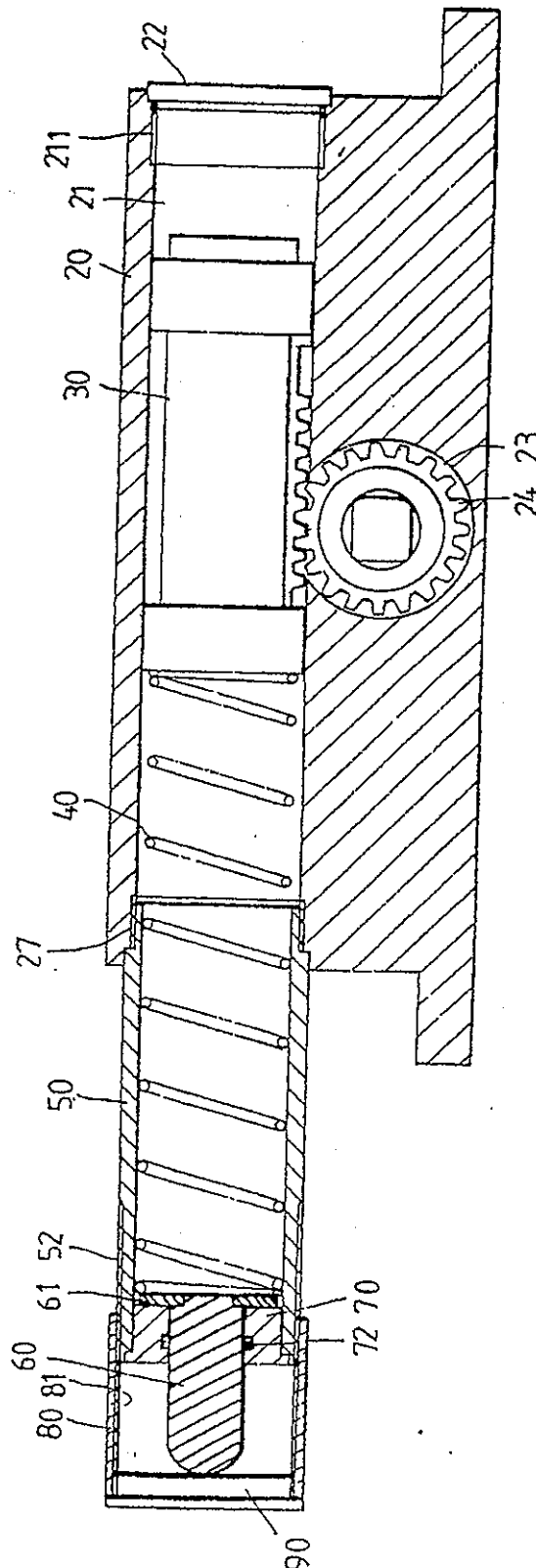
FIG. 2

U.S. Patent

Nov. 30, 1993

Sheet 3 of 3

5,265,306



United States Patent [19]

Okazaki

[11] Patent Number: Des. 281,762

[45] Date of Patent: ** Dec. 17, 1985

[54] DOOR CLOSER

[75] Inventor: Mitsuaki Okazaki, Fuchu, Japan

[73] Assignee: Ryobi Limited, Hiroshima, Japan

[**] Term: 14 Years

[21] Appl. No.: 535,942

[22] Filed: Sep. 26, 1983

[30] Foreign Application Priority Data

Apr. 22, 1983 [JP] Japan 58-17358

[52] U.S. Cl. D8/330

[58] Field of Search D8/330; 16/49, 51, 66,
16/71

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Primary Examiner—B. J. Bullock

Assistant Examiner—Suzanne N. Gitlin

Attorney, Agent, or Firm—Frishauf, Holtz, Goodman & Woodward

[57] CLAIM

The ornamental design for a door closer, as shown and described.

DESCRIPTION

FIG. 1 is a front elevational view of a door closer showing my new design;

FIG. 2 is a rear elevational view thereof;

FIG. 3 is a right side elevational view thereof;

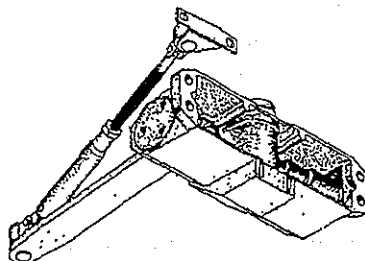
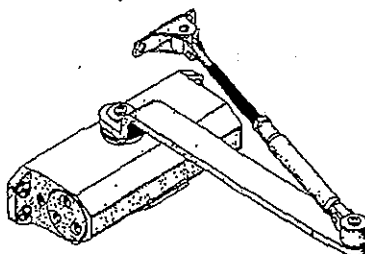
FIG. 4 is a left side elevational view thereof;

FIG. 5 is a top plan view thereof;

FIG. 6 is a bottom plan view thereof;

FIG. 7 is a front left side perspective view thereof; and

FIG. 8 is a rear left side perspective view thereof.



U.S. Patent Dec. 17, 1985 Sheet 1 of 4 Des. 281,762

FIG. 1

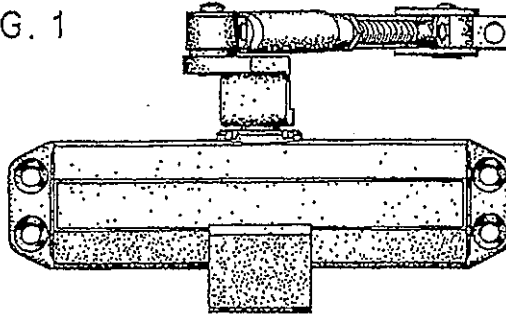
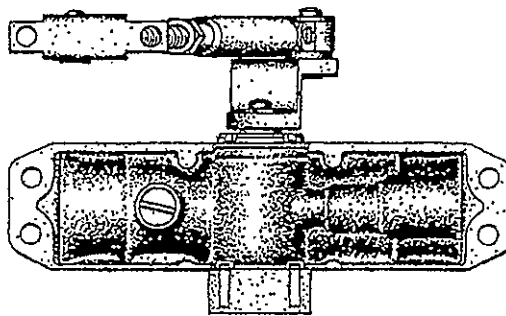


FIG. 2



U.S. Patent Dec. 17, 1985 Sheet 2 of 4 Des. 281,762

FIG. 3

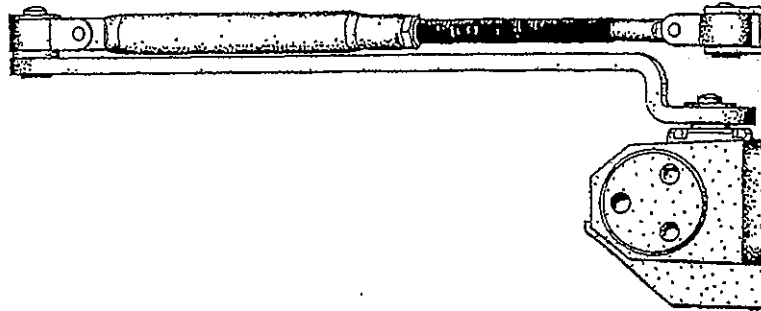
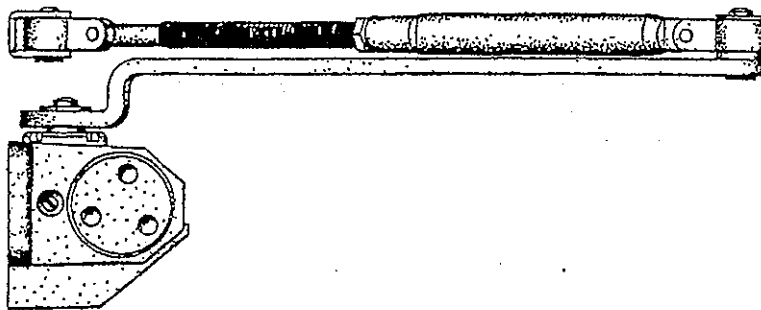


FIG. 4



U.S. Patent Dec. 17, 1985 Sheet 3 of 4 Des. 281,762

FIG. 5

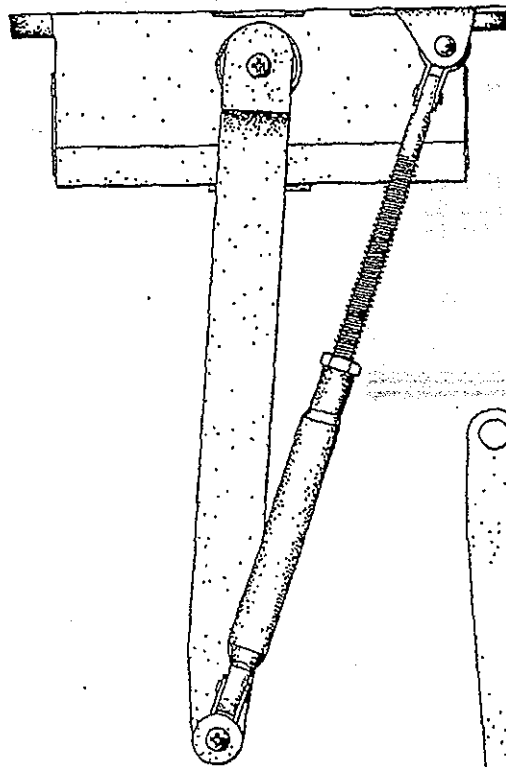
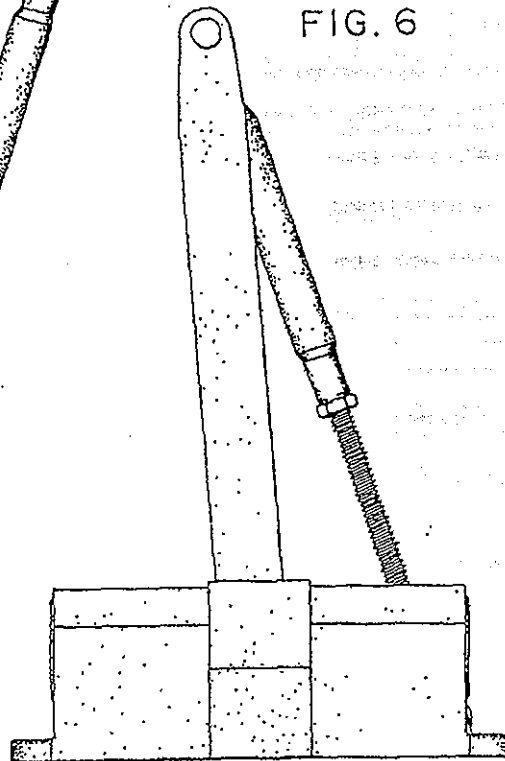


FIG. 6



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FIG. 7

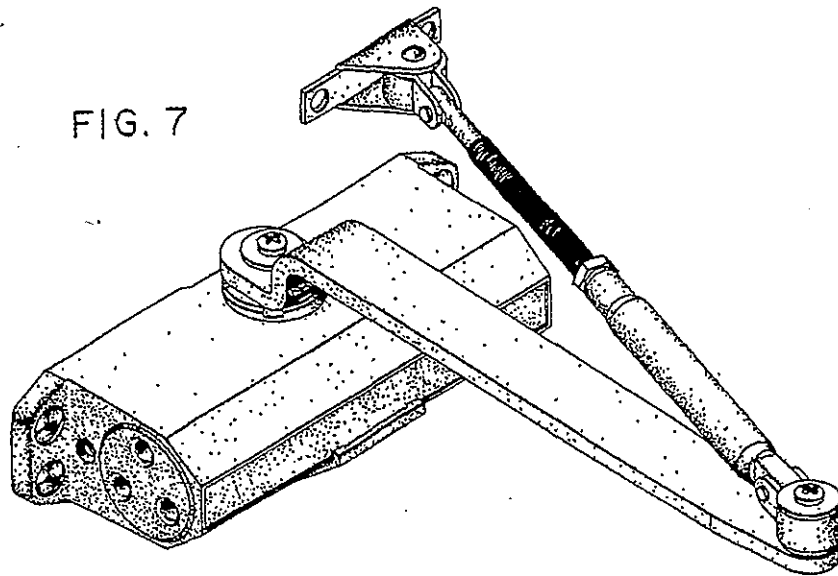
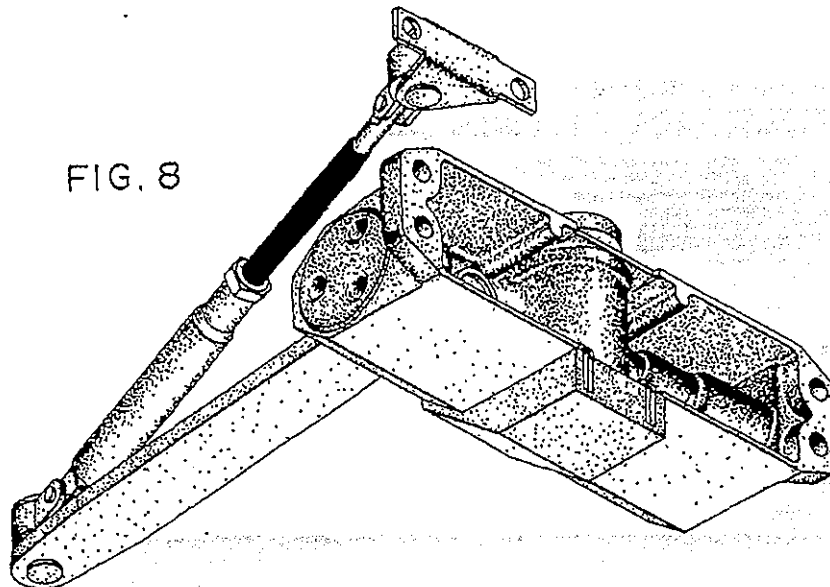


FIG. 8



United States Patent Office

3,546,734

Patented Dec. 15, 1970

1

3,546,734

ADJUSTABLE BACKCHECK MECHANISM FOR DOOR CLOSERS

Roy L. Pollack and David G. Rowley, Princeton, Ill.,
assignors to Schlage Lock Co., San Francisco, Calif.,
a corporation of California

Filed July 10, 1968, Ser. No. 743,864

Int. Cl. E05f 3/10

U.S. Cl. 16—52

8 Claims

ABSTRACT OF THE DISCLOSURE

The invention is characterized by a tubular probe which extends inwardly from the end wall of the rear chamber of door closing and checking mechanism. A floating check valve is carried by the rear piston of the door closing and checking mechanism and said check valve has telescoping relation with the tubular probe at a certain location in the reciprocating movement of the piston due to the closing action of the door, whereby the piston upon telescoping the probe will trap hydraulic fluids in the rear chamber and which can escape only by flowing through a restricted passage provided by the tubular probe.

The invention relates to door checking mechanism of the hydraulic type employing a reciprocating piston for forcing an hydraulic fluid to flow through one or more restricted passageways during the closing action of the door, and has reference more particularly to adjustable backcheck mechanism for such door closers.

In door closers as heretofore manufactured, a backchecking took place when the head of the piston passed a port provided in the cylinder wall at a specific location. As the piston head moved past this port, the liquid remaining in the checking end of the cylinder was confined and the liquid could escape only through the backcheck valve.

The valve could be adjusted so that the volume of liquid allowed to escape could be infinitely regulated. This allowed the closer mechanism to exert a strong or a weak restraining influence on the continued movement of the piston and therefore on the opening swing of the door. This is referred to as the intensity of adjustment.

Piston movement within the cylinder is the determining factor regarding the degree of door opening at which the backchecking function can be initiated. It is often desirable to have this backchecking function take place earlier or later in the opening swing of the door. Previous backchecking mechanisms had no provision for accommodating such a desire.

Accordingly an object of the invention is to provide backcheck mechanism for door closers which can be adjusted for intensity and which can also be varied as to the location at which the backchecking function will occur.

Another object of the invention is to provide backchecking mechanism for an hydraulic door closer wherein a check valve located in one end of the reciprocating piston has telescoping relation with a probe fixed to one end wall of the housing of the closer and extending inwardly, the parts coacting automatically as the piston reciprocates to control the flow of the hydraulic fluid through the piston and to thus exert a restraining influence on the opening swing of the door.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawings and claims appended thereto.

In the drawings which illustrate an embodiment of the

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device and wherein like reference characters are used to designate like parts:

FIG. 1 is a longitudinal sectional view taken through a door closing device of the hydraulic type and which embodies the backchecking mechanism of the invention, the figure showing the piston in a door closed position;

FIG. 2 is a front elevational view of the tubular housing of the door closing device of FIG. 1;

FIG. 3 is a longitudinal sectional view of the door closing device similar to FIG. 1 but showing the piston in an opening position of the door with the check valve in initial telescoping relation with the probe;

FIG. 4 is a cross-sectional view taken along line 4—4 of FIG. 3 and showing the valve formation for controlling the intensity of the backchecking function;

FIG. 5 is a fragmentary top elevational view of the tubular housing as shown in FIG. 2;

FIG. 6 is a fragmentary sectional view showing the backchecking mechanism of FIG. 1 on an enlarged scale with the probe located forwardly for an earlier backchecking function; and

FIG. 7 is a fragmentary sectional view on the same scale as FIG. 5 but showing a modified form of backchecking mechanism coming within the invention.

The door checking device which has been selected for illustrating the present invention is shown in longitudinal section in FIG. 1 wherein the parts have the position which they assume when the door is closed. The housing 10 essentially consists of the metal tubing 11 which is provided with journalling means for a pinion shaft. The top journalling means includes the plate 12 having a substantially flat top surface and an arcuate undersurface so as to fit the curvature of the tubing 11. The plate 12 retains the bearing assembly 13. The plate is fixed to the tubing by securing screws 14. The bottom plate 15 is similar in shape to the plate 12 and said bottom plate retains the bearing assembly 16 and said plate is secured in place on the tubing by the screws 17. The pinion shaft provides the pinion 18 and said shaft has cylindrical bearing portions 20 for journalling relation by the roller bearing assemblies 13 and 16, respectively. Each end of the pinion shaft is formed as at 21 for receiving an arm for connecting the door with the door closer device. The particular end of the pinion shaft to which the arm is connected depends on whether the door is hinged on the left or on the right.

The housing unit 10 by means of the tubing 11 provides a cylinder with a pair of aligned chambers 25 and 26, the chambers having location on opposite sides of the pinion shaft. Chamber 26 on the right side of the shaft is longer than chamber 25 and this feature in the construction of the housing unit has been selected so that power spring 27 can be located in the chamber 26. The closing plug 28 is threadably secured to the end of the chamber 25 for sealing this end. The said plug clamps one leg of the right angled bracket 30 to the metal tubing, thus fixedly securing the bracket to the housing unit. It will be understood that the bracket provides one of the mounting elements for mounting the door closing device. In a similar manner the end of cylinder 26 is closed and sealed by the plug 31 and the right angled bracket 32 is clamped by the said plug to thus fixedly secure the other mounting element for the device to the housing unit.

The plug 28 is centrally apertured for receiving a stem 33 which forms the valve body of the door closer mechanism. The stem in turn is provided with a regulating screw 34 and said stem extends inwardly of the chamber 25 so that the check valve 35 carried by the forward piston head 36 rides on and has telescoping relation with the stem 33. The check valve and the stem provide a valve system removed from the body portion of the housing

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3 and the said parts coast automatically as the piston reciprocates to control the flow of hydraulic fluid through the said end of the piston for controlling and checking the closing action of the door.

The structure and operation of the door checking mechanism shown in FIGS. 1 and 3 is disclosed and claimed in the copending application of Lasier and Pollack Ser. No. 654,306, filed June 28, 1967, now U.S. Pat. No. 3,426,383, issued Feb. 11, 1969 and entitled Door Closer Mechanism. Reference is made to said application for a more complete understanding of the stem 34 and associated parts which occupy the chamber 25.

The forward piston head 36 is joined to a rear piston head 38 by the connecting portions 40 and the portions are spaced for location on respective sides of the pinion 13. One connecting portion has rack teeth on its inside surface for meshing relation with the teeth of the pinion 13. The coil spring 27 is confined between the rear piston head 38 and the rear plug 31. The coil spring is compressed by the opening action of the door and the energy thus stored in the spring functions to move the piston in a direction towards the left for closing the door.

The backchecking mechanism of the invention is located within the chamber 26 and the same has coaction with the float check valve 42 carried by the rear piston 38. The float check valve is similar to 35, which is located in the forward piston 36, both in formation and in operation. The valve has an annular flange which is adapted to seat on a shoulder provided by the piston. When the piston moves from left to right with the opening of the door, the flange engages the shoulder and the valve is in closed position. When the piston moves from right to left with the closing of the door the valve is in an open position. The formation 43 is peened over to retain the float check valve in position within the opening provided for it in the piston 38.

The float check valve is essentially a ring and the same has telescoping relation with an inwardly extending probe indicated in its entirety by the numeral 44. The cylindrical tube or housing 45 of the probe has a tight sealing fit in the plug 31 and the housing is provided at its inner end with a longitudinal slot 46. The regulating screw located within the housing has a solid body portion 47 which is threaded at 48 for threaded relation with the housing at its rear end. The tubular part 50 of the probe has a tight press fit with the body portion to form a unit therewith and the forward extending end of the same is enlarged as at 51. In order to form valving means for intensity regulations the tubular part 50 is provided with the opening 52 which in certain rotated positions of the tubular part can be caused to align or partly align with the slot 46 in the housing.

The outside diameter of the enlarged head 51 of the probe is such that the member will receive the float valve 42. In the opening action of the door the piston 38 and float check valve 42 will travel to the right from the position of FIG. 1 to the position of FIG. 3 and the float check valve will have telescoping relation with the probe. The hydraulic fluid in chamber 26 will flow freely through the center of the float valve until the telescoping of the probe takes place. This action will check the flow of the hydraulic fluid since the only outlet for the fluid is through the slot 46 and opening 52. The incompressibility of the fluid restrains the piston in its movement and this causes a resulting slowing of the opening swing of the door. The restraining action on the door would be abrupt except that the shape of the head 51 of the probe causes a gradual shut-off of the fluid passage decelerating the piston movement evenly. As the door is released and the coil spring 27 causes the piston to move from right to left, the float valve 42 will open allowing unrestricted fluid flow from chamber 25 to chamber 26.

As previously mentioned the intensity of the backchecking function can be regulated by a turning of the regulating screw 47 to align or partly align the opening

4 52 with the slot 46 as illustrated by FIG. 4. Also the probe can be advanced toward the piston 42 to cause the backchecking function to take place earlier in the opening swing of the door. This requires that the regulating screw be rotated the required number of times in order to advance the probe the desired extent as illustrated in FIG. 6. The threaded relation of the regulating screw within its fixed housing makes this longitudinal adjustment of the probe possible.

The backchecking mechanism of the invention is thus unique since the probe can be adjusted to vary the intensity of the backchecking operation and the probe can also be adjusted longitudinally to vary the location at which the function occurs.

In the modified form of the invention shown in FIG. 7 the housing of the probe as well as the regulating screw are longitudinally adjustable for varying the location in the travel of the piston at which the backchecking function is initiated, and for also varying the intensity of the backchecking function.

Referring more particularly to said modification, the piston 38 retains the floating valve 42 by means of the portions 43 which are peened as shown. The probe generally indicated by the numeral 60 extends inwardly from the end wall of the chamber 26. The rear end is threadedly secured at 61 in the plug 31. The probe 60 is tubular and an opening 62 is located in the same in substantial alignment with the reduced end 63 of the regulating screw 64. The screw is located within the right hand end of the probe and said screw is threadedly secured to said probe as at 65. The end 63 of the regulating screw is cut away at 66 and by rotating the screw to adjust its position longitudinally, the size of the fluid escape passage formed by the opening 62 and the cut away portion 66 can be varied. This varies the intensity of the backchecking operation.

The longitudinal position of the probe is also adjustable by rotating the probe with respect to the plug 31. The threaded relation of the parts effects a longitudinal positioning of the probe for either an earlier or a later initiation of the backchecking function which takes place when the float valve 42 telescopes the probe 60.

The invention is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings, as various other forms of the device will, of course, be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

We claim:

1. In a backchecking mechanism for a door closer device of the hydraulic type, the combination comprising:
 - a housing having a cylindrical bore therein for containing hydraulic fluid;
 - a probe fixed to one end wall of said housing and extending inwardly within said cylindrical bore;
 - a piston mounted within said cylindrical bore for reciprocating movement in first and second directions;
 - said piston having a first opening, extending longitudinally through said piston and being complementarily shaped to said probe for receiving said probe and permitting said piston to telescope said probe when it is reciprocated in said first direction;
 - said probe being disposed in relation to said first opening in said piston such that said probe and said first opening are out of telescoping relation when said piston is positioned at the terminus of said reciprocating movement in said second direction;
 - said piston having a second opening extending longitudinally through said piston;
 - check valve means, carried by said piston for controlling said second opening, which closes when said piston reciprocates in said first direction and opens when said piston reciprocates in said second direction, whereby a quantity of hydraulic fluid is trapped between said piston and said end wall of said cylinder since said check valve means are closed when said

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piston has telescoping relation with said probe and which action substantially closes said first and second openings in said piston;

and restricted passage means for controlling flow of hydraulic fluid from said trapped side of said piston to the opposite side of said piston during movement of said piston from its initial telescoping relation with said first opening of said probe until said piston begins said reciprocating movement in said second direction.

2. Backchecking mechanism for a door closer device as defined by claim 1, wherein the check valve means is in the form of a ring and which is located in said second opening in the piston, whereby the telescoping action takes place between the ring and the probe.

3. Backchecking mechanism for a door closer device as defined by claim 1, wherein the probe is tubular for a portion of its length, and whereby the said tubular portion of the probe forms a part of the restricted passage controlling flow of the hydraulic fluid as claimed.

4. Backchecking mechanism for a door closer device as defined by claim 1, wherein the check valve means is in the form of a ring and which is located in the opening in the piston, whereby the telescoping action takes place between the ring and the probe, and wherein the probe is tubular for a portion of its length and which is so constructed and arranged that the tubular portion of the probe forms a part of the restricted passage controlling flow of the hydraulic fluid as claimed.

5. Backchecking mechanism for a door closer device as defined by claim 1, wherein the nose end of the probe within the cylindrical bore is tapered in shape having its minimum size at its nose end and having its maximum size at its end towards the wall of the housing.

6. In a backchecking mechanism for a door closer device of the hydraulic type, the combination with a housing providing forward and rearward opposed chambers, of a piston having reciprocating movements within the chambers as a result of opening and closing action of the door, a generally tubular, longitudinally adjustable probe extending inwardly of the rearward chamber, a rotatable adjusting screw associated with the probe at its rearward end and forming an adjustable restricted passage permitting flow of the hydraulic fluid from the rearward chamber through the passage and through the tubular part of the probe to the inwardly extending end of the probe, a check valve carried in an opening extending through the piston by that end of the piston which has location within the rearward chamber, said check valve being in the form of a ring having an opening just slightly larger in diameter than the probe, said check valve having telescoping relation with the probe at a certain location in the reciprocating movement of the piston due to the opening action of the door, said check valve opening to permit unrestricted flow of the hydraulic fluid through said end of the piston only during closing action of the door, whereby the piston upon telescoping action with the probe will trap hydraulic fluid in said rearward chamber and which can escape only by flowing through said restricted passage.

7. In a door closing device, the combination with a housing providing forward and rear chambers, a piston having reciprocating movements within the housing as a result of opening and closing movement of the door, said piston including a rearward piston head located within the rear chamber, a probe supported by the rear wall of the housing and having a tubular part extending within the rear chamber, an adjusting screw in associated relation

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with the rear portion of the probe and providing a restricted passage leading from the rear chamber and including the tubular part of the probe, a floating check valve in the form of a ring having location in an opening extending through the rearward piston head, said check valve having telescoping relation with the probe at a certain location in the reciprocating movement of the piston head due to opening action of the door, said check valve opening to permit unrestricted flow of the hydraulic fluid through said rearward piston head only during closing action of the door, whereby the piston head upon telescoping action with the probe will trap hydraulic fluid in said rear chamber between the piston head and the rear wall of the housing, and whereby said trapped fluid can escape only by flowing through the restricted passage, threaded means rendering the adjusting screw rotatably adjustable for varying the size of the restricted passage, and said probe having threaded relation with respect to the rear wall of the housing whereby the longitudinal position of the probe can be adjusted to vary the location in the reciprocating movement of the piston head at which the check valve has initial telescoping relation with the probe.

8. In a backchecking mechanism for a door closer device of the hydraulic type, the combination with a housing providing forward and rearward opposed chambers, of a piston having reciprocating movements within the chambers as a result of opening and closing action of the door, a generally tubular probe extending inwardly of the rearward chamber, said probe including a tapered inwardly extending nose having a minimum diameter at the nose end and a maximum diameter at its rearward end, an adjusting screw associated with the probe at its rearward end and forming a restricted passage permitting flow of hydraulic fluid from the rearward chamber through the passage and through the tubular part of the probe to the inwardly extending end of the probe, a check valve carried in an opening extending through the piston by that end of the piston which has location within the rearward chamber, said check valve being in the form of a ring having an opening just slightly larger in diameter than the maximum diameter of the probe, said check valve having telescoping relation with the probe at a certain location in the reciprocating movement of the piston due to the opening action of the door, said check valve opening to permit unrestricted flow of the hydraulic fluid through said end of the piston only during closing action of the door, whereby the piston upon telescoping action with the probe will trap hydraulic fluid in said rearward chamber and which can escape only by flowing through said restricted passage.

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MARVIN A. CHAMPION, Primary Examiner

I. A. CALVERT, Assistant Examiner

U.S. Cl. X.R.

16-62

Dec. 15, 1970

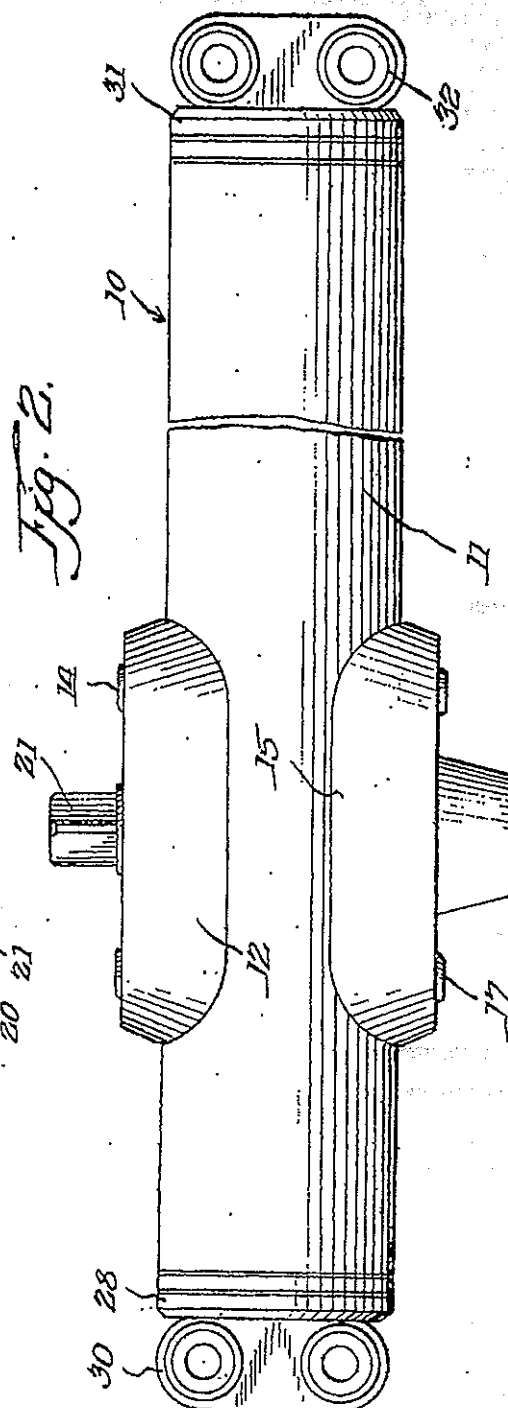
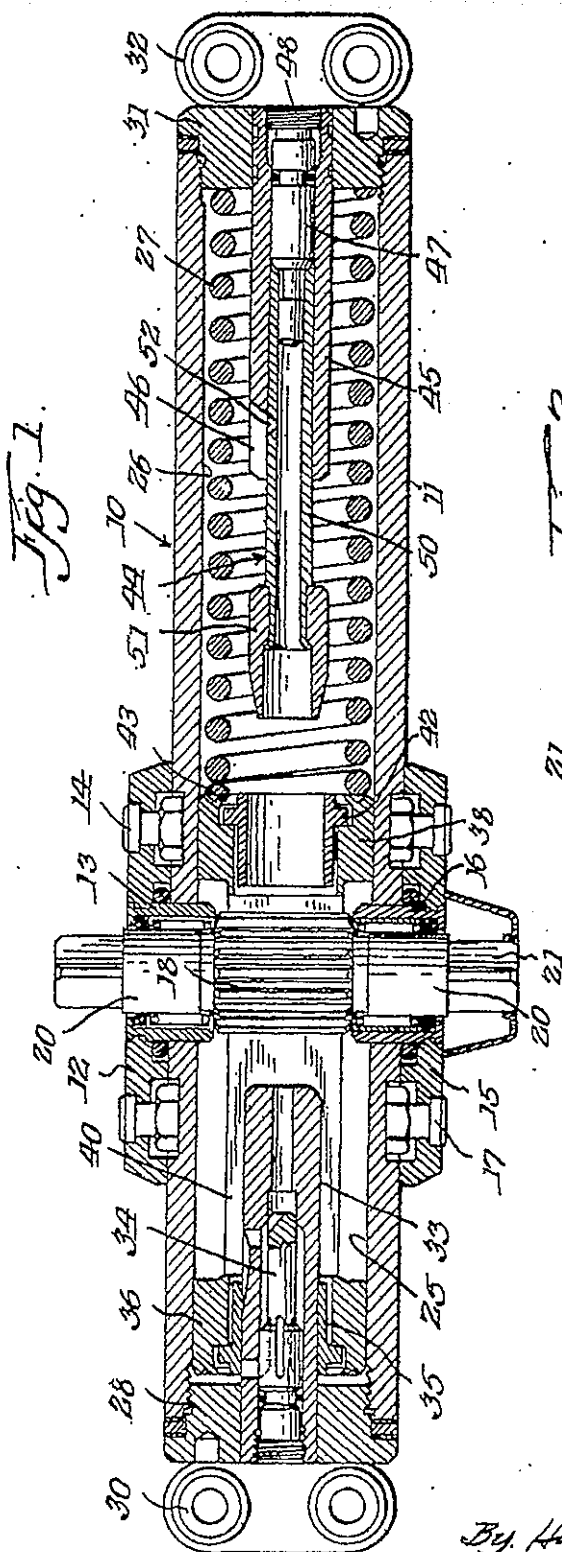
R. L. POLLACK ET AL

3,546,734

ADJUSTABLE BACKCHECK MECHANISM FOR DOOR CLOSERS

Filed July 10, 1968

3 Sheets-Sheet 1



Inventors.
Roy L. Pollack, &
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Dec. 15, 1970

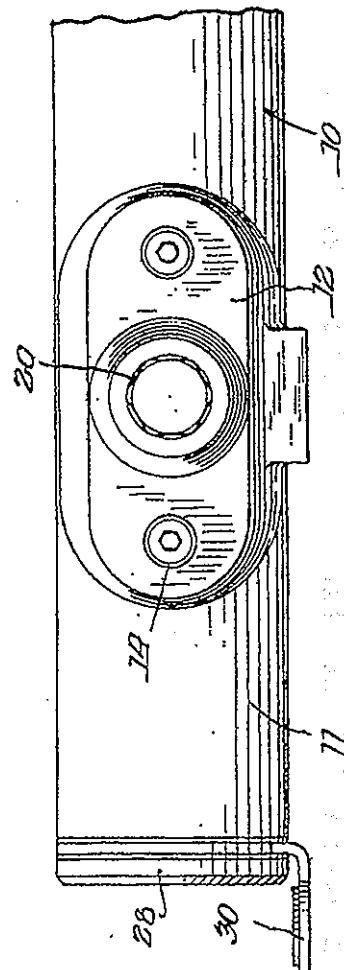
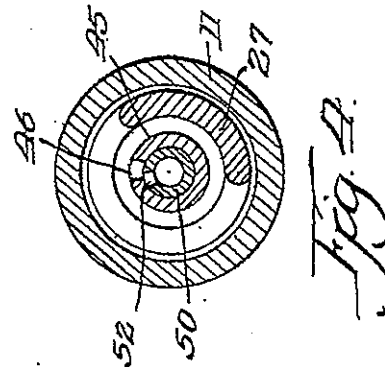
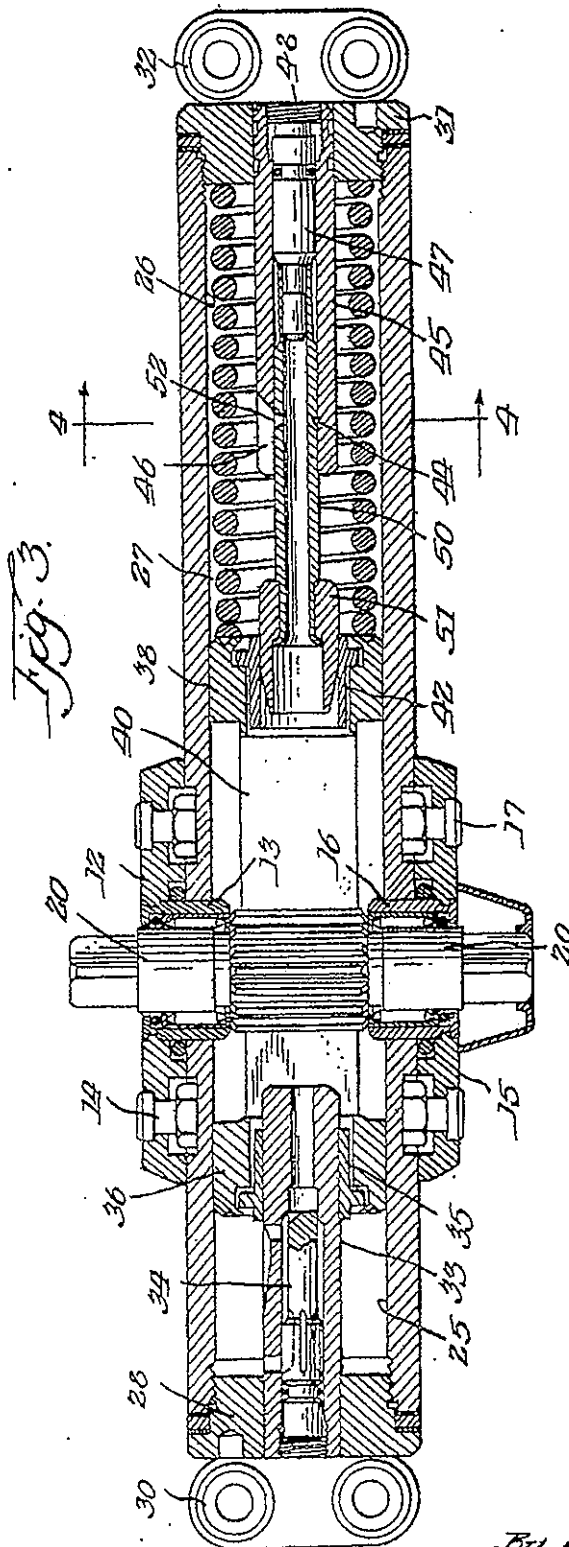
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3,546,734

ADJUSTABLE BACKCHECK MECHANISM FOR DOOR CLOSERS

Filed July 10, 1968

3 Sheets-Sheet 2



Inventors:
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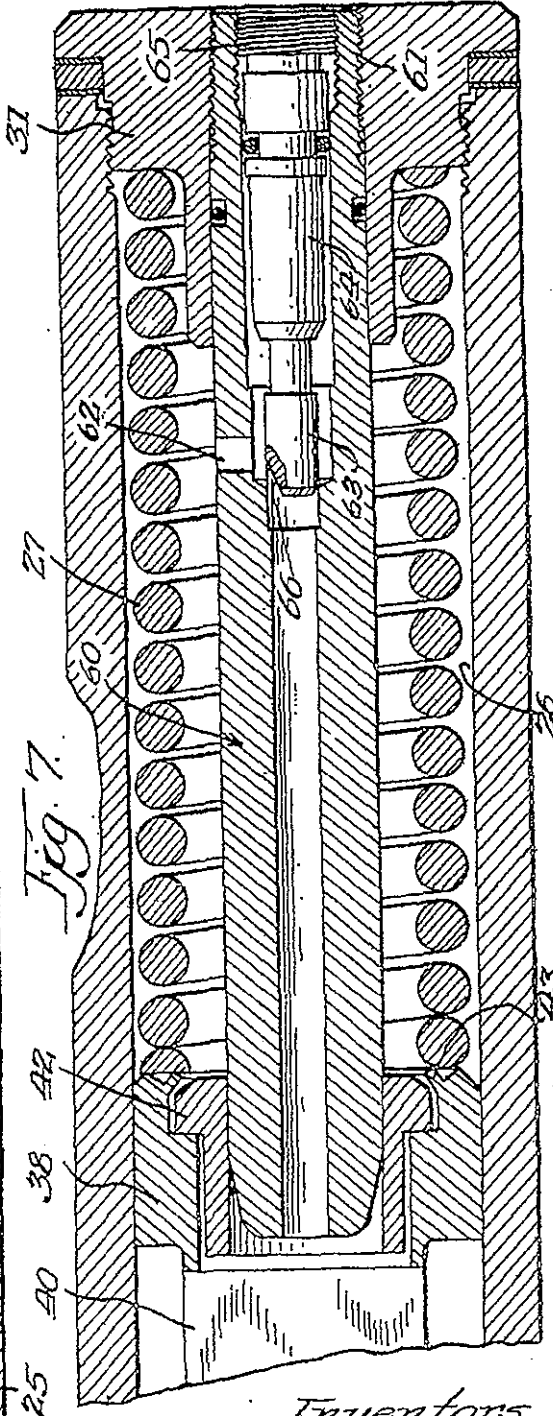
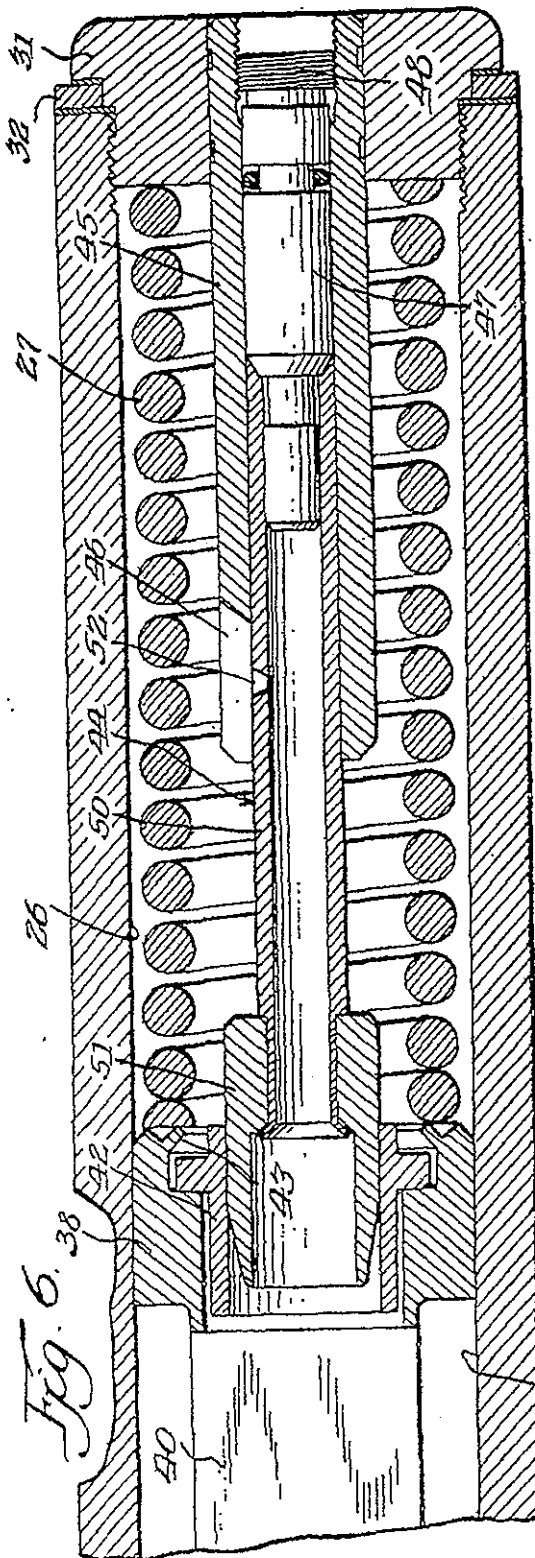
R. L. POLLACK ET AL

3,546,734

ADJUSTABLE BACKCHECK MECHANISM FOR DOOR CLOSERS

Filed July 10, 1968

3 Sheets-Sheet 3



Inventors:
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PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,546,734 Dated January 18, 1971
Inventor(s) ROY L. POLLACK and DAVID G. ROWLEY

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 22, "fluids" should read --fluid--.

Column 3, line 7, "aplication" should read
--application--.

Column 4, line 59, after "shaped to said probe"
insert ,

SIGNED AND
SEALED
MAR 16 1971

MAR. 16, 1971

(SEAL)

Attest:

Edward M. Fletcher, Jr.

Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patent

United States Patent Office

3,426,382

Patented Feb. 11, 1969

1

3,426,382

HOUSING FOR DOOR CLOSING AND CHECKING MECHANISM

Thomas R. Lasier and Roy L. Pollack, Princeton, Ill., assignors to Schlage Lock Co., San Francisco, Calif., a corporation of California

Continuation-in-part of application Ser. No. 654,306, June 28, 1967. This application Sept. 27, 1967, Ser. No. 670,865

U.S. Cl. 16-49

Int. Cl. E05f 3/00, 3/04

5 Claims

ABSTRACT OF THE DISCLOSURE

The invention provides housing structure for door checking mechanism wherein a piston reciprocates within the housing and one end of the piston carries improved valving means which has movement in telescoping relation on a fixed valve body as the piston reciprocates. The housing includes a metal tube to which journalling plates are secured exteriorly and which is closed at respective ends by closing plugs.

The invention relates to door closing and checking devices and has reference in particular to improved housing structure for such devices.

This application is a continuation-in-part of our co-pending application Ser. No. 654,306, filed June 28, 1967, and entitled, Door Closer Mechanism.

In hydraulic door closing and checking devices as heretofore manufactured, the body portion of the device was formed by a cast unit which provided journalling means for the pinion shaft and also the aligned chambers for the reciprocating piston. The porosity of the casting and the extensive machining operations required of the same presented serious problems to those companies manufacturing such door closers. In an endeavor to overcome these problems so as to materially reduce manufacturing costs and in a further endeavor to improve and streamline the door closing devices, the present invention contemplates a housing unit essentially consisting of metal tubing having attached journalling means for the pinion shaft.

Accordingly one of the objects of the invention is to provide a housing for door closing and checking devices which will be economical to manufacture since machining costs will be substantially reduced although a high standard as regards strength and ruggedness will be obtained.

Another object of the invention is to provide a housing unit for hydraulic door closers which will essentially consist of metal tubing.

A further object resides in the provision of a housing unit for devices of the character described wherein a metal tube is employed with end closing plugs and exterior journalling plates being releasably secured to the metal tubing to complete the structure.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawings and claims appended thereto.

In the drawings which illustrate an embodiment of the device and wherein like reference characters are used to designate like parts.

FIGURE 1 is a front elevational view of housing structure for a door closing and checking device which has been selected for illustrating the invention;

FIGURE 2 is a top plan view of the unitary housing structure shown in FIGURE 1;

FIGURE 3 is a fragmentary longitudinal sectional view taken through the door closing and checking device of

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FIGURE 1 and showing the various elements of the mechanism in a door opening position; and

FIGURE 4 is an end elevational view looking towards the left of the unitary housing structure as shown in FIGURE 2.

The housing of the invention is shown in the drawings as essentially comprising a metal tube 10 although a tube of other suitable material may be used. Steel tubing having the required outside and inside diameters and having the required wall thickness is preferred for the housing, and such tubing can be purchased in long sections, and then cut to the lengths desired. The tubing 10 is provided with journalling means for the pinion shaft 11 as clearly shown in FIGURE 3. The top journalling means including the plate 12 is releasably secured to the tube 10 by the screws 13 and said plate retains the top journalling element in the form of a bearing ring 14 for the pinion shaft. The said plate has a substantially flat top surface although the undersurface of the plate is arcuate so as to fit the curvature of the tubing 10. The bottom journalling element in the form of a bearing ring 16 is retained by the bottom plate 17 which is similar in shape to plate 12, being releasably secured to the tube 10 by the securing screws 18. The pinion shaft 11 provides the pinion 20 and the said shaft has spaced bearing portions 21 and 22 located in the bearing rings 14 and 16, respectively, which forms the actual journalling elements for the pinion shaft. Each end of the pinion shaft is squared as at 23 for receiving an arm for connecting the door with the door closer device. The particular end of the pinion shaft to which the arm is connected depends on whether the door is hinged on the left or on the right.

The cylinder formed by the tube 10 provides a pair of aligned chambers 25 and 26, FIGURE 3, which have location on opposite sides of the pinion shaft. Chamber 26 on the right hand side is longer than chamber 25 and this feature in the design of the housing unit has been selected so that the power spring 27 can be located in chamber 26. The closing plug 28 is threadedly secured to the end of chamber 25 for sealing this end, the said plug clamping one leg of the right angled bracket 30 to the metal tube 10, thus fixedly securing the bracket to the housing unit. The bracket 30 provides one of the mounting elements for mounting the door closing device. In a similar manner the end of chamber 26 is closed and sealed by the plug 31 and the right-angled bracket 32 is clamped by said plug to thus fixedly secure the other mounting element to the housing. As best shown in FIGURES 2 and 4 the journalling plates 12 and 17 are shaped to provide a flat rear surface on approximately the same plane as the brackets 30 and 32 for engagement with the same mounting surface, thus improving the mounting stability of the device.

Since the restricted passages and valve means as heretofore located in the cast body portions of door closers have been eliminated in the present housing unit, it is necessary to relocate the regulating valve unit and provide for direct coaction with the reciprocating piston. A preferred arrangement of such relocated door checking mechanism is disclosed and claimed in the parent copending application previously identified. However, to assure full appreciation of the many advantages to be obtained by the cylindrical tubing of the present housing unit, the said door checking mechanism will be briefly described.

The hollow stem 33 is fixed to the plug 28 and the stem carries a regulating screw 34 which is threadedly secured at 35 within the stem. The stem accordingly functions as a valve body and the combination of stem and regulating screw provides restricted passages such as 36 and 37 with respect to the openings 38 and 39. A double ended piston member is located within the tubing 10 and the piston

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member is reciprocated by rotation of the pinion shaft in the closing and opening actions of the door. The hydraulic fluid within the housing is thus forced back and forth between the chambers 25 and 26. The coil spring 27 is confined between the rear piston head 40 and the plug 31. The coil spring is compressed on the opening action of the door and the energy stored in the spring functions to move the piston in a direction towards the left, FIGURE 3, for closing the door. The forward piston head 41 is centrally bored to provide an opening 42 of special shape for accommodating the floating check valve 43. The check valve is carried by the piston head 41 so as to ride on the valve body 33 as the piston reciprocates. The check valve is retained in place within the piston head by the split retaining washer 44.

FIGURE 3 shows the position which the parts assume in the opening of the door as the piston member moves towards the end of its reciprocating stroke in a direction towards the right. The check valve 43 is open to permit flow of the hydraulic fluid through the piston head 41 from chamber 26 to chamber 25. When the door closes under spring pressure exerted by the coil spring 27 the piston member will move in a direction towards the left and the check valve 43 will automatically close. The hydraulic fluid trapped in the chamber 25 is forced to flow through the openings 38 and 39 and through the restricted passages 36 and 37 to be discharged from the central bore 45 of the stem 33. When the piston head 41 has moved a sufficient distance beyond the rear opening 39 the hydraulic fluid will exit from this opening. Thus continued movement of the piston head 41 in a door closing direction is checked only by the restricted passage 36. The restricted passages 36 and 37 can be varied as to size by rotative and longitudinal adjustments of the regulating screw 34 which is threaded at 35 for this purpose. Accordingly, the checking of the closing action of the door can be adjusted to the speed desired.

The housing for the door checking mechanism as shown in FIGURE 3 is formed primarily by cylindrical metal tubing which requires a minimum of machining operations for rendering the same useful. The journalling plates 12 and 17 can be readily attached to the exterior of the metal tubing and the ends of the tubing are closed and sealed by the threaded plugs 28 and 31. The said plugs perform a dual function since they also secure the mounting brackets to the cylindrical tubing.

The invention is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings as various other forms of the device will, of course, be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

What is claimed is:

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1. In a housing for door closing and checking mechanism, in combination, a body portion formed by a length of cylindrical tubing having the desired inside and outside diameters and having the desired wall thickness, plugs having an inserted relation and being secured to the cylindrical tubing at each end thereof for closing and sealing said ends, a pair of journalling plates fixedly secured to the exterior of the tubing in substantially diametrically opposed relation and being located approximately centrally of the length of the tubing, each journalling plate having a length less than approximately one-half of the length of the body portion, each journal-journalling element in the form of a bearing ring, and a mounting bracket having an opening therein for receiving a mounting bracket fixedly secured to the tubing at each end.

2. A housing for door closing and checking mechanism as defined by claim 1, wherein the body portion is formed by a length of metal tubing.

3. A housing for door closing and checking mechanism as defined by claim 1, wherein the journalling plates each have a substantially flat exterior surface and an undersurface which is arcuate so as to conform to the curvature of the tubing.

4. In a housing for door closing and checking mechanism, in combination, a body portion formed by a length of tubing having the desired outside and inside diameters and having the desired wall thickness, plugs threaded to the tubing at each end thereof for closing and sealing said ends, a mounting bracket fixedly secured to the tubing at each end and by being confined between the end of the tubing and the plug at said end, and journalling plates fixedly secured to the exterior of the tubing at a location off center and towards one end of the tubing.

5. A housing for door closing and checking mechanism as defined by claim 4, wherein the body portion is formed by a length of metal tubing, and wherein the journalling plates include a top and a bottom plate each having a substantially flat exterior surface and an undersurface which is arcuate so as to conform to the curvature of the tubing.

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JAMES T. McCALL, *Primary Examiner.*

JAMES L. KOHNEN, *Assistant Examiner.*

Feb. 11, 1969

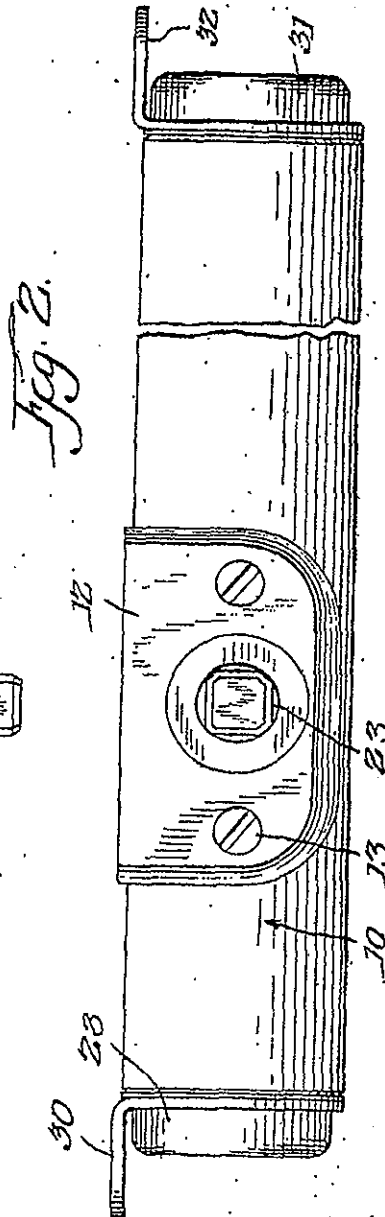
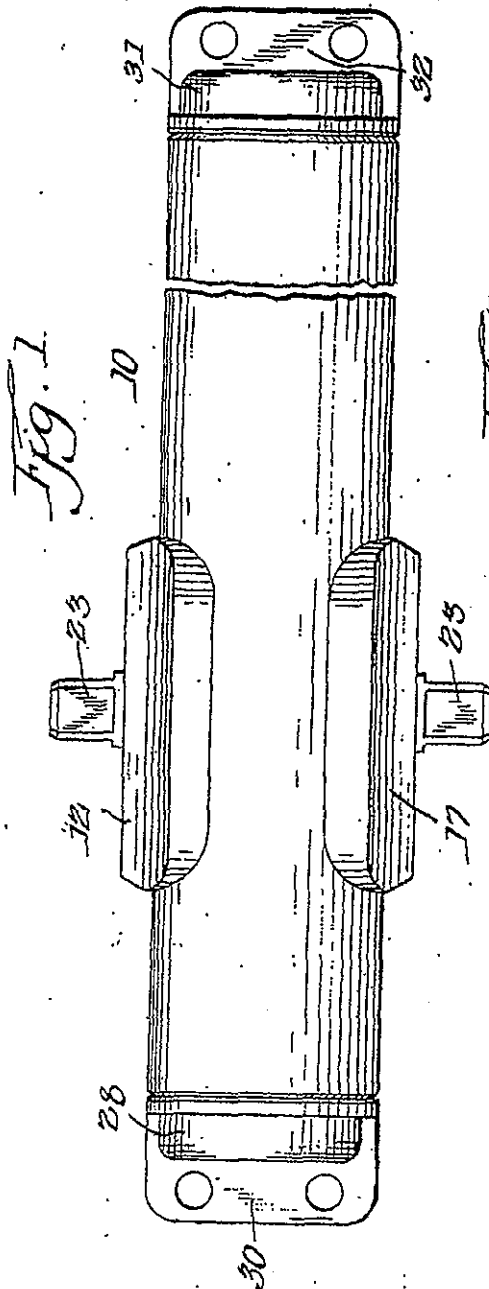
T. R. LASIER ETAL

3,426,382

HOUSING FOR DOOR CLOSING AND CHECKING MECHANISM

Filed Sept. 27, 1967

Sheet 1 of 2



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Feb. 11, 1969

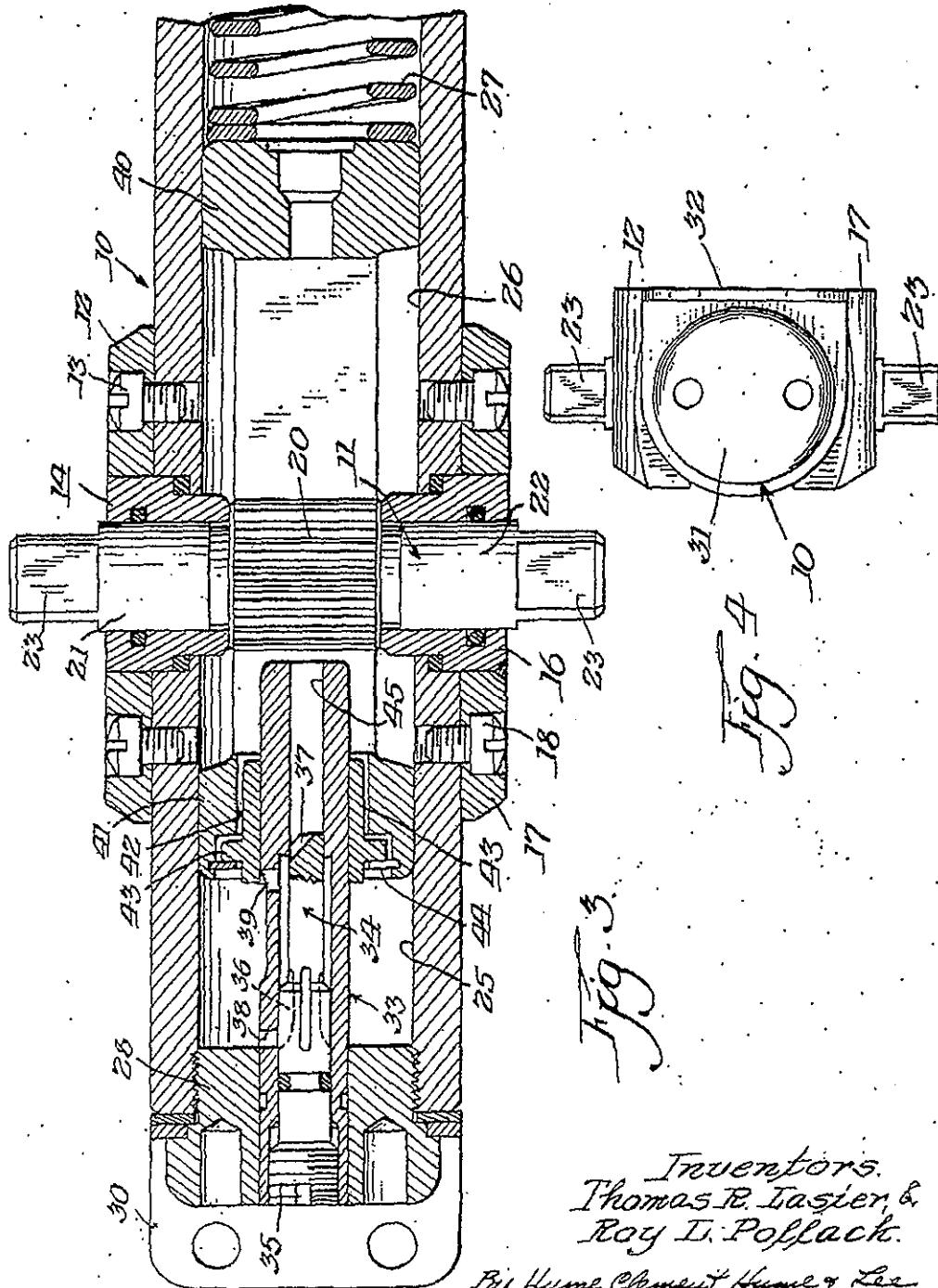
T. R. LASIER ETAL

3,426,382

HOUSING FOR DOOR CLOSING AND CHECKING MECHANISM

Filed Sept. 27, 1967

Sheet 2 of 2



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 Attys.

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,426,382

February 11, 1969

Thomas R. Lasier

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3, line 18, "reciproacting" should read -- reciprocating --. Column 4, lines 13 to 16, "journalling element in the form of a bearing ring, and ling plate having an opening therein for receiving a a mounting bracket fixedly secured to the tubing at each end." should read -- ling plate having an opening therein for receiving a journalling element in the form of a bearing ring, and a mounting bracket fixedly secured to the tubing at each end. --.

Signed and sealed this 24th day of March 1970.

(SEAL)

Attest:

Edward M. Fletcher, Jr.

Attesting Officer

WILLIAM E. SCHUYLER, JR.

Commissioner of Patents

EXHIBIT C

PATULA & ASSOCIATES

ATTORNEYS & COUNSELORS AT LAW
A PROFESSIONAL CORPORATION

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VIA OVERNIGHT COURIER - SATURDAY DELIVERY

May 25, 2001

Mr. Huichen C. Tang
President
America DoorMax, Inc.
2457 Brakdoll Road
Naperville, Illinois 60565

Re: DORMA GmbH & Co. v. America DoorMax, Inc.
Our File No. 5401/55429

Dear Mr. Tang:

We are patent litigation counsel representing DORMA GmbH & Co. concerning the matter of your company's infringement of our client's U.S. Design Patent No. D429,992 issued on August 29, 2000. A copy of the issued patent is enclosed. Your infringing products, specifically the DM234 door closer design, literally infringe our client's patented design for a Door Closer. A copy of the DM234 design specifications, as well as your America DoorMax sales brochure evidencing the offer for sale of the DM234 door closer design, are enclosed. Nils H. Ljungman & Associates initially sent you notice of your infringement on May 4, 2001 requesting that you respond by May 25, 2001 (enclosed herein). A response to that notice has not been received to this date. As such, this issue has been escalated and the notice contained herein will be your last, as we will initiate litigation proceedings if you do not immediately respond.

United States Code Title 35, Section 271(a) stipulates that "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent thereof, infringes the patent." This section is enforceable notwithstanding the infringers' intentions upon the creation, sale, and/or use of the infringing device. As such, even if you sell and/or use the DM234 design without knowledge or intent of infringing our client's U.S. Patent, you are still liable for infringement under Title

EXHIBIT

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Therefore, DORMA GmbH & Co. demands that America DoorMax, Inc. immediately cease and desist from such infringing activities including, but not limited to, the production, use, and sale of the DoorMax DM 234 device and all devices and designs associated therewith. While our client wishes to resolve this matter in an amicable fashion, please be advised that we have all necessary legal remedies, including injunctive relief and damages, available to us to compel America DoorMax, Inc. to cease and desist all infringing acts if an amicable resolution cannot be reached. We sincerely hope that litigation is not necessary, but we shall resort to the courts without hesitation unless we receive adequate assurances that you have ceased and desisted from such infringing activities and comply with the following demands:

- (a) that you execute a declaration signed under penalties of perjury in which you represent that you will immediately cease and desist, as of the date thereof, from all manufacture, distribution, sale, commercial exploitation, and advertising with respect to such products, and further providing for entry of injunctive relief against your company in the event said representation is breached;
- (b) that you turn over for destruction all such infringing products and catalogs (or the means for making such catalogs) in your present possession;
- (c) that you provide us with all documentation evidencing purchases, sales, earnings, and other financial information pertaining to your commercial exploitation of the infringing product (including, but not limited to, invoices, purchase orders and sale slips); and
- (d) that you make restitution in an amount to be mutually agreed upon after we have had an opportunity to review the financial information you provide.

Unless we have received proof by **June 4, 2001**, that you have ceased and desisted from the offer for sale and sale of this infringing product, and will otherwise comply with the demands contained herein, we shall immediately seek an injunction and other appropriate relief in the United States District Court for the Northern District of Illinois, and hold you accountable for all recoverable damages as a results of your infringement

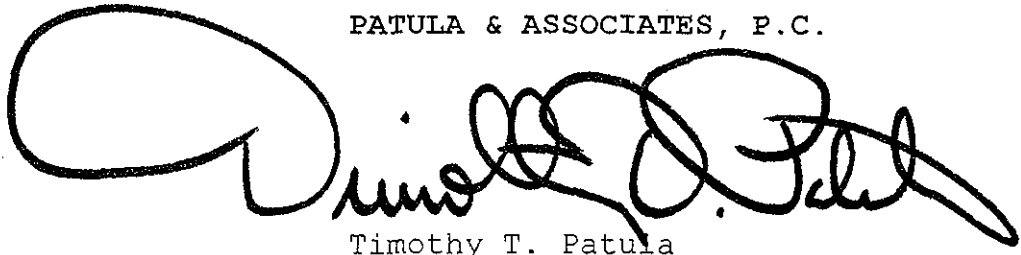
Mr. Huichen C. Tang
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Nothing contained herein should be construed as a waiver of any rights or remedies that our client may have, all of which are expressly reserved.

We look forward to hearing from you no later than **June 4, 2001**. Please do not underestimate the seriousness of this matter nor our client's resolve to immediately proceed to court if this issue is not resolved by **June 4, 2001**.

With sincere regards,

PATULA & ASSOCIATES, P.C.

A large, stylized handwritten signature in black ink, appearing to read 'Timothy T. Patula', is written over the printed name.

Timothy T. Patula

Enclosures

cc: DORMA GmbH & Co. ✓

89L02

LAW OFFICES

NILS H. LJUNGMAN & ASSOCIATES

Attorneys At Law

Patent and Trademark Attorneys

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VIA FIRST CLASS MAIL

American Doormax, Inc.
2457 Brakdoll Road
Naperville, IL 60565

May 4, 2001

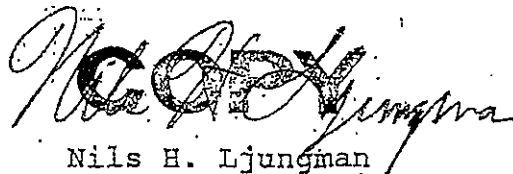
Re: U.S. Design Patent No. D429,992

Gentlemen:

We wish to draw your attention to the enclosed Design Patent No. D429,992. Your comments would be appreciated by May 25, 2001.

If you have any questions, please do not hesitate to contact our office.

Very truly yours,


Nils H. Ljungman

Encl.: U.S. Design Patent No. D429,992

NHL:slm/vwt

DOR-52-DES US 37sd/DOR069sd

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US00D429992S

United States Patent [19]
Ginzel et al.

[11] Patent Number: Des. 429,992
[45] Date of Patent: ** Aug. 29, 2000

[54] DOOR CLOSER

[75] Inventors: Olaf Ginzel, Dortmund; Rainer Fengler, Essen, both of Germany

[73] Assignee: DORMA GmbH + Co. KG, Ennepetal, Germany

[**] Term: 14 Years

[21] Appl. No.: 29/099,947

[22] Filed: Feb. 1, 1999

[51] LOC (7) Cl. 08-07

[52] U.S. Cl. D8/330

[58] Field of Search D8/330, 343, 346;
16/49, 71, 52, 59, 62

[56] References Cited

U.S. PATENT DOCUMENTS

D. 281,762	12/1985	Okazaki	D8/330
3,426,382	2/1969	Lasier et al.	.....	16/49
3,546,734	12/1970	Pollack et al.	.....	16/52
5,265,306	11/1993	Yu	.....	16/51

Primary Examiner—Susan J. Lucas

Assistant Examiner—Jennifer Rivard

Attorney, Agent, or Firm—Nils H. Ljungman & Associates

[57] CLAIM

The ornamental design for a door closer, as shown and described.

DESCRIPTION

FIG. 1 is a first end view of the embodiment of the present invention.

FIG. 2 is a second end view opposite to the first end view of FIG. 1 of the embodiment of the present invention.

FIG. 3 is a front view of the embodiment of the present invention.

FIG. 4 is a rear view of the embodiment of the present invention.

FIG. 5 is a top view of the embodiment of the present invention.

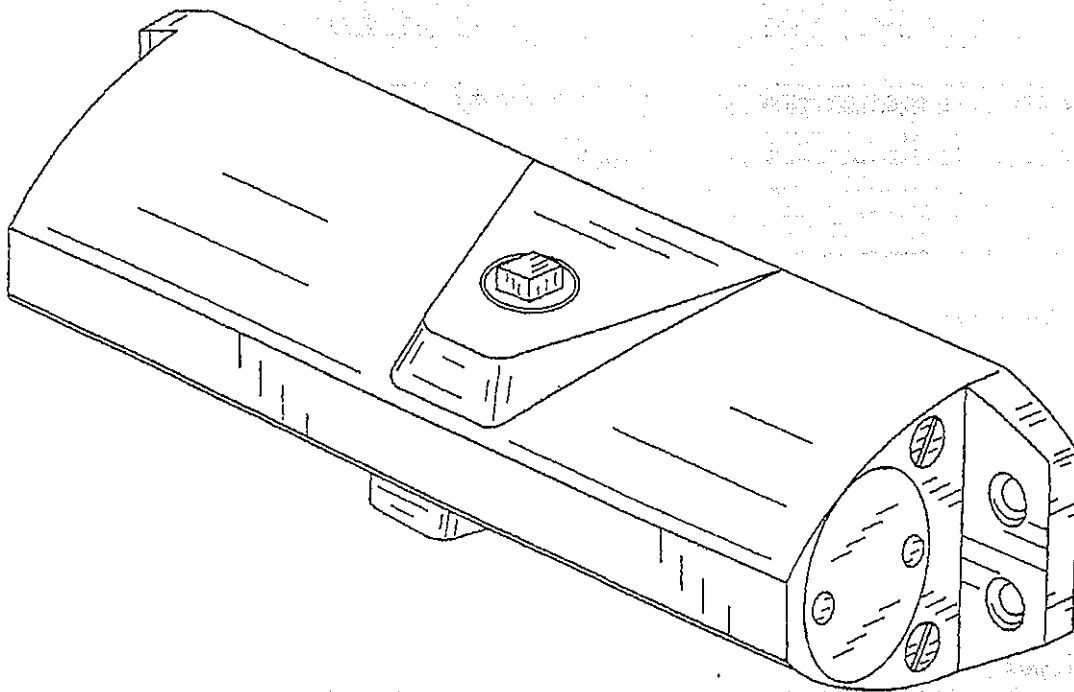
FIG. 6 is a bottom view of the embodiment of the present invention.

FIG. 7 is an isometric view of the embodiment of the present invention; and,

FIG. 8 is the front view of the door closer, with the door shown in broken lines, illustrating the environment in which the door closer may be used.

The broken lines are shown for illustrative purposes only and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



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U.S. Patent

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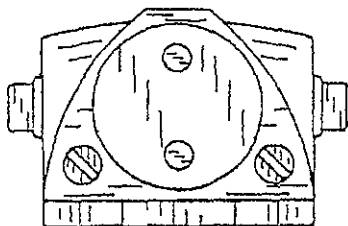


FIG. 1

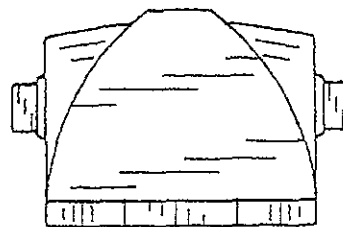


FIG. 2

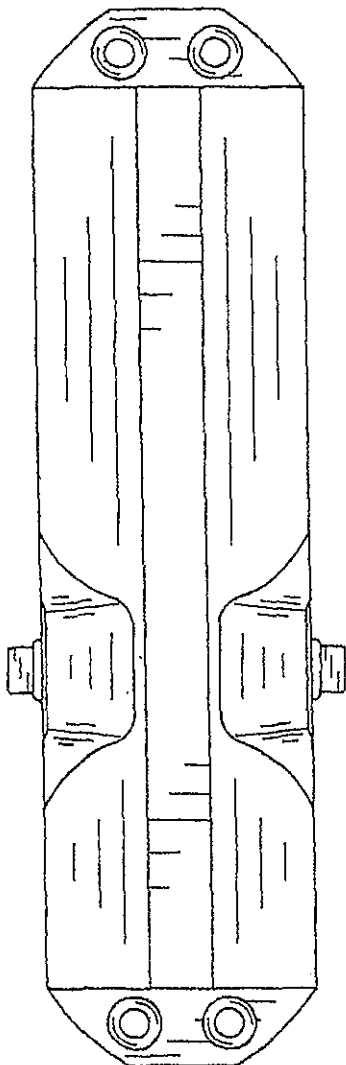


FIG. 3

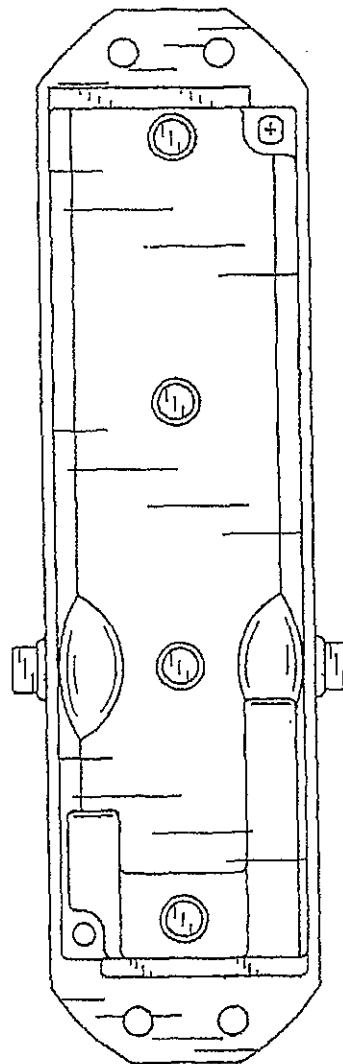


FIG. 4

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U.S. Patent

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Des. 429,992

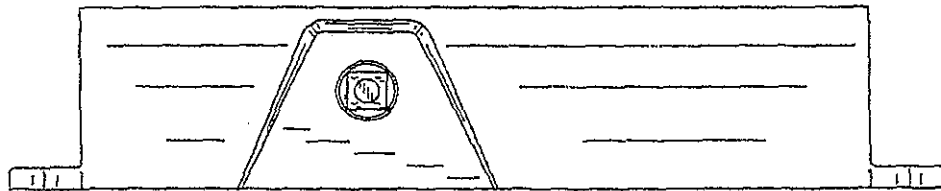


FIG. 5

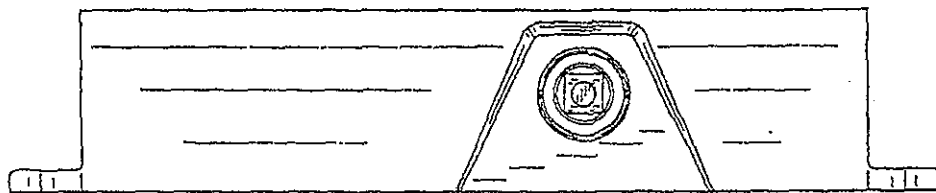


FIG. 6

10 07 3.

FILE COPY

AO 121 (6/90)

TO:	
COMMISSIONER OF PATENTS AND TRADEMARKS WASHINGTON, D.C. 20231	REPORT ON THE FILING OF DETERMINATION OF AN ACTION OR APPEAL REGARDING A COPYRIGHT

In compliance with the Act of July 19, 1952 (66 Stat. 814; 35 U.S.C. 290) you are hereby advised
that a court action has been filed on the following patent(s) in the U.S. District Court:

DOCKET NO. 02-CV-4763	DATE FILED 07/03/02	UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION
PLAINTIFF DORMA GMBH & CO. KG.		DEFENDANT AMERICAN DOORMAX, INC.
PATENT NO.	DATE OF PATENT	PATENTEE
1) DES. 429,992	08/29/00	Olaf Ginzael and Rainer Fengler

In the above-entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading			
PATENT NO.	DATE OF PATENT		PATENT	

In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION/JUDGMENT		
CLERK Michael W. Dobbins	(BY) DEPUTY CLERK	DATE

Copy 1 - Upon initiation of action, mail this copy to Commissioner Copy 3 - Upon termination of action, mail this copy to Commissioner
Copy 2 - Upon filing document adding patent(s), mail this copy to Commissioner Copy 4 - Case file copy