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J. A. PITSCH

2,183,892

ELECTRIC SWITCH

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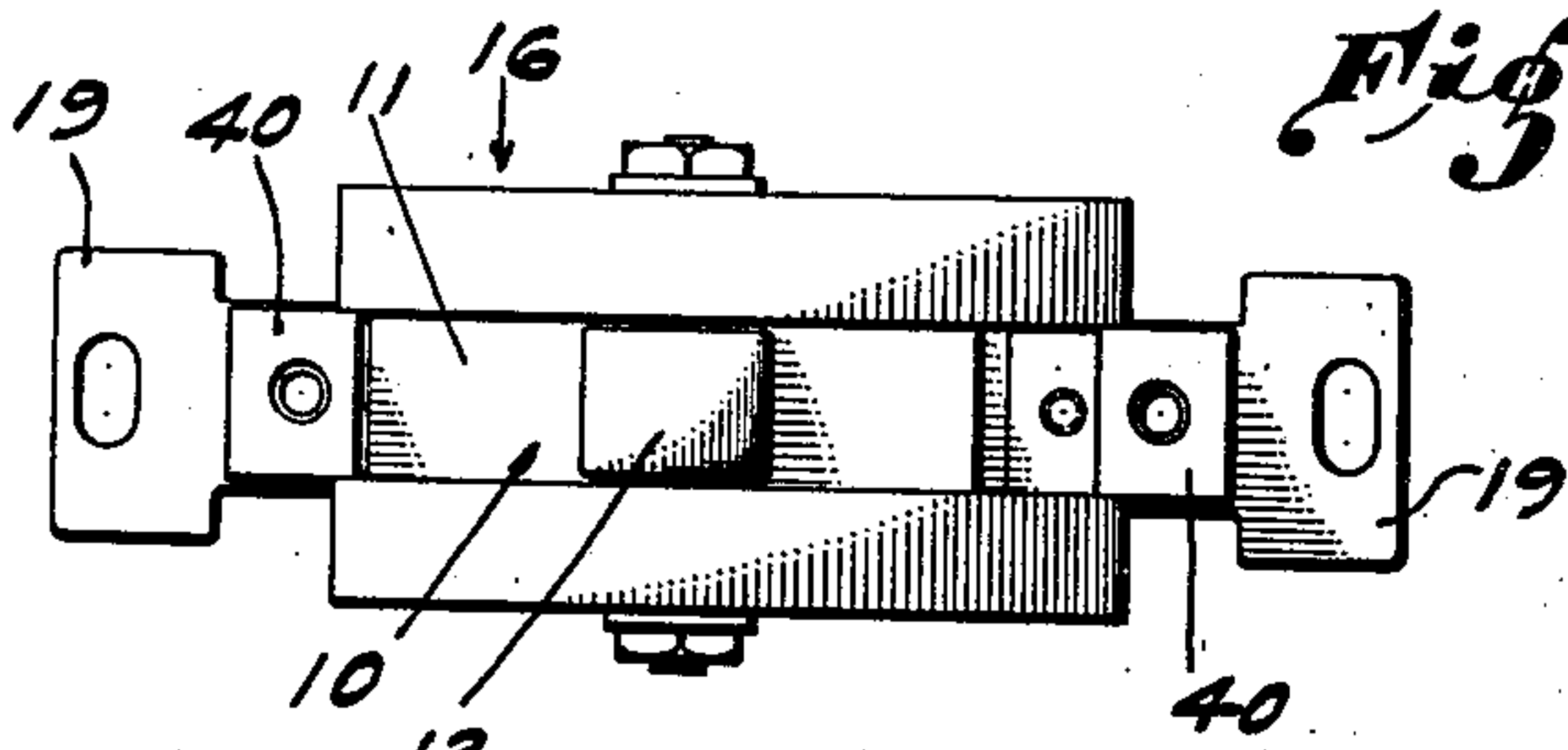


Fig. 1.

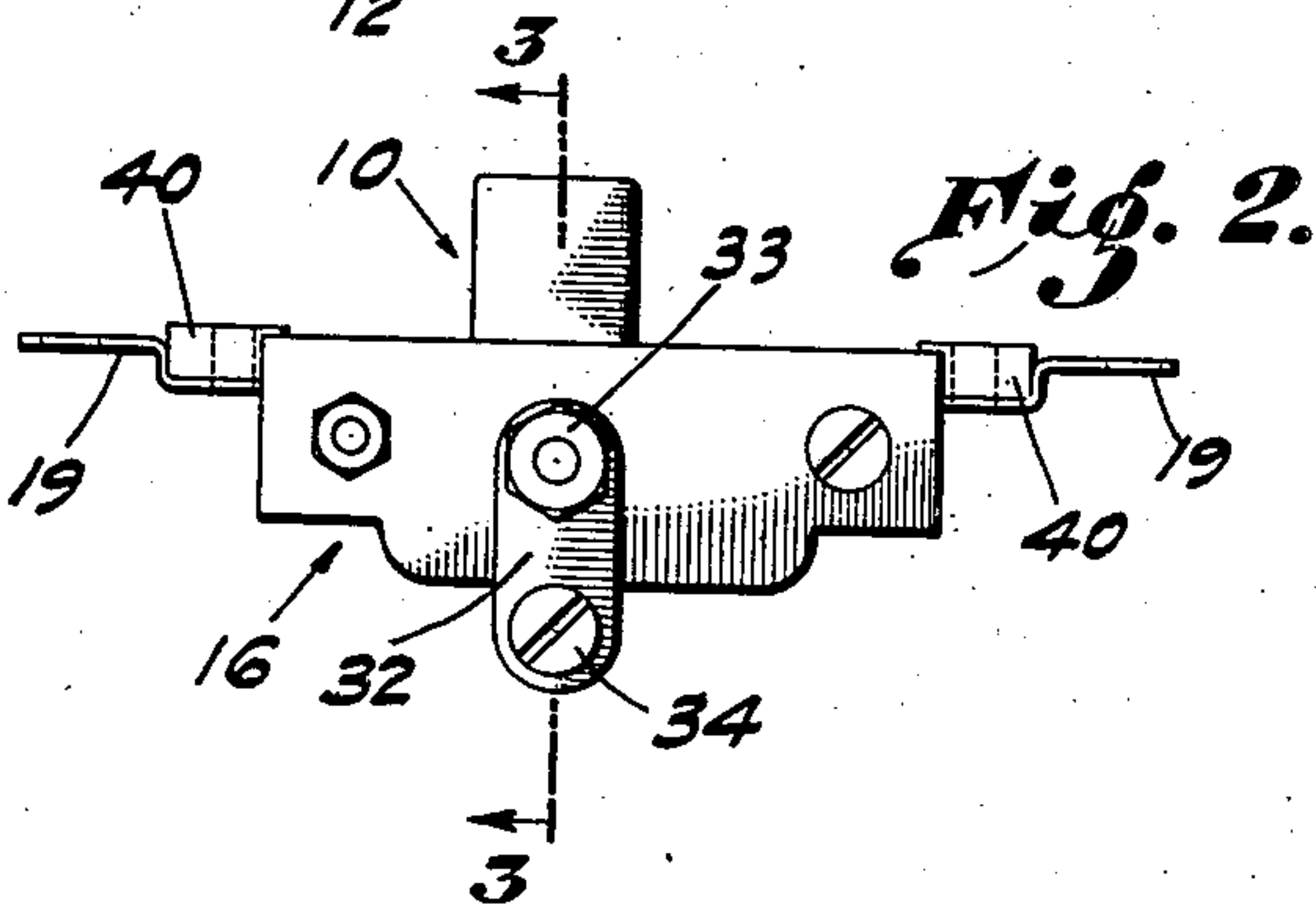


Fig. 2.

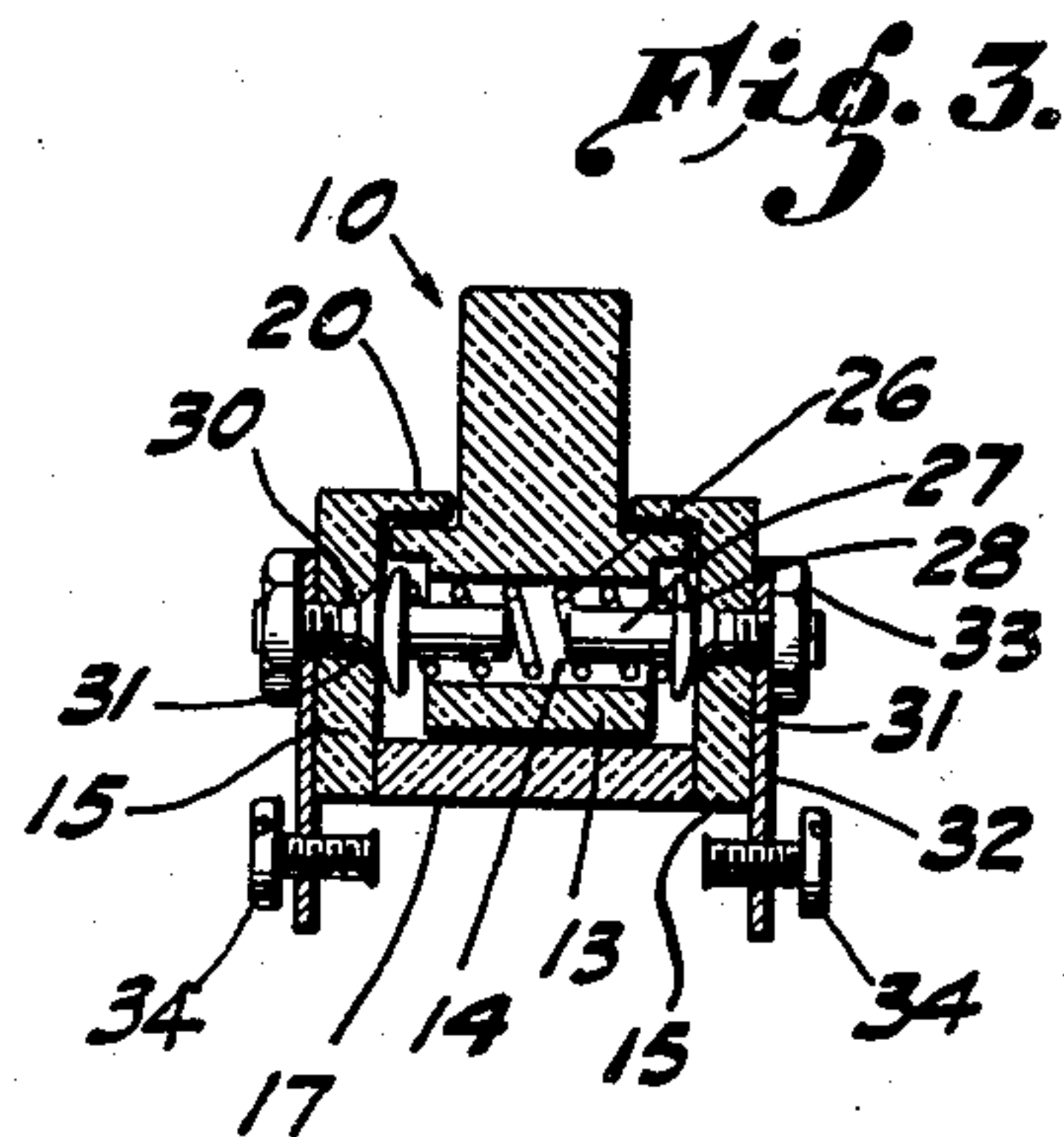


Fig. 3.

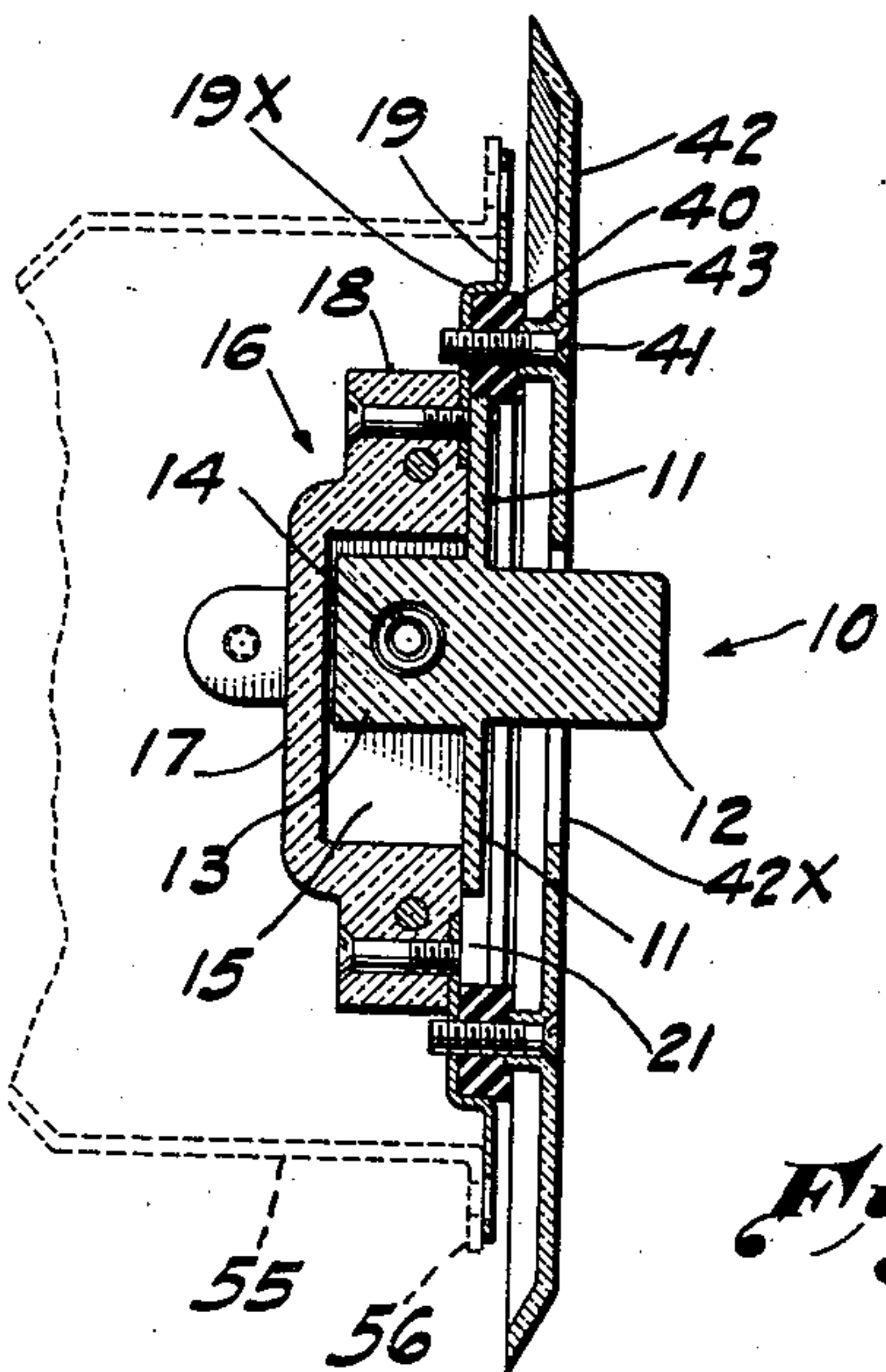


Fig. 4.

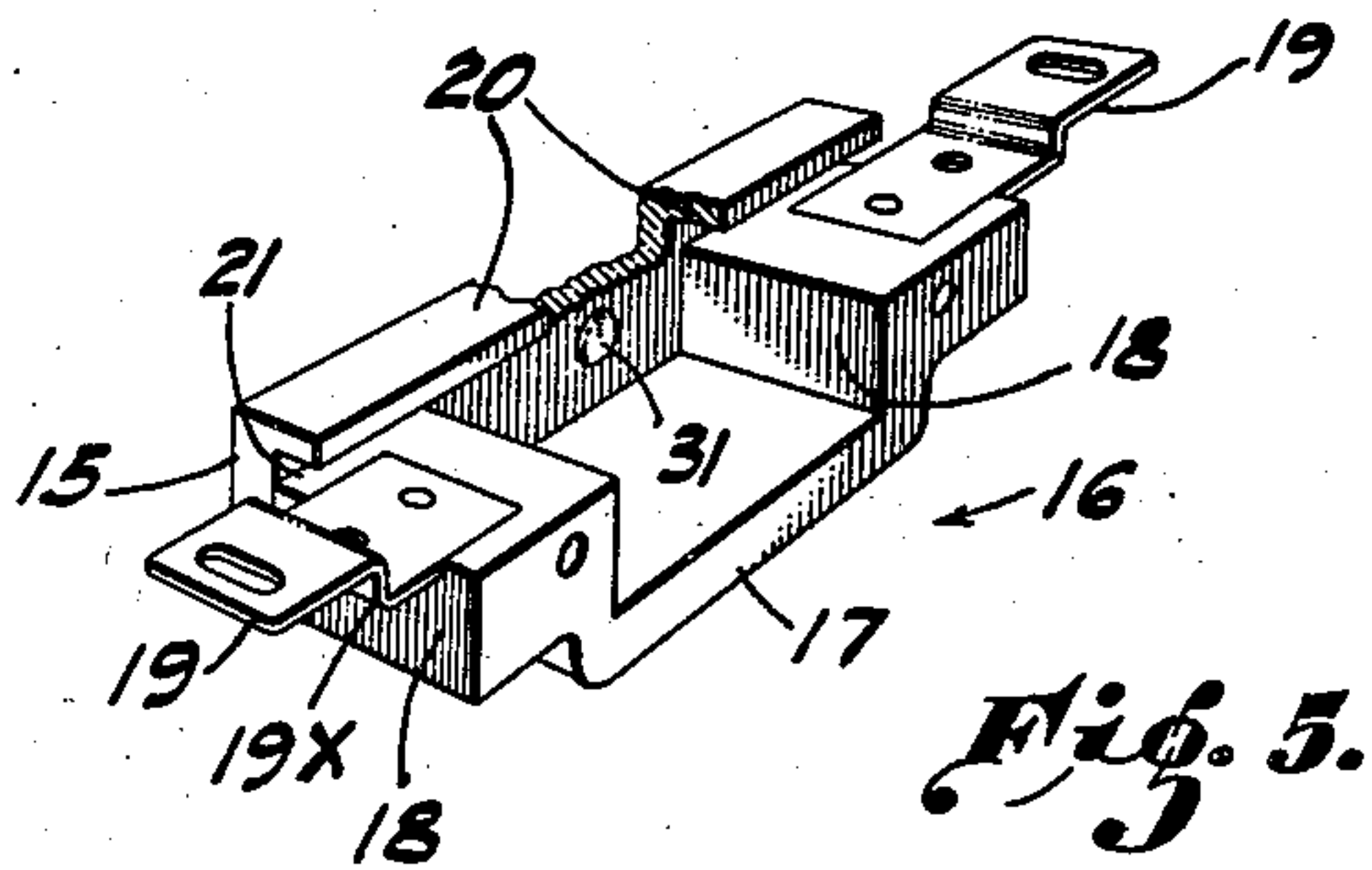


Fig. 5.

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UNITED STATES PATENT OFFICE

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ELECTRIC SWITCH

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3 Claims. (Cl. 200—163)

My invention relates to improvements in electric switches of the non-snap character.

An object of the invention is to produce an improvement upon the construction of the above class of switches whereby a more simple and efficient switch is obtained.

A further object of the invention is to provide an improved sliding or reciprocating switch.

Another object of the invention is to provide a novel sliding switch which is noiseless.

Another object of the invention is to provide a non-snap switch construction of a simplified character.

A still further object of the invention resides in the novel combination of parts cooperating together to produce the aforesaid results.

Still further objects, features, and advantages of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates what is at present deemed to be a preferred embodiment of the invention:

Fig. 1 is a face view of the construction of the switch showing the same in its assembled condition ready for insertion in a wall recess.

Fig. 2 is a side elevation thereof.

Fig. 3 is a cross section on line 3—3 of Fig. 2.

Fig. 4 is a longitudinal mid-section of the switch showing the same in its mounted position, a face plate thereover being included in the view, a portion of a wall recess lining member in an outwardly spaced relation to the casing of the switch being delineated in broken lines.

Fig. 5 is a perspective view of the insulating base showing one of the parallel side walls in position.

Referring in detail to the drawing, the manually movable switch member 10 is made principally of Bakelite or other nonconducting material. Said member comprises an elongated guide plate 11 from the mid-length portion of one face of which projects a button 12, and opposite to said button there projects from said plate a lower extension 13 having through it a passage 14 which extends transversely to the direction in which the switch member 10 reciprocates.

Said switch member 10 is guided in its movements by oppositely disposed, parallel side walls afforded by the side plates 15 of the casing structure 16. Said casing structure also includes a base member 17 which has raised end portions 18 that carry the mounting extensions 19, which are each forwardly offset at 19x. The side plates 15 have inwardly directed top flanges 20 which cooperate with the other portions of the casing structure to form a partially inclosed elongated

chamber within which the manually movable switch member 10 can be reciprocated.

The switch member 10 may be regarded as having a body portion 13 furnished at its top end with oppositely directed, horizontally extending wings 11, opposite edge portions of which travel in guiding grooves 21, said grooves intervening between the under sides of the flanges 20 and the raised end portions 18 of the supporting member.

Within the passage 14 through the movable switch member is loosely fitted a spiral compression spring 26, each end portion of which receives a pin 27 having, outside the spring, a plano-convex contact making head 28, the flat side of which is engaged by said spring and the convex side of which is directed outwardly.

Each side plate 15 has through it a hole wherein is secured an electrode screw 30 furnished with a head 31 which is countersunk flush, or nearly so, with the inner face of the plate, and which is electrically contactable by the head 28 of the adjacent contact pin 27 of the movable switch member. The outer portion of said screw 30 passes through a conductor plate 32 and has screwed on to it a nut 33. Said plate 32 is shown carrying a binding screw 34.

Abutting against the angle at the inner side of each offset 19x of the extension plate 19, is an elastic bumper 40 which is positioned to be engaged by the outer end of the adjacent wing 11 of the movable switch member when said member reaches the limit of its movement toward that end of the casing, thus to prevent any impact occurring that would make a noise. Through these bumpers 40 pass the screws 41 whereby the face plate 42 is secured in place, said face plate having inwardly directed apertured bosses 43 through which said screws pass. Hence, these elastic (preferably rubber) bumpers not only deaden the sound incident to the operation of the switch, but they react against the pressure against them of said bosses 43 and so keep the screws under a tension which safeguards them against loosening.

At one side of the button 12, the plate 10 of the movable switch member is painted white, and at the other side thereof, black, this color indication appearing through the opening 42x to indicate respectively the "on" and "off" position.

In Fig. 4, a wall recess member 55 is indicated in broken lines, having apertured front flanges 56. These flanges cooperate with the mounting extensions 19 of the casing of the switch to re-

ceive the usual screws for attaching the switch to a wall.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the subject matter claimed.

What is claimed is:

1. In an electric switch, a casing structure comprising an elongated chamber having spaced apart substantially parallel side walls afforded by side plates of the casing structure and a base member having raised end portions, mounting extensions fastened to said raised end portions, said side plates having inwardly directed top flanges to partially enclose said chamber, said flanges together with said raised end portions forming guiding grooves, said grooves intervening between the under sides of said flanges and the raised end portions of said base member, an electrode located in each side wall of said chamber, a face plate having through it a longitudinally extending opening, means to fasten said face plate to said mounting extensions with its said opening overlying said chamber, a switch member, said member comprising an elongated guide plate from the mid-length portion of one face of which projects a button and opposite to said button there projects from said plate an extension having through it a passage which extends transversely to the length of said chamber when said switch member is mounted therein, a compression coil spring occupying said passage and having its opposite ends directed toward the side walls of said chamber, and a contact carried by each end portion of said spring, said switch member being mounted to reciprocate longitudinally within said chamber with said button extending through the opening in said face plate and with opposite edge portions of said guide plate slidingly occupying said guiding grooves, said contacts being positioned to move into and out of engagement with said terminals when said switch member is reciprocated in said chamber, said button reciprocating in a straight line during the operation of the switch.

2. The subject matter of claim 1 and, said contacts comprising contact pins having shank portions extending into the end portions of said spring, said pins having heads of greater diam-

eter than said spring located outside said passage positioned to make and break connection with said electrodes.

3. In an electric switch, a casing structure comprising an elongated chamber having spaced apart substantially parallel side walls afforded by side plates of the casing structure and a base member having raised end portions, offset mounting extensions fastened to said raised end portions, said side plates having inwardly directed top flanges to partially enclose said chamber, said flanges together with said raised end portions forming guiding grooves, said grooves intervening between the under sides of said flanges and the raised end portions of said base member, an electrode located in each side wall of said chamber, a face plate having through it a longitudinally extending opening, means to fasten said face plate to said mounting extensions with its said opening overlying said chamber, a switch member, said member comprising an elongated guide plate from the mid-length portion of one face of which projects a button and opposite to said button there projects from said plate an extension having through it a passage which extends transversely to the length of said chamber when said switch member is mounted therein, a compression coil spring occupying said passage and having its opposite ends directed toward the side walls of said chamber, and a contact carried by each end portion of said spring, said switch member being mounted to reciprocate longitudinally within said chamber with said button extending through the opening in said face plate and with opposite edge portions of said guide plate slidingly occupying said guiding grooves, said contacts being positioned to move into and out of engagement with said terminals when said switch member is reciprocated in said chamber, said button reciprocating in a straight line during the operation of the switch, and two elastic bumpers, one of said bumpers occupying the offset in one of said mounting extensions to limit the sliding movement of said switch member in one direction, and the other bumper occupying the offset in the other of said mounting extensions to limit the sliding movement of said switch member in the other direction.

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