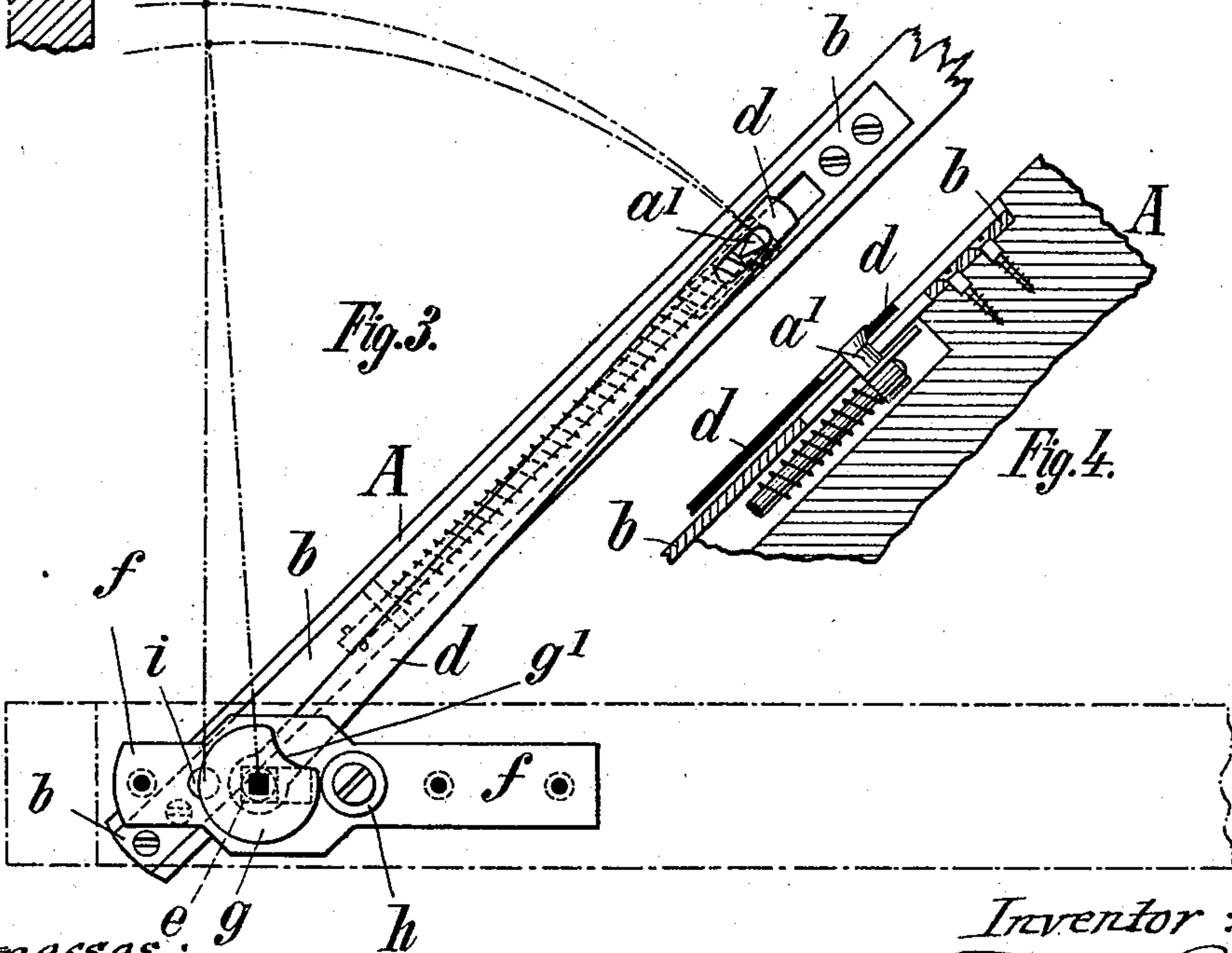
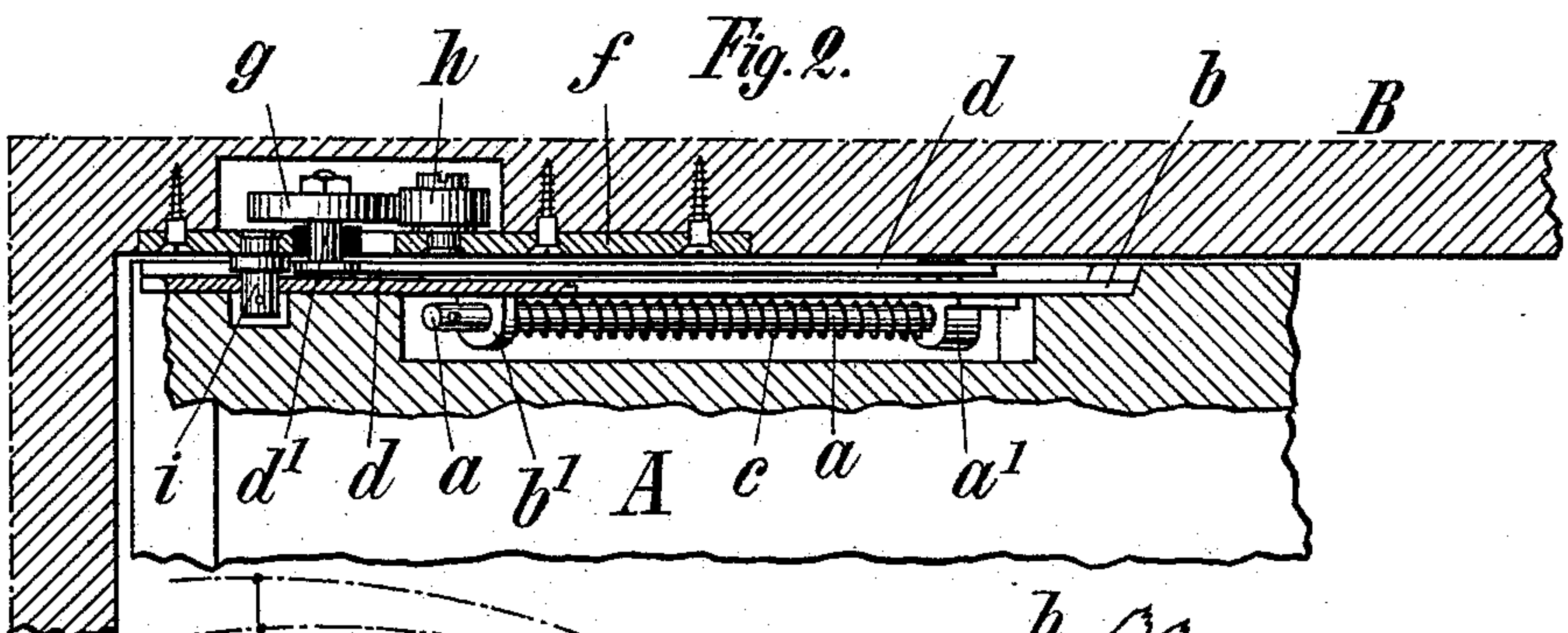
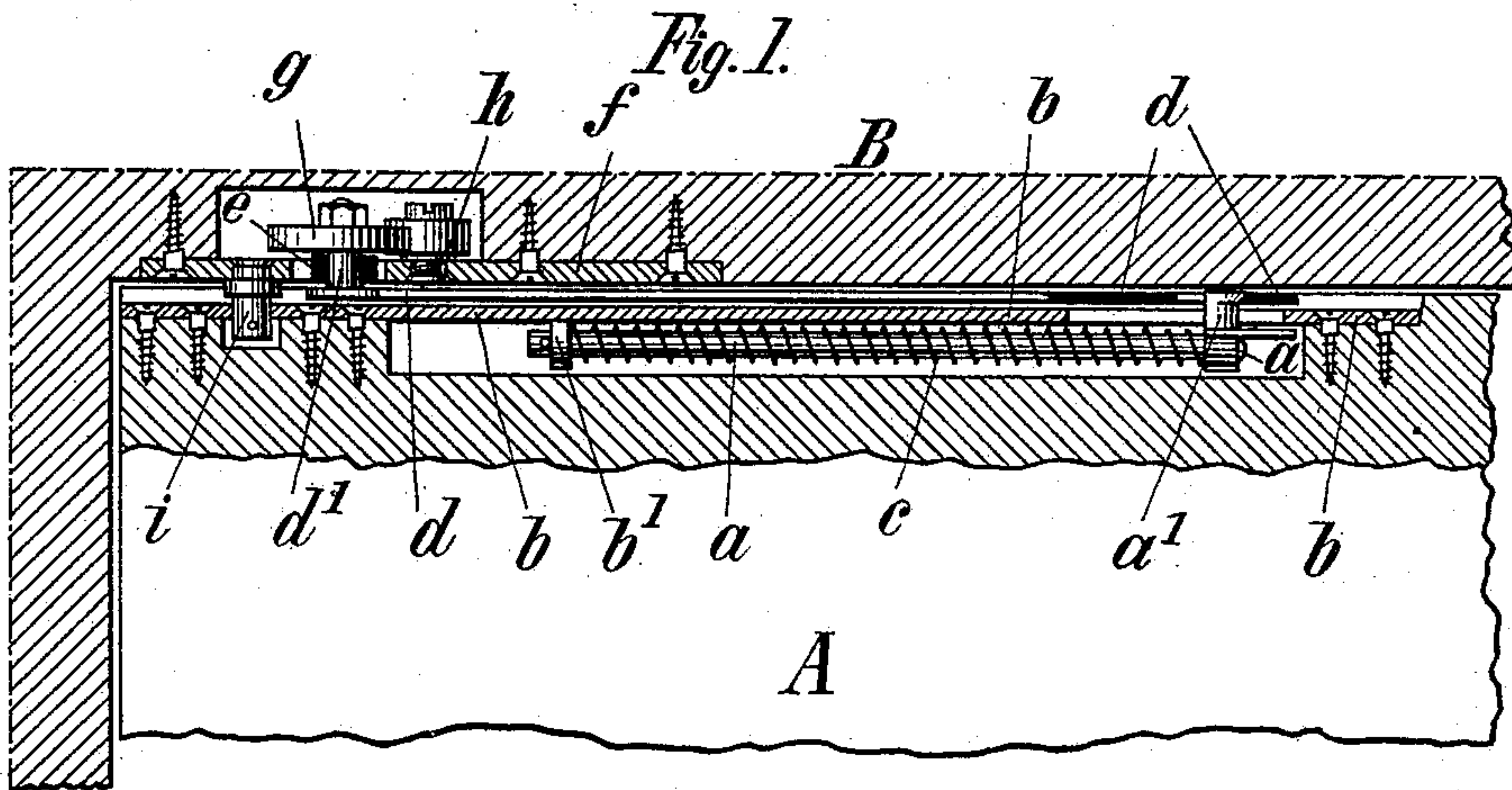


(No Model.)

F. R. BAUER.
DOOR CLOSER.

No. 529,101.

Patented Nov. 13, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

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DOOR-CLOSER.

SPECIFICATION forming part of Letters Patent No. 529,101, dated November 13, 1894.

Application filed February 19, 1894. Serial No. 500,742. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH RICHARD BAUER, a subject of the German Emperor, residing in the city of New York, county and State of New York, have invented certain new and useful Improvements in Apparatus for Closing Doors, of which the following is a specification.

My invention relates to an automatic apparatus for closing doors, which comprises a spring-actuated push-rod arranged in the upper edge of the door and which, on the latter being opened, is moved back in the direction of the door edge by means of a draw-rod adapted to turn on the door case. The operation of the draw-rod, that is to say the back movement of the same relatively to the door which opens, takes place in consequence of the eccentric position of the pivot of the draw-rod with regard to the pivot of the door. At the commencement of the opening movement, when the back movement of the draw-rod is but slight, this back movement is aided by means of a special cam, the action of which causes the pivot of the draw-rod to be displaced toward the pivot of the door so that the eccentricity of the two pivots diminishes. By this means I obtain a more uniform distribution and better utilization of the spring power acting upon the push-rod.

In the accompanying drawings, in which similar letters denote similar parts: Figure 1 is a sectional side elevation of my improved door closing apparatus, fastened to a door and the door-case belonging thereto and in its position of rest, that is to say, when the door is closed. Fig. 2 is a similar view, but in a position in which the door is partly opened. Fig. 3 is a top view of Fig. 2, and Fig. 4 is a detail.

The push-rod *a* which may be let into the upper edge of a door *A* and adapted to be displaced on a bar *b*, namely by means of a pin *a'* sliding in a slot of the bar *b* and an eye *b'*. Between these two parts is a spring *c* which surrounds the push-rod *a* and tends to press the latter out of the eye *b'* (Fig. 1). The head of the pin *a'* is embraced by a draw-rod *d* having a pivot *d'* at its other end which is fitted to turn in a sliding-piece *e* which can move

in a slot formed in a bar *f* secured to the door-case *B*. On a square of the pivot *d'* of the said draw-rod *I* provide a cam *g* bearing against a pressing roller *h*.

When for the purpose of opening it the door *A* is turned upon its pivot *i* the said cam *g* firmly connected with the pivot *d'* of the draw-rod, is also caused to turn so that instead of its recess *g'* the full part of the same will bear against the pressing roller *h* which is immovably arranged on the bar *f* fixed to the door-case. By this means the cam *g*, pivot *d'*, sliding piece *e*, draw-rod *d* and push-rod *a* are moved back against the pressure of the spring surrounding this push-rod, until the sliding piece strikes against the end of the slot in the bar *f* secured to the door-case. At this state the several parts are occupying the positions shown in Figs. 2 and 3. In the further opening of the door the back movement of the draw-rod *d* and push-rod *a* relatively to the door takes place solely in consequence of the eccentric position of the aforesaid two pivots *d'* and *i*, the push-rod being pulled back a distance equal to that between the two pivots until the door is quite open, as illustrated by dotted lines Fig. 3.

The door is automatically closed by the compressed spring *c* which surrounds the push-rod causing all the parts to move back in the reverse order to that in which they move when the door is opened. The latter is sufficiently secured in its closed position by the pressing roller *h* engaging with the recess *g'* in the cam *g*.

Having fully described my said invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a pivoted door, a spring actuated push-rod movably connected to the edge of said door, a draw rod connected at one end to said push-rod and provided at its opposite end with a pivot, said pivot being guided in a slot of a bar secured to the door-case, said pivot being disposed eccentrically to the pivot of the door, a cam adapted to bear against a pressing roller fastened to the door-case.

2. The combination of a door having a recess in the edge thereof, a bar secured to the

door and forming a bridge over said recess,
said bar having a slot therein, a spring actu-
ated push rod disposed in said recess, one end
thereof passing through an eye attached to
5 said bar, a pin attached to the opposite end
of said push-rod and extending up through
said slot, a draw-rod having a slot in one end
thereof adapted to engage the head of said
pin, said draw-rod being provided at its oppo-
10 site end with a pivot fitted to turn in a slid-
ing piece attached to the door case, a cam dis-

posed on said pivot, and a presser roller se-
cured to the door case and adapted to engage
said cam.

In testimony that I claim the foregoing as 15
my invention I have signed my name in pres-
ence of two subscribing witnesses.

FRIEDRICH R. BAUER.

Witnesses:

PAUL GOEPEL,
K. R. BRENNAN.