

W. K. HENRY.

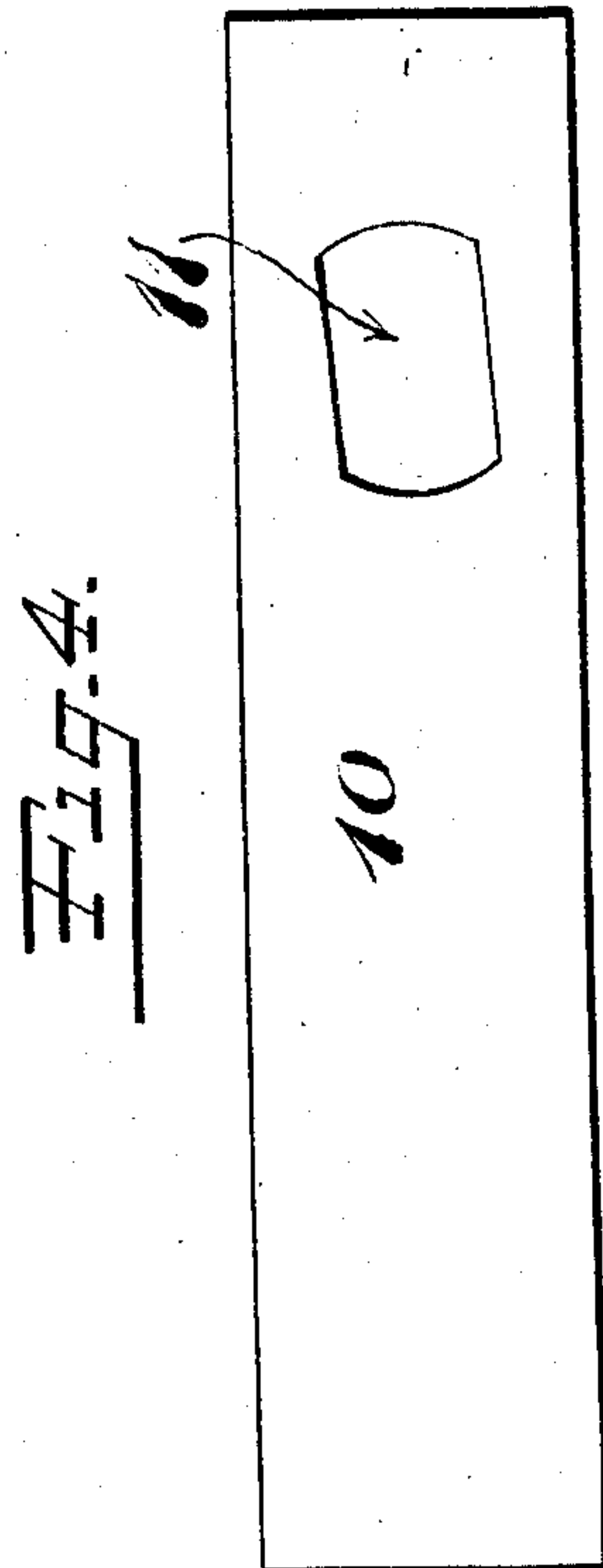
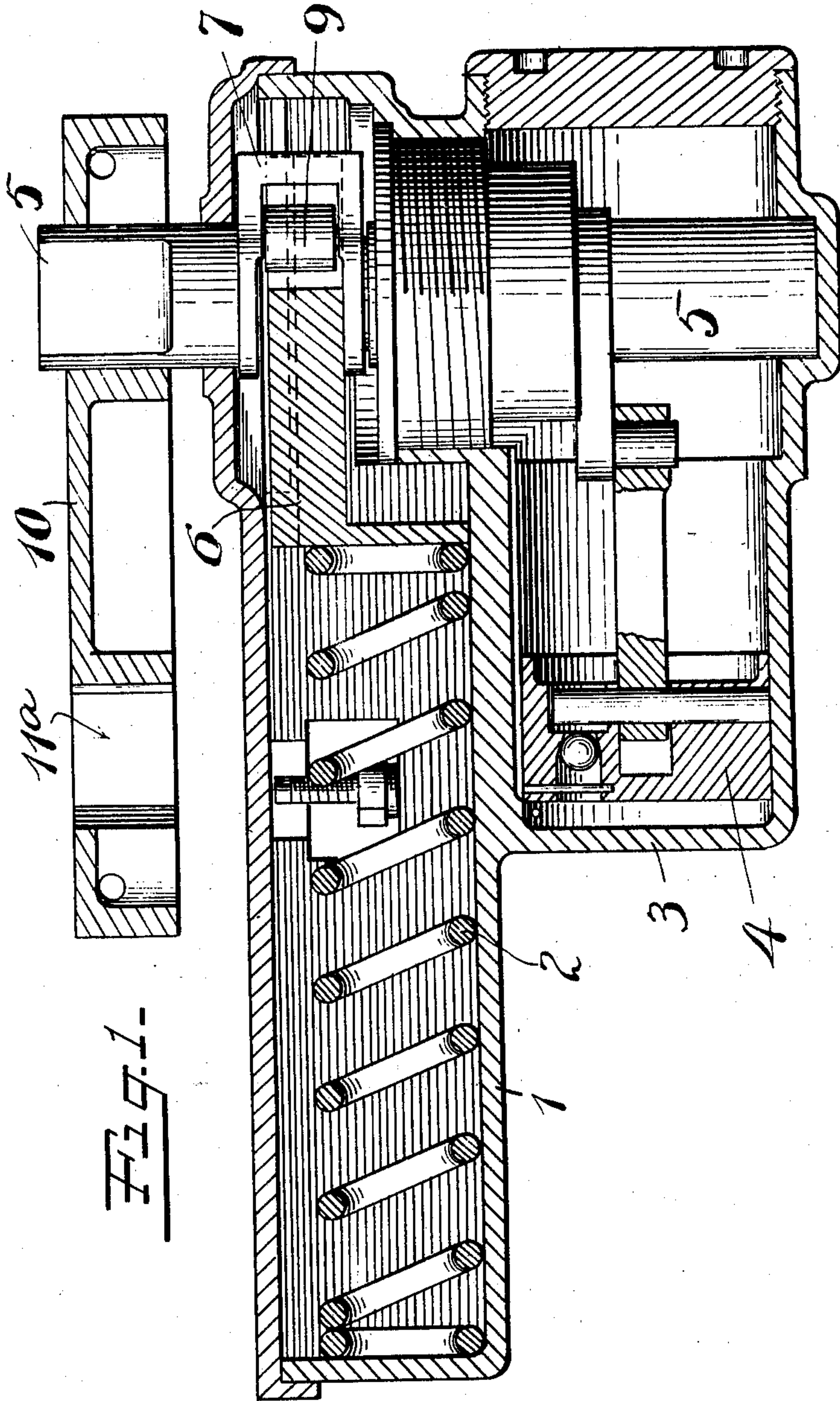
DOOR CLOSER.

APPLICATION FILED MAY 18, 1910.

967,770.

Patented Aug. 16, 1910

2 SHEETS—SHEET 1.



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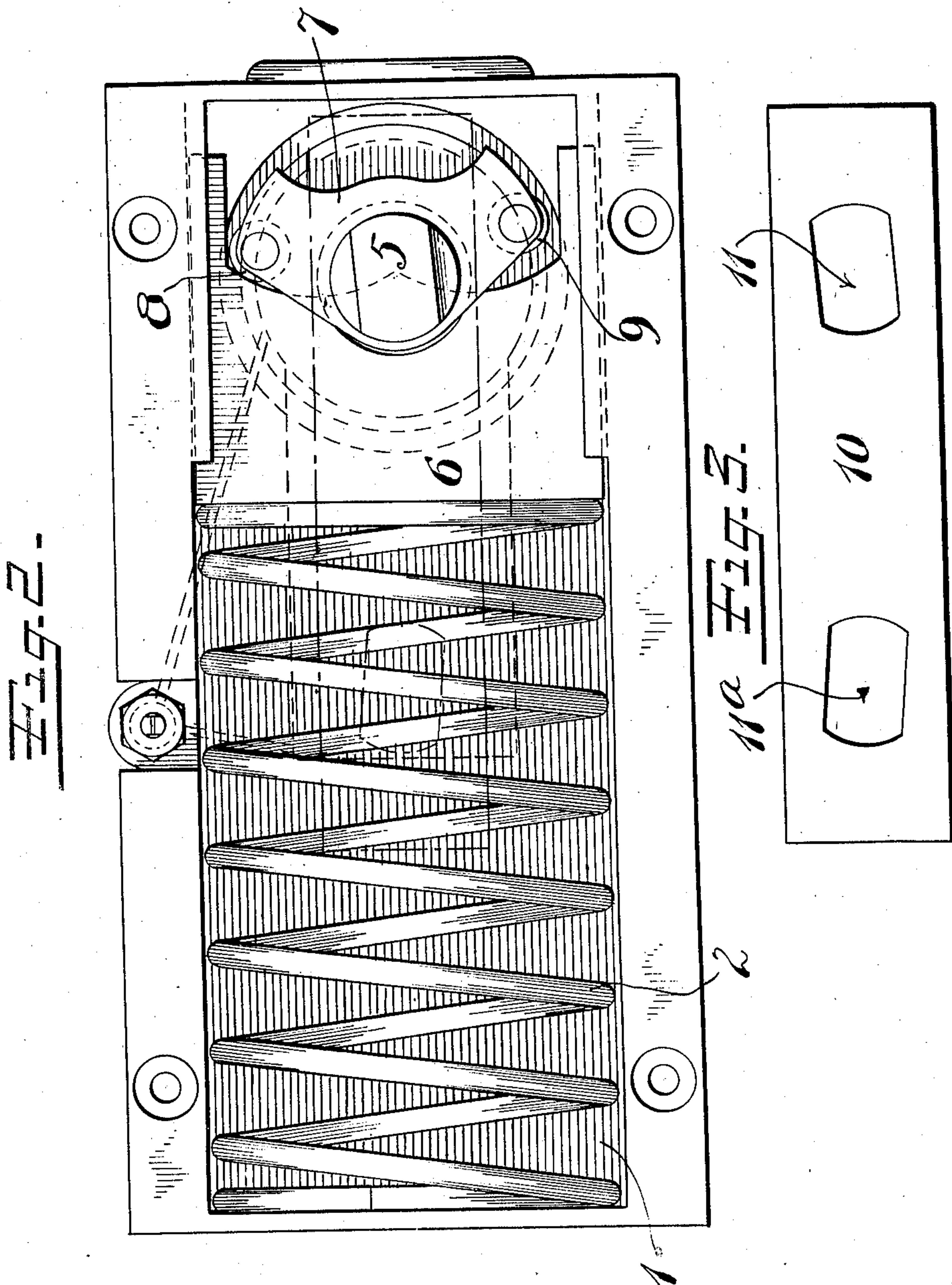
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2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

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DOOR-CLOSER.

967,770.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM K. HENRY, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Door-Closers, of which the following is a full, clear, and exact description.

My invention relates to improvements in door closers, particularly of the so-called "sill" type, that is, a closer arranged to be located in the door-sill, the spindle of the closer operating as one of the hinge members for the door.

The invention is essentially an improvement upon certain features of construction set forth in my former Patent No. 833,387 and is useful when such a type of closer is employed upon a single swing door as distinguished from a double swing door.

In a single swing door when the door is closed, it rests at one edge against a rabbet or stop bead on the door casing and to be properly closed it should press against the same at least slightly, to prevent being swung open by drafts. In the construction set forth in my former patent the closer spring will return the door to a position directly under the casing but is not so constructed as to hold the door against a stop bead in the manner above described.

The purpose of the present invention is therefore to accomplish the above end.

In the accompanying drawings,—Figure 1 is a vertical sectional elevation of a combined sill closer and check for a door, the same being approximately full size; Fig. 2 is a plan view with the cover removed; Fig. 3 is a plan view of a detail; Fig. 4 is a modification of the detail shown in Fig. 3.

It will be unnecessary for me to describe at length the various features of construction constituting the check and closer since in the main all the parts excepting one correspond to the details set forth and fully described in my former patent above referred to. I will therefore only briefly refer to the same sufficiently to permit that feature of improvement which constitutes the present invention to be fully comprehended.

1 represents a housing for a closer spring 2.

3 represents a housing for the checking element, which, in this instance, is a piston

4. The piston is suitably connected to the rotatable spindle 5, the upper end of which projects up through the housing 1 for the spring so that its upper end will constitute one of the hinge members for the door.

6 is a block pressed forward by the spring 2. That part of the spindle 5 in front of the block 6 is provided with an offset portion 7 carrying two rollers or bearings 8—9, toward and against which the block 6 moves and may engage, the effect of the block 6 pressing against one or the other of said bearings 8—9 is to return the door (not shown) to its closed position. The door is provided at its under side with a shoe 10 having a suitably shaped cavity therein to receive the upper end of the spindle 5. In the particular form shown, the spindle 5 is slabbed off on opposite sides, the flat surfaces, formed by slabbing off said spindle, being parallel with the line of movement of the block 6. The recess 11 in the shoe 10 is of an outline corresponding to the outline of the upper end of the spindle and, as shown in Fig. 3, the shoe 10 preferably has two recesses of said outline, said recesses being indicated respectively at 11—11^a. It will be observed that the side walls of these recesses 11—11^a, adapted to engage the flat side walls of the spindle, are pitched at an angle relatively to the axis of the shoe.

Assuming the shoe 10 were placed upon the lower edge of the door in line therewith, it is apparent that the effect of the closer spring 2 would be to swing the door somewhat past the center since the action of the spring would tend to bring the flattened sides of the spindle 5 into line with the axis of reciprocation of the block 6. If a stop bead or rabbet were provided upon the door casing to stop the door before it has swung past this point, it is obvious that the pressure of the spring would be exerted in a direction to hold the door tightly against said stop, in other words, the parts would assume the position shown in Fig. 2, the shoe pressing only against the bearing 8 on that side of the spindle to cause the spring pressure to be applied constantly in holding the door closed against the stop bead. By this very simple expedient, viz., so relating the angle of connection of the shoe 10 to the spindle 5 that when the door is closed the shoe will bear against only one of the bear-

ings 8—9, I may successfully employ my patented sill check in connection with a single swing door. I have provided the second recess 11^a, which is arranged in a plane oblique to the plane of the recess 11, so that said shoe may be reversible end for end to apply the mechanism to a right or left hand door as may be desired.

In Fig. 4 I have shown the shoe 10 provided with only a single recess 11. To make this shoe reversible merely requires the turning of said shoe upside down instead of end for end. I regard it preferable to change the angle of the recess 11 rather than change the angle of the flat sides of the spindle 5, since the same results can be more readily and cheaply attained by modifying the shoe 10. I appreciate that there are various ways that the angle of the shoe relatively to the spindle may be secured, and it should therefore be understood that in this present instance I have attempted to illustrate only the preferred construction.

It is obvious that closer devices such as described may be mounted either in the tread or door sill or in the overhead part of the casing. I have shown the lever as connected to the top of the spindle, and I regard said connection as on "top" whether said mechanism is placed in the sill or inverted and placed in the overhead part of the casing.

What I claim is:

1. In a sill check, a spindle rotatable in either direction away from a neutral plane intersecting the axis of the spindle, means operating to return said spindle toward said neutral plane from either direction and means for securing a door on top of said spindle at an angle to said neutral plane said means comprising a shoe arranged to be directly secured to a door and to said spindle.
2. In a sill check, a spindle rotatable in either direction away from a neutral plane, means operating to return said spindle toward said neutral plane, means for securing a door on top of said spindle at an angle to said neutral plane, said means comprising a shoe arranged to be secured to the edge of a door, said shoe having a recess arranged to receive said spindle at said angle.
3. In a sill check, a spindle rotatable in either direction away from a neutral plane, means operating to return said spindle toward said neutral plane, and a one-piece shoe rigidly securing a door on top of said spindle at an angle to said neutral plane, said shoe being reversible.

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Witnesses:

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