

No. 663,571.

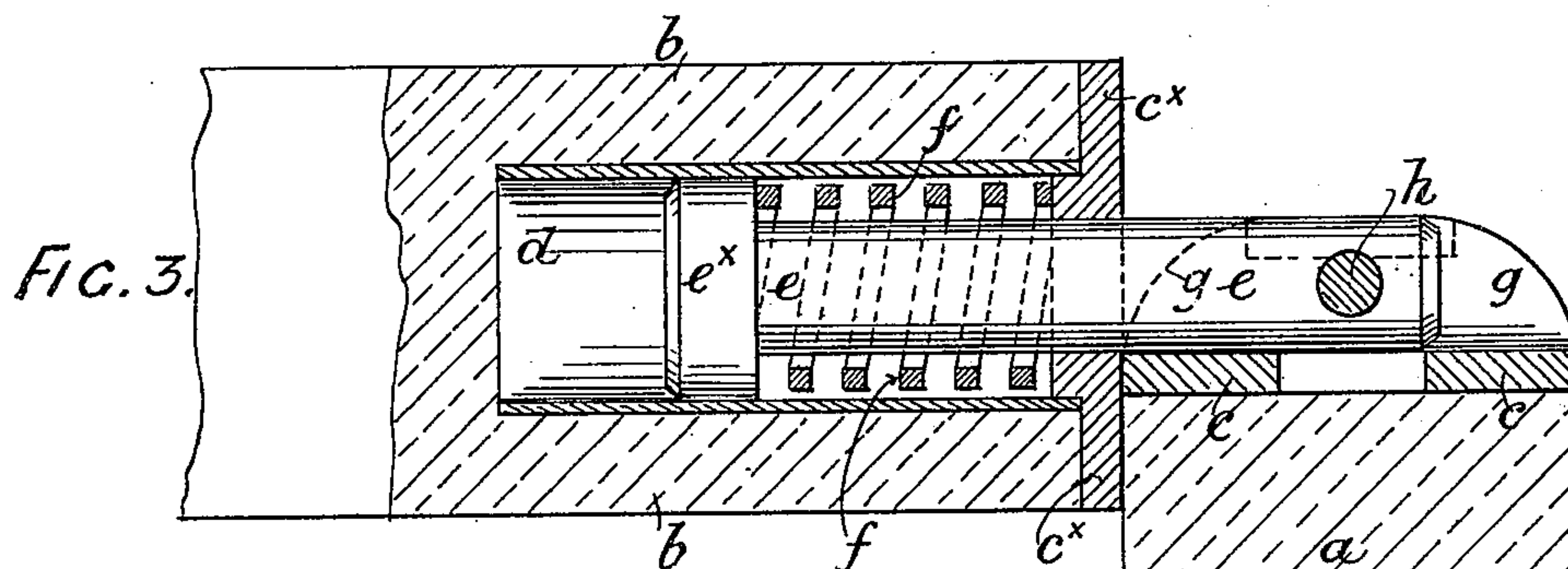
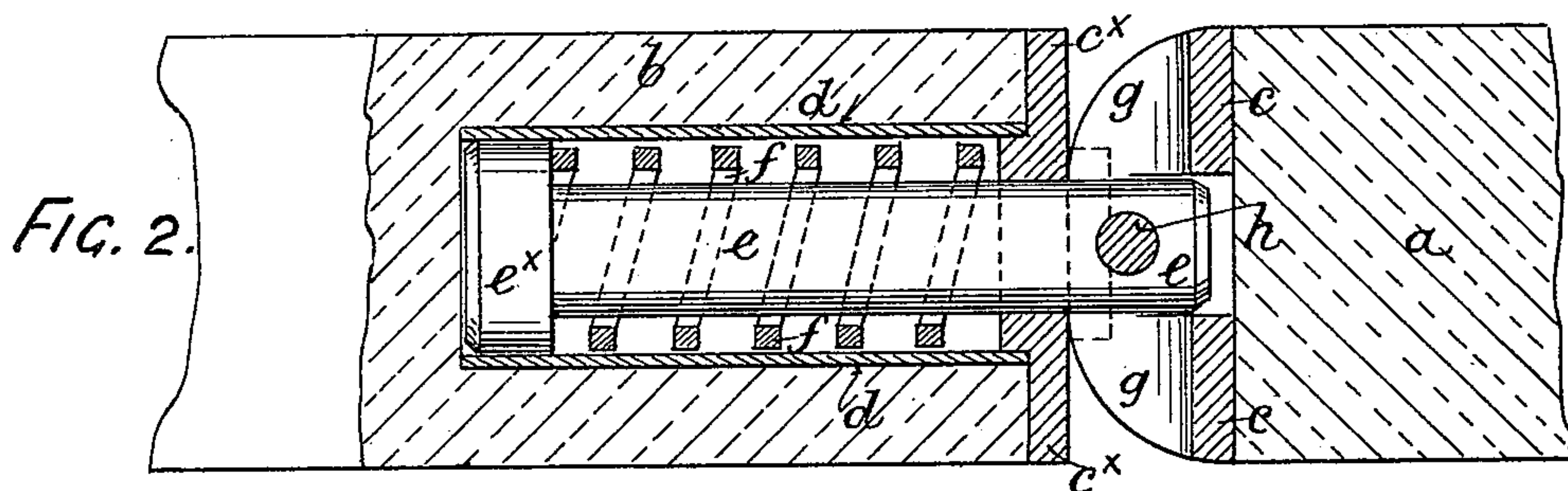
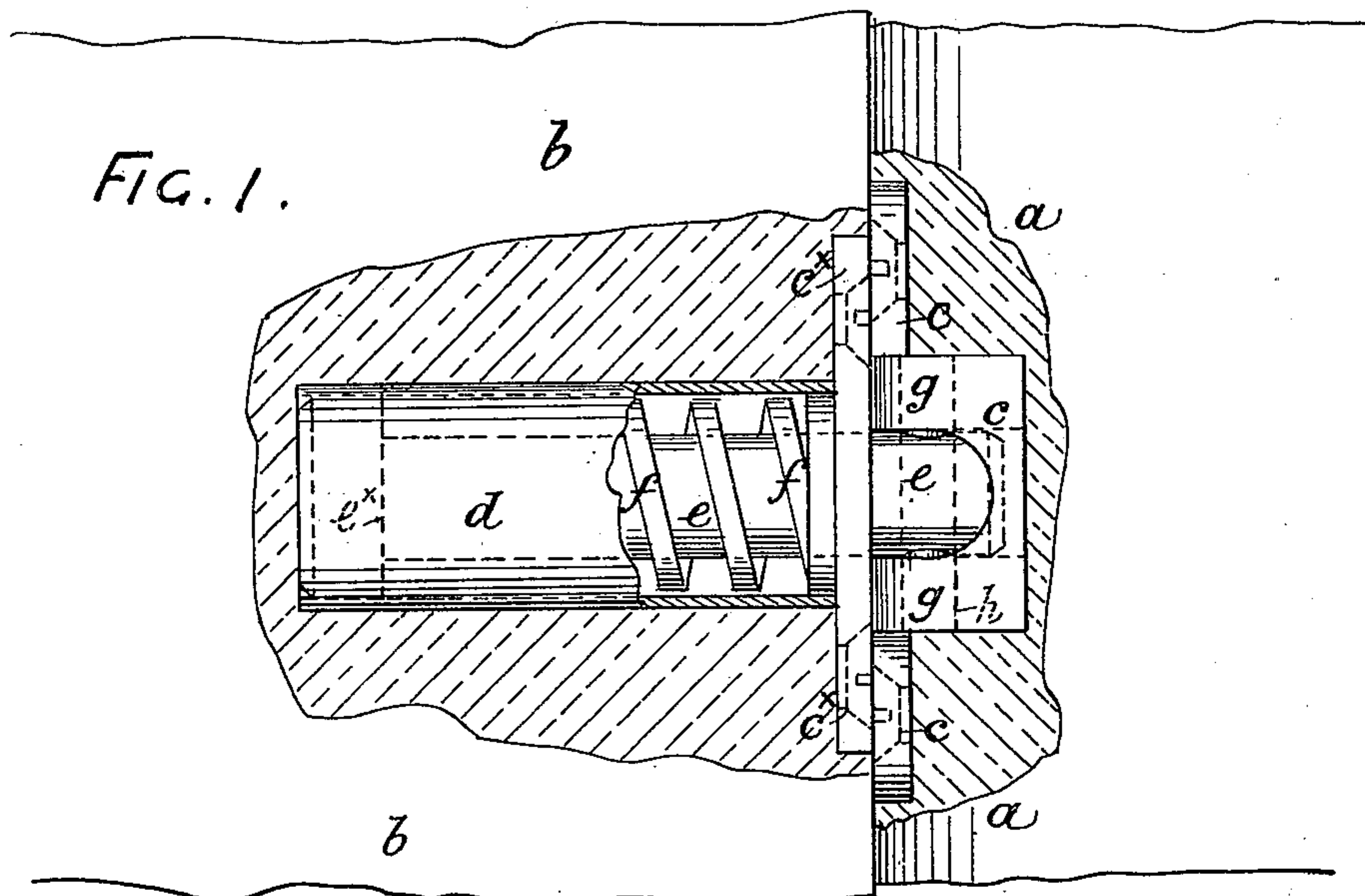
Patented Dec. 11, 1900.

H. HAWGOOD.

HINGE.

(Application filed Jan. 18, 1900.)

(No Model.)



WITNESSES:
R. W. Wright.
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UNITED STATES PATENT OFFICE.

HENRY HAWGOOD, OF ECCLES, ENGLAND.

HINGE.

SPECIFICATION forming part of Letters Patent No. 663,571, dated December 11, 1900.

Application filed January 16, 1900. Serial No. 1,643. (No model.)

To all whom it may concern:

Be it known that I, HENRY HAWGOOD, a subject of the Queen of Great Britain, residing at Eccles, in the county of Lancaster, England, have invented new and useful Improvements in Hinges, of which the following is a specification.

This invention relates to the construction of hinges used for swing-doors and the like; and the object of the invention is so to combine a coiled spring or springs with the hinge that the door will automatically close itself or will be held open by the said spring or springs when opened to a right angle.

The invention will be readily understood on reference to the annexed sheet of drawings and the following explanation thereof.

Figure 1 is a vertical section of a portion of a door and door-post, showing the application of my improved spring-hinge thereto. Fig. 2 is a horizontal section of the same, showing the door in the closed position; and Fig. 3 is a similar view showing the action of the spring-hinge when the door is opened to a right angle.

In the figures, *a* is part of the door, and *b* part of the door-post. A plate of metal *c* is affixed by screws to the door, and another plate *c*^x is similarly attached to the door-post. The plate *c*^x has attached to it or cast or formed in one piece therewith a socket *d*, which is sunk into the post *b* and in which fits the head or piston *e*^x of a bolt *e*, which passes out through the center of the plate *c*^x, and inside the socket *d* is placed a spring *f*, which is coiled around the bolt *e* and acts between the head or piston *e*^x of the bolt and the inside of the plate *c*^x, so as to have a strong tendency to keep the head *e*^x of the bolt in the position shown in Figs. 1 and 2. The other plate *c* is made with a horizontal groove or bend across the center (see Fig. 1) between two curved or quadrant-shaped lugs *g*, through which lugs and through a hole or eye in the bolt *e* is passed a pin *h* in a perpendicular position, which can easily be effected when the bolt *e* is drawn out a short distance from its spring-socket, and thus the two plates *c* and *c*^x become securely connected together. The bolt

e passes through the spiral spring *f*, as before mentioned, and this spring works between the back of the plate *c*^x and the head or piston *e*^x of the bolt inside the socket *d*, and so long as the door *a* is closed the spring *f* is fully expanded and keeps the door *a* in this position, as shown at Fig. 2; but as soon as the door *a* is pulled or pushed open in either direction the curved lugs *g*, acting against the plate *c*^x, will cause the bolt *e* to be drawn out of the socket *d*, as shown at Fig. 3, the piston or head *e*^x compressing the spiral spring *f*, and if the door *a* is not thrown absolutely open to a right angle as soon as it is released the reaction of this spring will cause the door to be closed again, and the door will remain stationary when closed; but if the door *a* should be opened either way to a right angle, as shown at Fig. 3, then the reaction of the spring *f* will keep it in the open position. That portion of the bolt *e* which projects from the socket lies flush in the groove or bend of the plate *c* above mentioned, the two plates *c* and *c*^x being at right angles to each other, as shown.

The principal advantages of this improved hinge are that it forms an efficient spring-hinge for hanging doors, combined with simplicity and economy of manufacture, it can be used on any door, and it will keep the door stationary in three different positions—viz., either closed or open outward or inward at right angles.

It will be evident that in some cases only the upper hinge of the door may be fitted with the improved spring arrangement and that for heavy doors two or more springs may be applied in a similar manner instead of one only, as shown on the drawings.

I claim as my invention—

In a spring-hinge for doors, the combination of the plate secured to the door and having curved or quadrant-shaped lugs, with a straight-faced plate on the door-frame against which the said lugs bear, a bolt passing through the plate on the door-frame and having a head located within a recess within the door-frame, a spring acting upon said head and normally pressing the same away from

the plate on the door-frame and a pin passing through the curved or quadrant-shaped lugs and the bolt, thereby pivotally attaching said bolt to the lugs, whereby the curved lugs are
5 maintained in contact with the straight-faced plate on the door-frame, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY HAWGOOD.

Witnesses:

THOMAS PRESCOTT,
JNO. HUGHES.