

No. 854,181.

PATENTED MAY 21, 1907.

W. J. SCHULTZ.
LOOSE LEAF BOOK BACK.
APPLICATION FILED MAY 8, 1905.

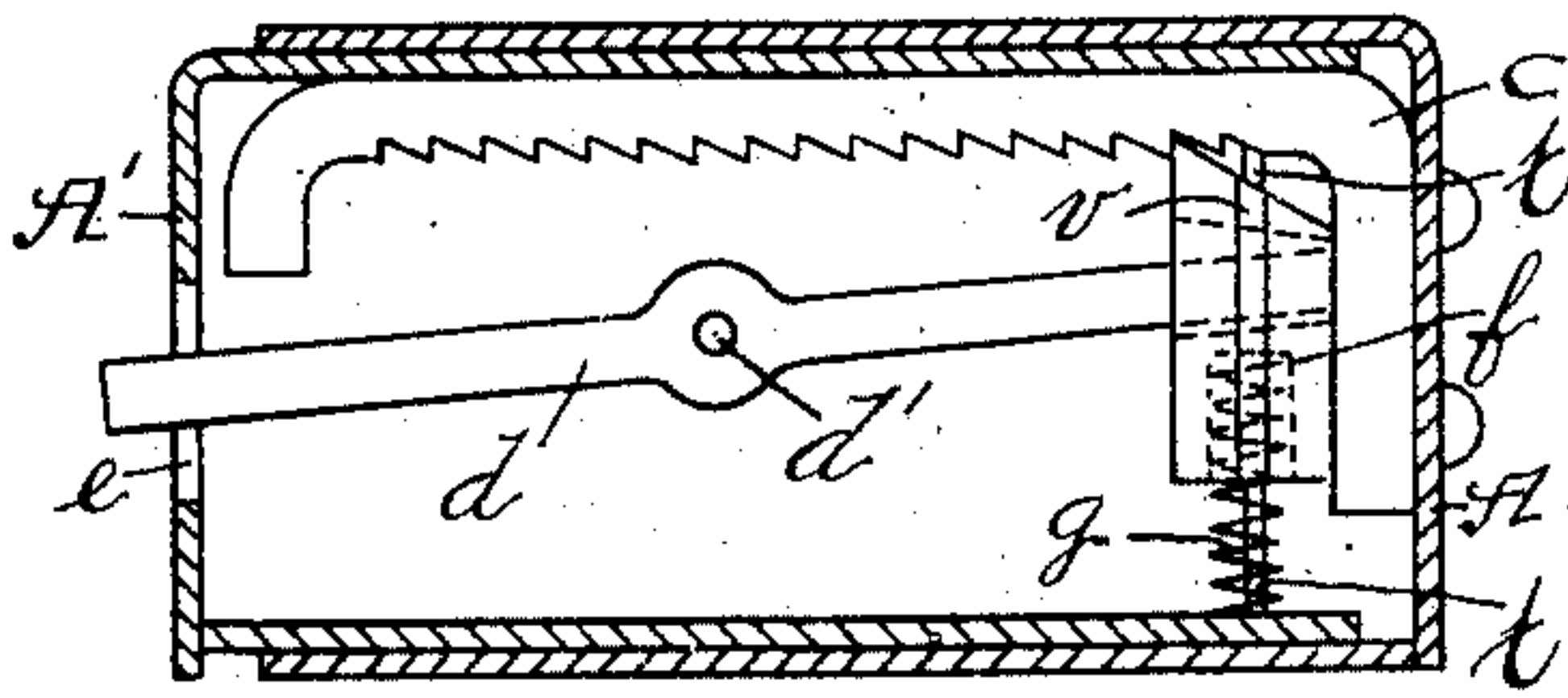


Fig. 1.

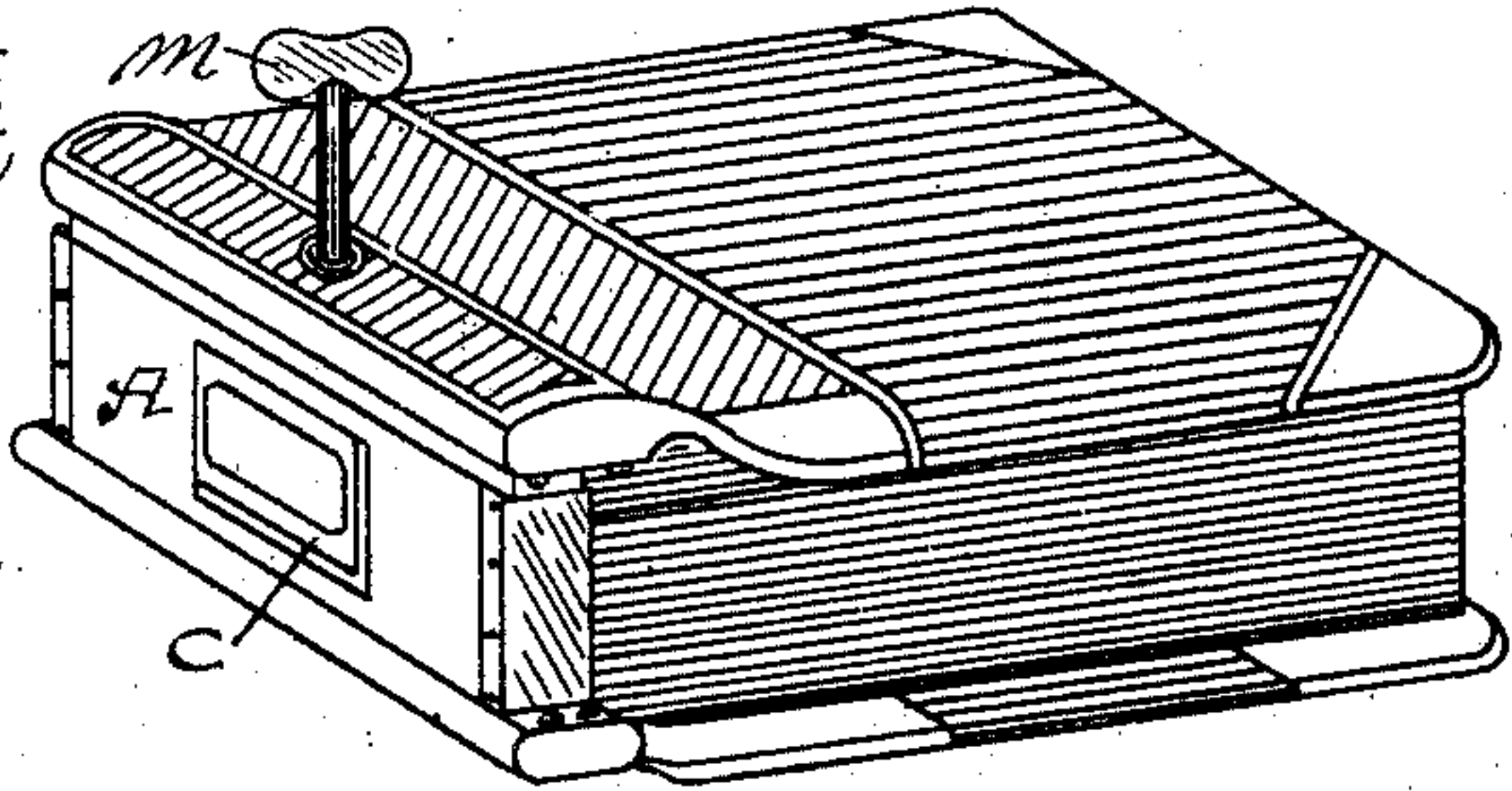


Fig. 2.

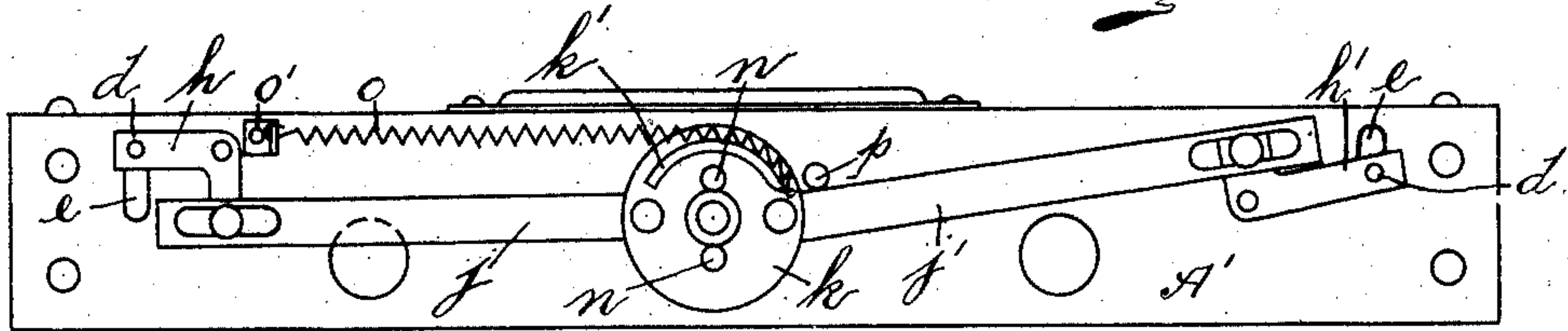


Fig. 3.

Fig. 8.

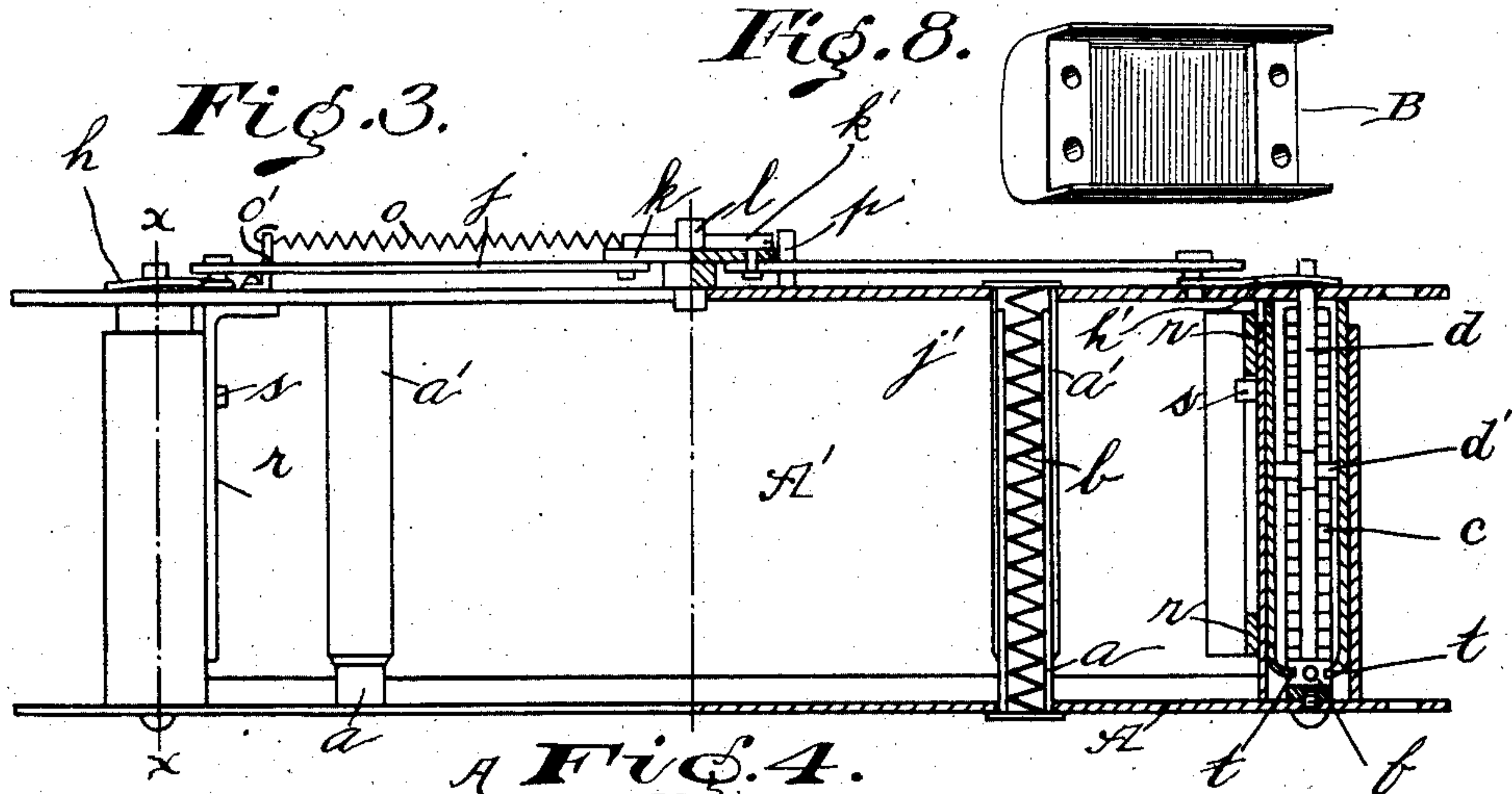


Fig. 4.

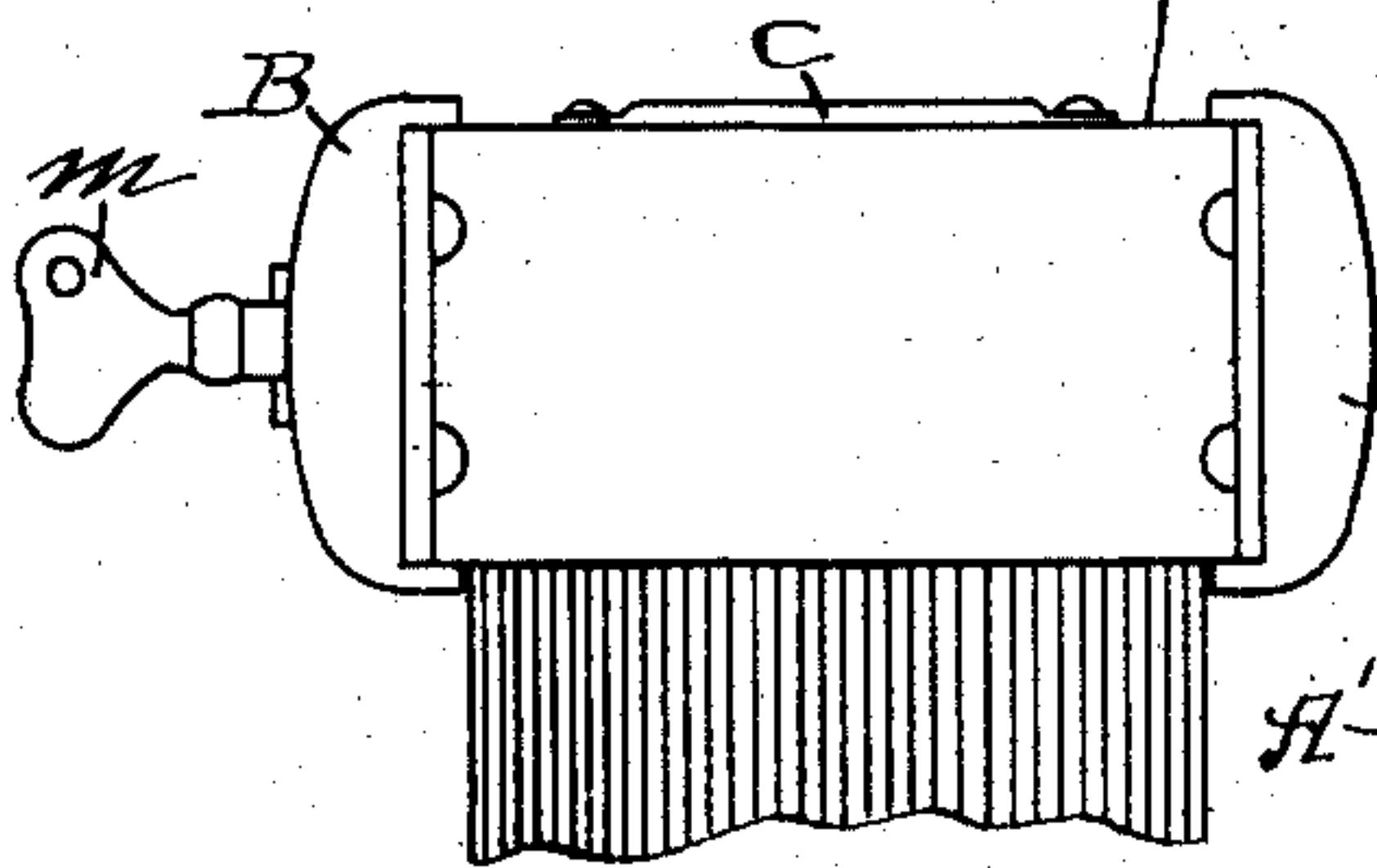


Fig. 6.

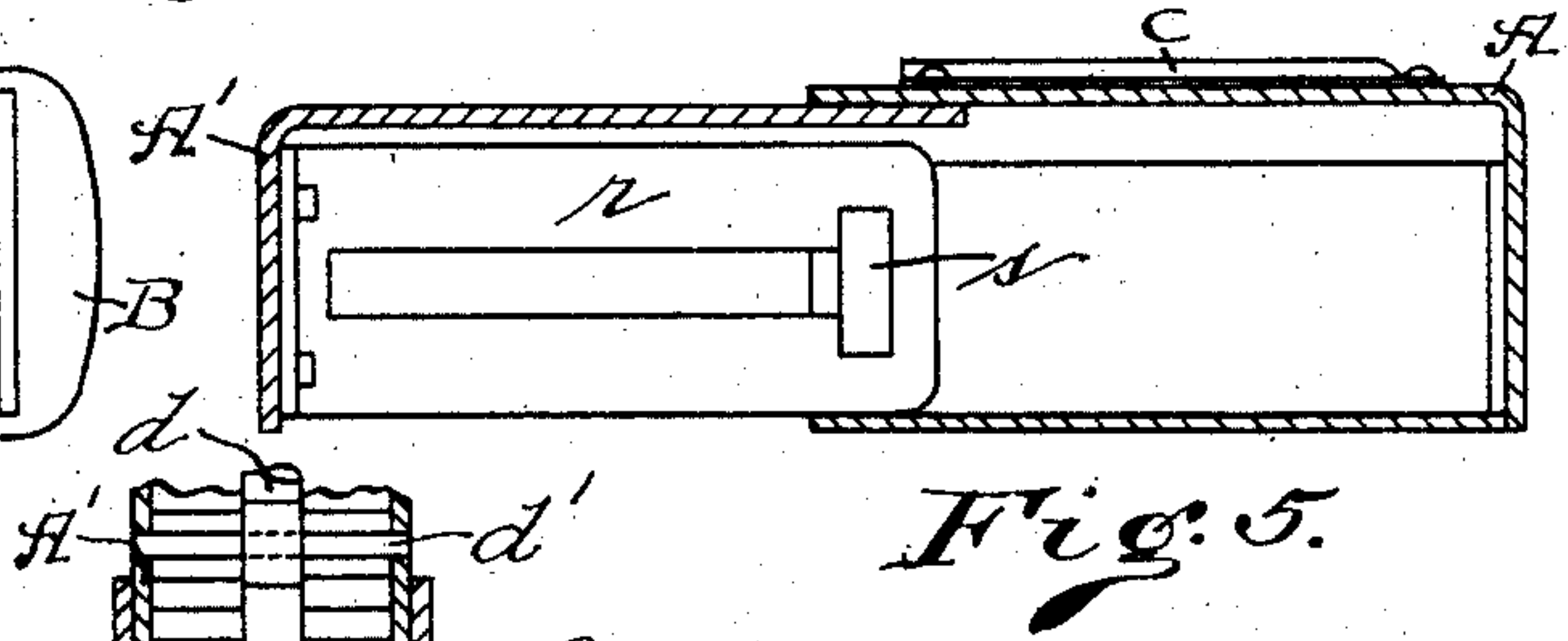


Fig. 7.

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LOOSE-LEAF-BOOK BACK.

No. 854,181.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed May 8, 1905. Serial No. 259,448.

To all whom it may concern:

Be it known that I, WILLIAM J. SCHULTZ, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Loose-Leaf-Book Backs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms a part of my specification.

My invention relates to what is known as a loose-leaf ledger, of the flat back description, and has to do with the back itself, and its method of operation.

The object of the invention is to provide a device that will permit of the ready addition or withdrawal of a leaf or leaves from the book, as occasion requires; the device of course being so constructed as to adapt itself to a varying number of leaves.

In the drawings:—Figure 1 is a view of one end of the device taken on the line $x-x$ of Fig. 4; Fig. 2 is a perspective view of a book with my improved back, and showing the key in place, whereby the mechanism is released to permit of the back being distended; Fig. 3 is a side elevation of the casing and mechanism with the cover portion of the book removed; Fig. 4 is an inside elevation of the same with the right hand end shown in section; Fig. 5 is a view of one of the ends of the casing looking at it from the inside; Fig. 6 is a view taken from either the top or bottom of the book shown in Fig. 2, with a portion of the cover and leaves broken away, and the leather covering omitted; Fig. 7 is a sectional view on an enlarged scale of a portion of one end of the back shown in Fig. 4, to show the locking mechanism. Fig. 8 is a perspective view of the cover member or channel B, the same being shown turned upwardly, so as to disclose the screw-holes in the ends thereof, and without the binding.

Like letters of reference indicate identical parts in the respective figures.

The outside casing or flat back is composed of the two parts A, and A', the one adapted to take onto the other. The two sections of the casing are provided with ends adapted to telescope, that is, the one to fit within the other. The ends on the sectional casing A are formed by bending the ends up at right angles and down partway, to form a sort of a hood. The ends on the sectional casing A' are similarly formed, except that they are smaller in dimensions to fit within the

ends of the other casing A. The ends of the section A are of course so formed as to leave a space between the bent-down portion of the end and the casing proper, so that the sectional casing A' may slide back and forth on the casing A, while its ends take into the ends of the section A. Each section is also provided at a suitable point with the attaching rods or tubes a , and a' , which can be seen in Fig. 4. These tubes are arranged to telescope, and it is to them that the leaves of the book are secured, by having these tubes or rods pass through perforations in the leaves at points registering with the tubes. These tubes are provided with a coil-spring b , as can be seen in Fig. 4 (where one of the tubes is shown in section), whose purpose is to throw the sections apart when the locking mechanism is released.

Secured within the ends of the casing A, as seen in Fig. 1 is the rack c , which is secured to the side of the casing by the two screws shown. This rack extends the full width of the sectional casing A. Pivotaly secured within the ends of the other section A' is the lever d pivoted at the point d' , see Fig. 1, whose one end extends out through the opening e in the sectional casing A'. The other end of this lever d takes into and engages with the detent or pawl f which is normally held in mesh with the rack c by the spring g . I prefer to construct the detent or pawl f with an opening in its lower end into which the spring g may take. It will be seen that with the detent or pawl f in the position shown in Fig. 1, and it being understood that a similar rack and pawl is provided at the opposite end of the casing, that it will be impossible to pull the sectional casing apart without operating the levers d . Pivotaly secured to the outside of the sectional casing A are bell-crank-levers h , h' , see Fig. 3, which take over the ends of the levers d , as can be seen in Fig. 3. Secured to the other ends of the bell-crank-levers h , h' are the rods j , j' , which preferably have a slot and pin connection with the bell-crank-levers. These rods j , j' at their other ends, are pivotaly secured to the rotatably mounted disk k . The pivotal point for this disk k is extended, as can be seen at l , see Fig. 4, to receive the key m , which is provided with the points which take into the two holes n of the disk k . The key having its bearing on the pin l , when inserted in place, will, when turned, also turn with it the disk k , which in turn, will pull on the rods

5 j, j' , oscillating the bell-crank-levers h, h' ,
 which will swing the levers d on their pivotal
 points d' , and pull the detent or pawl f out
 of mesh with the rack c , whereupon the
 10 springs b in the telescopic tubes a, a' , will
 expand and throw the sectional casing apart.
 In order that the disk k together with the
 rods j, j' may be returned to their normal
 position, I provide the spring o , one end of
 15 which is secured at o' to the wall of the casing,
 while its other end is secured to the farther
 side of the disk k . In order to keep the
 spring out of the way of the keyholes, I pro-
 vide the disk k with the shoulder k' against
 20 which the spring takes. To prevent the
 action of the spring from pulling the disk k
 out of its normal position, as shown in Fig. 3,
 I provide the stop p , see Fig. 3, against which
 the rod j' takes. This will keep the disk k
 25 with the key openings in proper alinement
 with the opening in the escutcheon, which is
 placed in the outside covering of the casing,
 as seen in Fig. 2.

In order that the sectional casing may not
 30 pull apart when the detents or pawls are
 released, I provide the slotted-piece r , see
 Fig. 5, which is secured to the side wall of the
 casing A' . Taking into the slotted-pieces
 r is the headed stud s , which is secured to the
 end of the casing A .

If it is desired, the slotted piece r , together
 with the headed stud s may be omitted; as
 the sectional casing will be prevented from
 coming entirely apart by reason of the bent-
 35 down end of the rack c in each of the hooded
 ends of the casing, which bent-down end
 extends sufficiently to prevent the passage
 of the detents or pawls f . While the detents
 or pawls f can be depressed by the levers d
 40 sufficiently to disengage them from the racks
 c , these pawls f cannot be depressed enough
 to permit of their passage past the bent-
 down ends of the racks c , so that the con-
 struction of racks employed, together with
 45 the pawls, will of themselves form a locking
 mechanism to prevent the sectional casing
 from being disconnected. The slotted piece
 r and headed stud s are simply shown, and
 may be used, merely as an additional pre-
 50 caution if desired.

The pawl f is provided on each of its sides
 with a groove v , see Fig. 1 into which the ends
 of the hooded end on the sectional casing A'
 take; these ends are bent at right angles as
 55 seen at t, t , in Fig. 7, and form a guide-way
 for the pawl, and thus insure a direct engage-
 ment of the pawl with the rack. If some
 such guide-way were not provided, the pawl
 would be very apt, by reason of the action of
 60 the spring, to bind.

Secured to the sides of the sectional casing,
 by screws or otherwise, are the sections or
 members B , to which the covers are secured.
 The members B are preferably constructed
 65 of a metallic channel whose ends are closed

by soldering therein, or in any other way se-
 curing a right-angular plate against which
 the sides of the sectional casing may take and
 be secured thereto by screws as shown in the
 drawing (Figs. 2 and 6). This metallic 70
 channel with its closed ends, is then bound in
 the binding with which the covers are bound,
 so that the binding for the covers will also
 constitute the hinge therefor. The con-
 75 struction of the channel and its ends can
 more clearly be seen in Fig. 8. It is under-
 stood also, that after the back members B
 have been put in place, and the covers se-
 cured to it, that the covers and back mem-
 80 bers are suitably bound in leather or other
 material, giving the book a finished appear-
 ance.

The outside member A of the sectional
 casing can also be provided at its center with
 the card receiver or holder, C . 85

I have described the ends of the sectional
 casing as being formed by bending a portion
 of the ends of the casing upon themselves,
 but it will be readily understood that these
 hooded ends might be separately made and 90
 secured by solder or any other means to the
 ends of the sectional casing, and I do not
 wish to be understood as limiting myself to
 the exact construction shown and described,
 but 95

What I claim as my invention, and wish to
 secure by Letters Patent, is:—

1. A loose-leaf book-back comprising a
 casing in two sections, the one adapted to
 take upon the other, said sections being pro- 100
 vided with telescopic attaching tubes, springs
 within said tubes, hooded ends on said sec-
 tions, the ends on the one section taking with-
 in the ends of the other, the one set of ends
 provided with a rack, a spring-controlled 105
 pawl within the ends of the other section and
 normally in mesh with the racks, means se-
 cured within the ends containing the pawls
 and in operative connection with the latter,
 bell-crank-levers pivoted to the side of one of 110
 said sections and pivoted to means within
 the ends containing the pawls, a rotatably
 mounted disk on said section having direct
 pivotal connection with said bell-crank-le- 115
 vers independently of the casing, whereby,
 upon the turning of said disk the levers are
 rocked and the pawls thrown into or out of
 engagement with the racks, and the casings
 contracted or expanded.

2. A loose-leaf book-back comprising a 120
 casing in two sections, the one adapted to
 take upon the other, attaching tubes secured
 to each of said sections and adapted to tele-
 scope, said tubes provided with springs tend- 125
 ing to expand said casing, hooded ends pro-
 vided on each of said sections, the ends on
 the one section taking within the ends of the
 other, a pawl and rack secured within said
 ends and normally held in mesh, pivoted le- 130
 vers secured within said ends and connected

with said pawls, the other ends of the levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers pivoted to said casing and to the pivoted levers, a rod pivoted to said disk and bell-crank-levers respectively, independently of the casing, whereby, upon the turning of the disk the levers are rocked and the pawls and racks disengaged, and means for returning said disk and levers to their normal position.

3. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a rack secured within each of said ends, a pawl having the end opposite its pointed or engaging end recessed, a spiral spring adapted to enter said recess and bear against said pawl and the adjacent wall of the sectional casing whereby said pawl is caused to engage said rack at direct right angles thereto and said pawl and rack are normally held in mesh, pivoted levers secured within said ends and loosely connected to said pawls, the other ends of the pivoted levers extending to the outside of the casing, and means for operating said levers.

4. A loose-leaf book-back comprising a casing composed of two sections, the one adapted to take upon the other, said sectional casing provided with telescopic attaching tubes or rods, hooded ends secured to each section of said casing, the ends of the one section taking within the ends of the other, a rack secured within one set of said ends, a spring-controlled pawl secured within the other set of said ends, said set of ends formed to provide a guideway for said pawl which is normally held in mesh with the rack, and means secured to said pawls and extending to the outside of the casing whereby the pawls may be thrown out of mesh with the rack, substantially as shown and for the purpose described.

5. A loose-leaf book-back comprising a casing composed of two sections, the one adapted to take upon the other, said sectional casing provided with telescopic attaching tubes or rods, each of said sections provided with hooded ends, the ends on the one section adapted to take within the ends of the other section, racks secured within one set of said ends, spring-controlled pawls secured within the other set of said ends, the pawls provided with grooves in their sides into which a portion of the ends take to form guide-ways, the pawls normally held in mesh with the racks, and means secured to said pawls and extending to the outside of the casing whereby the pawls may be thrown out

of mesh with the rack, substantially as shown and for the purpose described.

6. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers pivoted to said casing and to said pivoted levers, rods slidably pivoted to said bell-crank-levers and pivoted to said rotatably mounted disk whereby upon the turning of the disk the pivoted levers are rocked and the pawls and racks disengaged, and means for returning said disk and pivoted levers to their normal positions.

7. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends of the one section taking within the ends of the other, a rack secured within each of said ends, a pawl having the end opposite its pointed or engaging end recessed, a spiral spring adapted to enter said recess and bear against said pawl and the adjacent wall of the sectional casing whereby said pawl is caused to engage said rack at direct right-angles thereto, and said pawl and rack are normally held in mesh, pivoted levers secured within said ends and loosely connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers secured to said casing and connected with the pivoted levers and said disk whereby, upon the turning of the disk the levers are rocked and the pawls and racks disengaged, and means for returning said disk and levers to their normal position, substantially as shown and for purpose described.

8. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to one of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends of the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the pivoted

levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers secured to said casing and connected with the pivoted levers 5 and said disk, whereby upon the turning of the disk the levers are rocked and the pawls and racks disengaged, a slotted piece and rectangular stud secured to said sections respectively whereby said sections are held 10 from disengagement, and means for returning said disk and levers to their normal position, substantially as shown and for the purpose described.

9. A loose-leaf book-back comprising a 15 casing in two sections, the one adapted to take upon the other, attaching tubes secured to one of said sections and adapted to tele-

scope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on 20 the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected 25 with said pawls, the other ends of the pivoted levers extending to the outside of the casing, means for operating said levers, and a slotted piece and rectangular stud secured to said sections respectively, whereby said sections are held from disengagement.

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Witnesses:

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