

(No Model.)

W. E. CRANE.
FILE BOX.

No. 562,950.

Patented June 30, 1896.

Fig. 1.

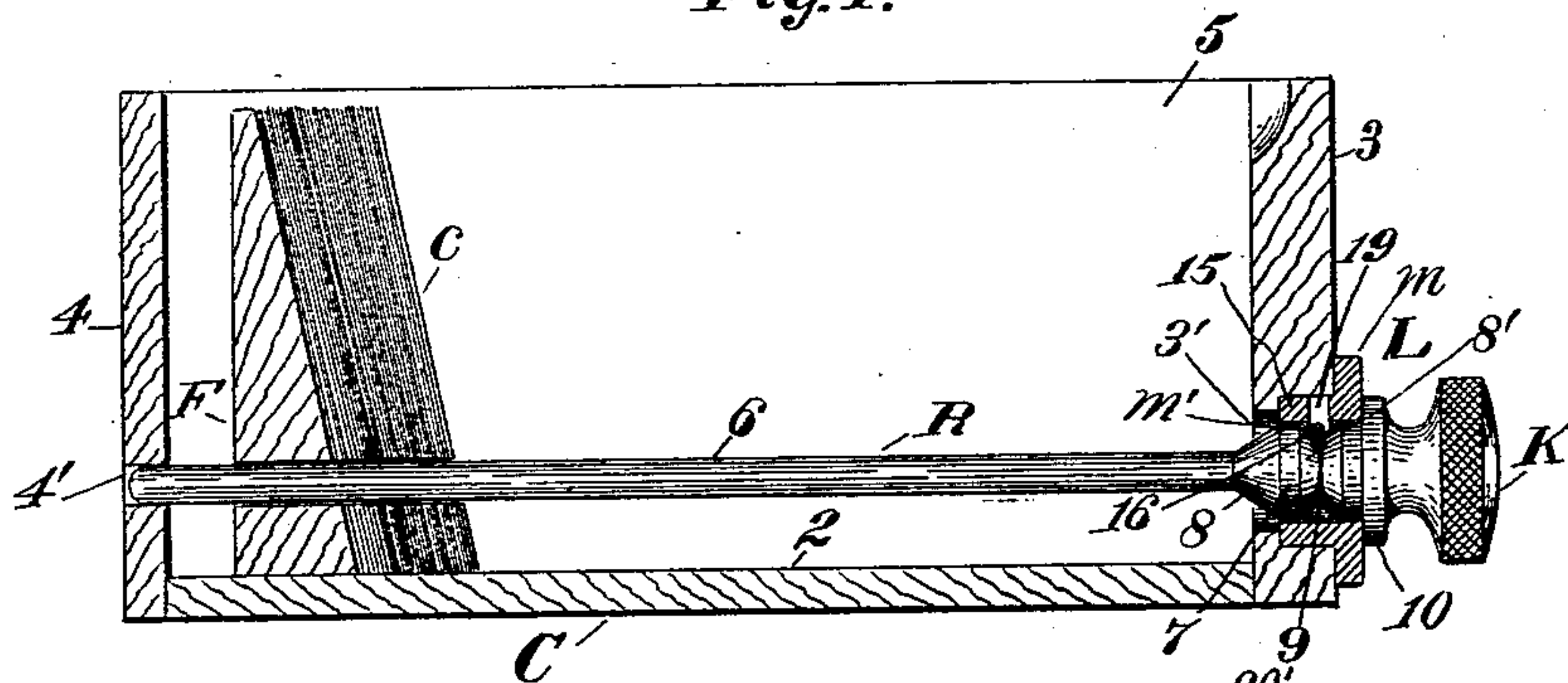


Fig. 2.

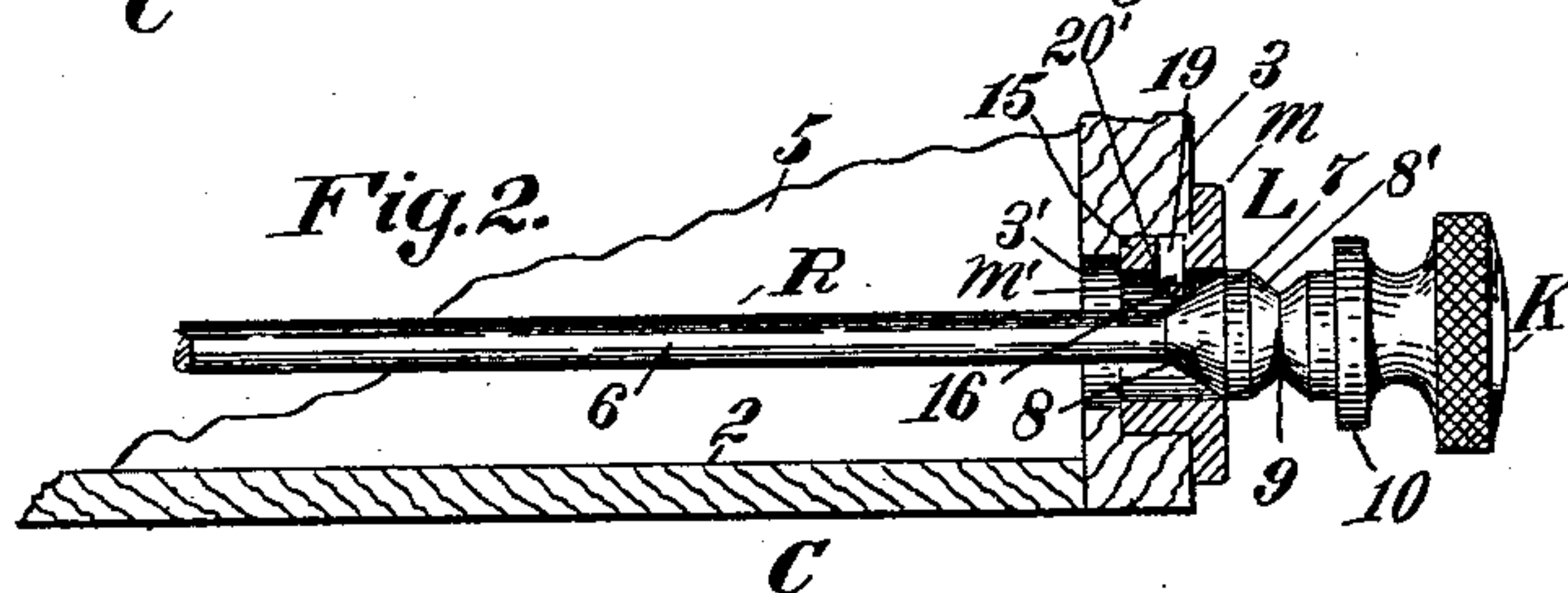


Fig. 3.

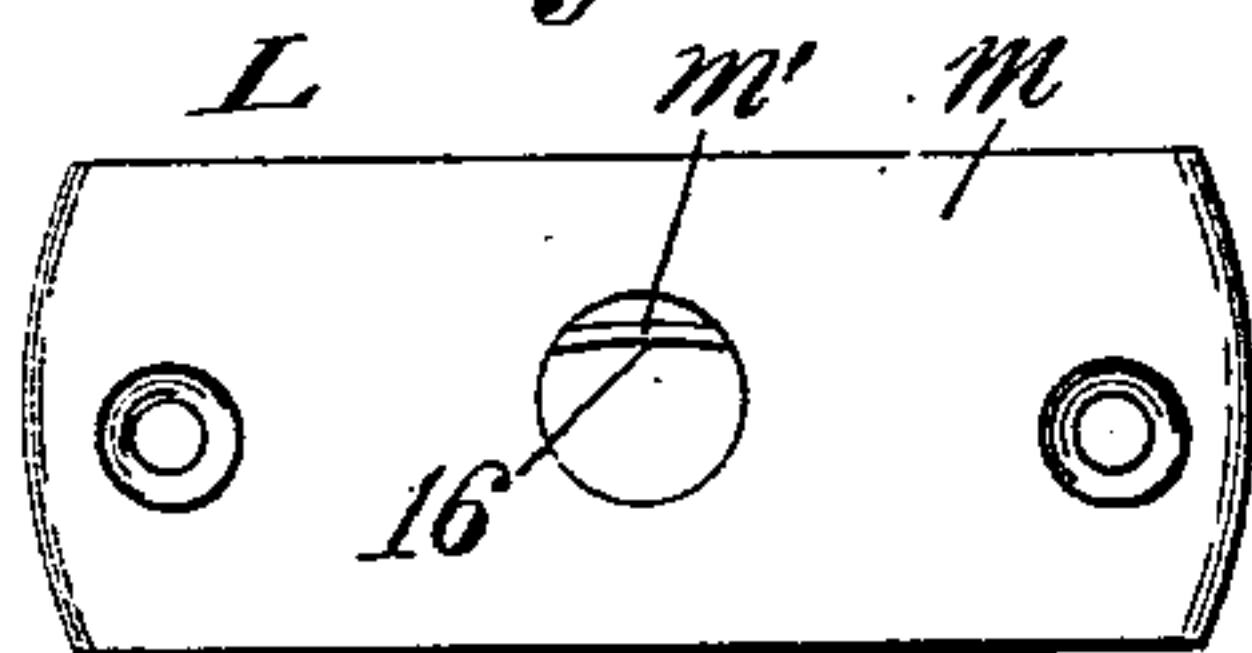


Fig. 5.

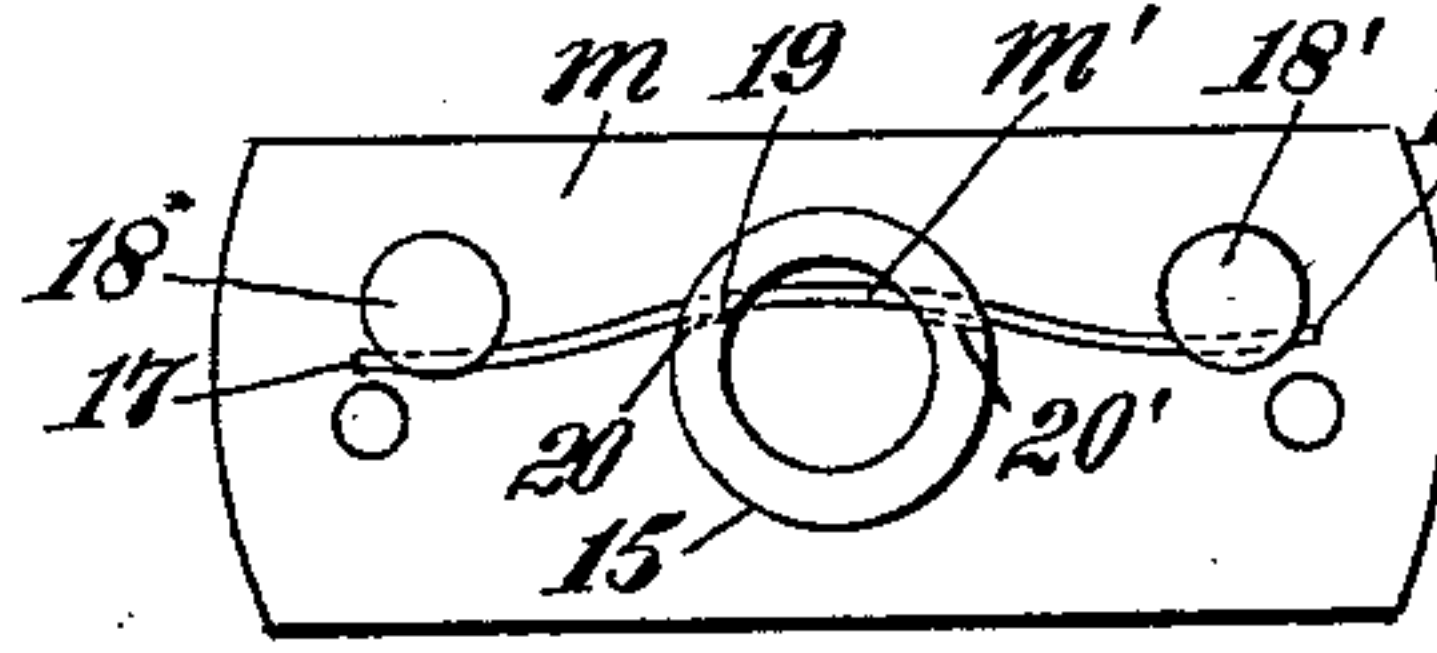


Fig. 7.

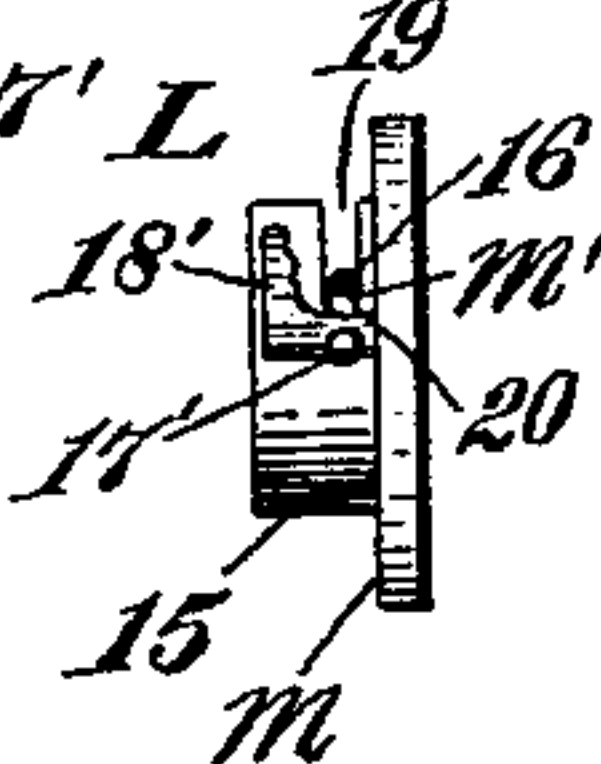


Fig. 4.

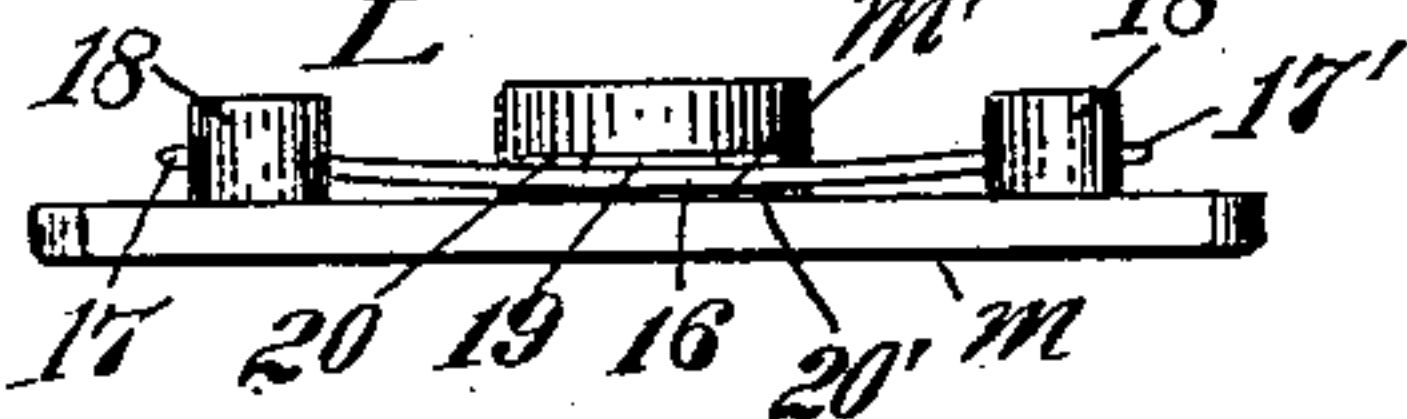
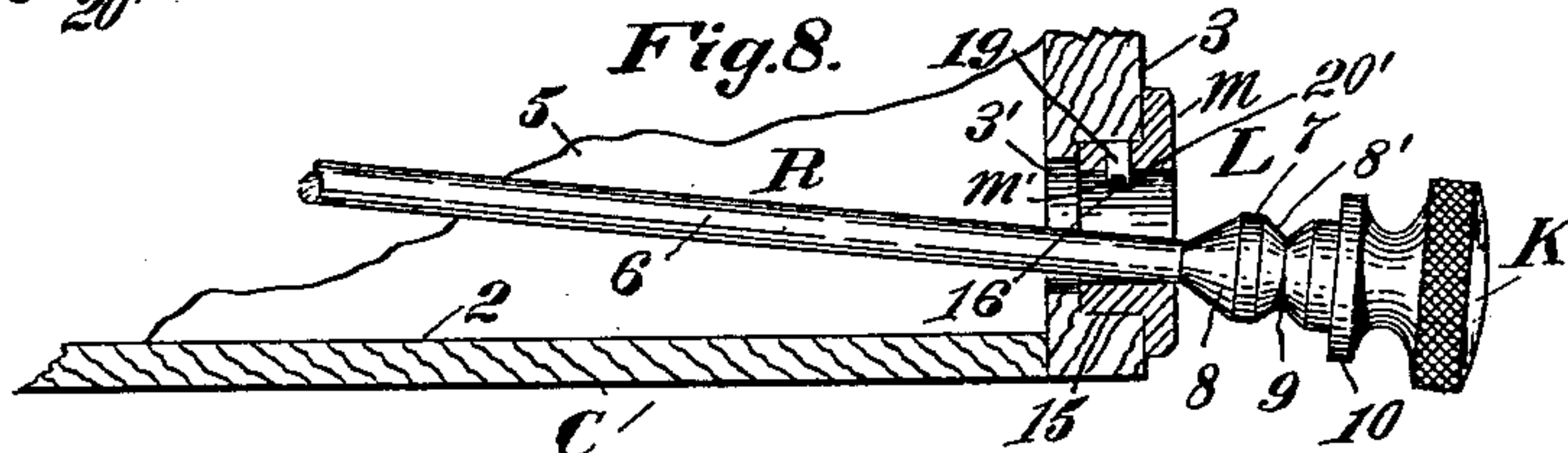


Fig. 6.



Fig. 8.



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UNITED STATES PATENT OFFICE.

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FILE-BOX.

SPECIFICATION forming part of Letters Patent No. 562,950, dated June 30, 1896.

Application filed March 23, 1896. Serial No. 584,382. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. CRANE, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in File-Boxes, of which the following is a specification.

This invention relates to that class of file-boxes commonly known as "index" file-boxes, and in which the index-cards are held in place in a suitable receptacle by means of a file-rod which is extended through a recess formed in the end of the receptacle and through perforations in said cards.

One object of the invention is to provide a simple and effective file-box of the class specified, of improved construction and organization, embodying a file-rod so supported as to be capable of lateral, longitudinal, and rotary movements, and to provide, in connection with said file-rod, improved means for normally locking said rod against longitudinal movement.

A further object of the invention is to provide a file-box of the class specified, having a file-rod and a locking device therefor of such construction and organization that the file-rod may be quickly unlocked and removed, or replaced and locked, relatively to the card-receptacle, by a simple longitudinal movement, and without any lateral or rotary movements thereof.

In the drawings accompanying and forming part of this specification, Figure 1 is a vertical longitudinal section of the file-box embodying my invention, said figures showing the file-rod extended through a series of cards and locked against accidental movement. Fig. 2 is a similar sectional view of a portion of the file-box, showing the file-rod unlocked relatively to the card-receptacle and partially drawn out, but with its axis in a plane parallel to the bottom of the receptacle. Fig. 3 is a front view of the file-rod-locking device detached from the card-receptacle. Fig. 4 is a plan view of the locking device as seen from above in Fig. 3. Fig. 5 is a rear view of the locking device as seen from above in Fig. 4. Fig. 6 is an under side view of the locking device as seen from below in Fig. 5. Fig. 7 is an end view of the locking device as seen from the right-hand side in Figs. 5 and 6; and

Fig. 8 is a sectional view, similar to Fig. 2, of a portion of the file-box, and showing the file-rod partially withdrawn from the card-receptacle and tilted out of the horizontal plane shown in Figs. 1 and 2.

Similar characters designate like parts in all the figures of the drawings.

In the preferred form thereof (shown most clearly in Fig. 1) the file-box comprises a box-like card receptacle or casing, (designated, in a general way, by C;) a transversely-perforated follower F; a file-rod, (designated, in a general way, by R,) and a file-rod supporting and locking device, (designated, in a general way, by L.)

The card receptacle or casing C, which may be of any suitable general construction, is shown comprising a bottom wall 2; a front end wall 3, having an opening 3' therethrough, to receive a bearing for the file-rod R; a rear end wall 4, having a perforation 4' in axial alinement with the opening 3' in the front end 3, adapted for receiving the inner end of said file-rod; and two side walls, one only of which is shown, and which is designated by 5.

The file-rod R in the preferred form thereof (shown in Figs. 1, 2, and 8) consists of the cylindrical card-supporting spindle 6, having a knob K at the outer end thereof. The stem 7 is preferably of greater diameter than the diameter of the spindle or file-rod proper, and constitutes the journal for said file-rod. The knob-stem 7 or file-rod journal has a conically-tapered locker-actuating face 8 at the inner end thereof, which merges into the spindle or body portion 6 of the file-rod, and it is also circumferentially grooved, slightly in advance of the cone-shaped portion 8, to form an oppositely-disposed locker-actuating face 8' and also form a wedge-like seat 9 for the resilient locking member or file-rod locker of the locking device L, as will be hereinafter more fully described. This stem 7 is also shown having a circumferential flange 10, which is located intermediate of the seat 9 and the knob K, and constitutes a stop or abutment for limiting the inward movement of the file-rod relatively to the card-receptacle C. By conically tapering the inner end of the knob-stem, as shown at 8, and forming a V-shaped circumferential groove 9 in said stem, as described, two oppositely-inclined locker-actuating

faces or cones 8 and 8' are provided for alternately actuating the locking member of the locking device as the file-rod is moved outward and inward with respect to the card-receptacle, to thereby facilitate the unlocking and locking of the file-rod with respect to the card-receptacle, and permit the removal and displacement of said file-rod without rotative or transverse movements, as will be herein-
 10 after more fully described.

The supporting and locking device for the file-rod is shown comprising an escutcheon-plate or locker-carrier *m*, which is secured to the outer face of the front end wall 3 of the
 15 card-receptacle and has a tubular bearing 15, which extends into the perforation 3' in said end wall and is adapted to receive the journal 7 of and support the file-rod when the same is in its locked position, and a file-rod
 20 locker *m'*, carried by the escutcheon-plate *m* in position to engage and lock the file-rod relatively to the card-receptacle.

The file-rod locker *m'* is shown in the nature of a slightly bowed or curved piece of
 25 wire or spring, the middle portion 16 of which projects across the opening of the bearing 15 of the plate *m*, and normally intersects the path of movement of the locker-actuating faces 8 and 9 of the file-rod, and the opposite
 30 outer ends 17 and 17' bear against the under faces of two laterally-projecting lugs 18 and 18' upon the escutcheon-plate or locker-carrier *m*, said lugs being located, one at each side of the bearing 15, as will be understood
 35 by reference to Figs. 4 and 5 of the drawings.

As a means for holding the file-rod locker *m'* against displacement the bearing 15 of the plate *m* has a slot 19, formed in one side thereof transversely, which is shown extend-
 40 ing from the upper face of said bearing to a point slightly above the axial line of said bearing, and the file-rod locker *m'* extends over the bearing-faces 20 and 20' at the inner ends of said slot 19 and underneath the two
 45 lugs, the bearing-faces of the lugs, against which the outer ends of the locker *m* bear, being located, in all cases, below the bearing-faces 20 and 20', against which the middle portion of said locker bears.

The walls of the slot 19 in the bearing 15 hold the file-rod locker against movement in the plane of the longitudinal axis of the bearing 15, and the bearing-faces 20 and 20' of said bearing 15 are so disposed relatively
 50 to the bearing-faces of the lugs 18 and 18' that when the locker *m'* is in operative position upon the locker-carrier *m*, as shown in Fig. 5, said locker exerts a holding stress in a plane intersecting the path of movement of
 55 the file-rod.

It will be obvious that the relative dispositions of the middle and end bearings for the locker *m* may be reversed from that shown in Fig. 5, and that the locker might exert an
 60 upward stress relatively to the bearing 15, instead of a downward stress, as shown, without departure from this invention.

In filing a series of cards in the card-receptacle upon the file-rod, said rod is passed
 70 through the bearing 15, with the spindle thereof extending through the perforations in the cards *c*, until the locker-actuating face 8 bears against the inner face of the locker
 75 *m*, which will force said locker outward relatively to said bearing, thereby allowing the rod to be moved farther inward until the seat 9 in the knob-stem of said rod registers with the slot 19 in the bearing 15, when the locker
 80 will, owing to its tension, immediately engage said locker-seat 9 and lock the rod against accidental, longitudinal movement, but allowing the same to be rotated freely in the bearing 15.

When it is desired to remove or withdraw the rod from the card-receptacle, a simple
 85 pull upon the knob *K* is all that is necessary, the opposing locker-actuating face 8' forcing the locker outward relatively to the seat 9, and releasing the same from locked engagement with the rod, the stress exerted upon
 90 the rod to withdraw the same being, of course, sufficient to overcome the resistance of the locker.

From the foregoing it will seen that the file-rod may be unlocked and withdrawn from
 95 the card-receptacle, and be replaced and locked relatively to said card-receptacle by simple longitudinal movements and without any lateral or rotary movement thereof, and that, after the rod *R* is partially withdrawn
 100 from the card-receptacle, as shown in Fig. 8, said rod may be freely moved laterally.

Having described my invention, I claim—

1. In a file-box, a card-receptacle having a perforated front wall; combined with a locker-
 105 carrying plate secured to said front wall, and having a transversely-slotted tubular bearing extended into the perforation in said wall; a file-rod locker extending through the slot of
 110 said bearing, and intersecting the plane of the central opening of the bearing; and means for normally holding the locker in operative position relatively to said bearing.

2. In a file-box, a card-receptacle having a perforated front wall; combined with a locker-
 115 carrying plate secured to said front wall, and having a transversely-slotted tubular bearing extended into the perforation in said wall; a resilient file-rod locker supported against
 120 movement longitudinally of the bearing between the side walls of the transverse slot in said bearing; and lugs located upon the locker-carrying plate, one at each side of the bearing, and engaging the opposite ends of the locker, and adapted for holding said locker
 125 under tension in operative position.

3. In a file-box, a card-receptacle, having a perforated front wall; combined with a
 130 locker-carrying plate secured to said front wall, and having a bearing-opening in register with the perforation in the front wall of the card-receptacle; a resilient locker carried on said plate, and intersecting the plane of the opening therein; a file-rod supported in

said bearing-opening, and having two oppositely-disposed locker-actuating cones, located one in advance of the other and in position for alternately actuating the locker as the same is moved inward and outward relatively to the card-receptacle, and having a circumferential locker-receiving seat for normally engaging the locker to hold the file-rod against accidental longitudinal movement.

10 4. In a file-box, a card-receptacle having a perforated front wall; combined with a locker-carrying plate secured to the front wall, and having a transversely-slotted tubular bearing extended into the perforation in
15 said wall, and also having two locker-engaging lugs, one located at each side of said bearing; a resilient file-rod locker extending through the slot in said bearing, and intersecting the plane of the bearing-opening, and
20 having its opposite ends in engagement, respectively, with the two lugs of the locker-carrying plate; and a file-rod supported in said bearing, and having oppositely-inclined locker-actuating faces located one in advance
25 of the other, and in position for alternately engaging and actuating the file-rod locker when the rod is moved longitudinally in opposite directions, respectively, and also having, in juxtaposition to one of said inclined
30 actuating-faces, a circumferential locker-receiving seat in which the locker normally engages for holding the file-rod against accidental longitudinal movement.

35 5. In a file-box, the combination of a retaining-plate secured to the front wall thereof; a cylindrical opening through the retain-

ing-plate and wall; a transverse slot extending into the cylindrical opening; a retaining-spring in said slot, pressing toward the center of the opening; and a card-retaining rod 40 having a knob provided with annular inclined faces adapted to coact with said spring to retain the rod in place.

6. In a file-box, the combination of a retaining-plate having a circular opening, and 45 provided with lugs near each end thereof; a spring engaging said lugs, and pressing toward the center of the circular opening in the retaining-plate; and a retaining-rod adapted to pass into said opening, and into 50 a similar opening at the rear of the file-box, the rod being provided with a shoulder or stop, and also having annular inclined faces adapted to coact with said spring to retain the rod in place. 55

7. In a file-box, a retaining-plate secured to the front wall; an opening through the plate and wall; a tubular extension upon said plate; a transverse slot nearly to the center of the opening through the extension; 60 and a retaining-rod adapted to pass into the opening, having means for stopping said rod in a predetermined, longitudinal position; and an inclined surface adapted to force the spring outward while the rod is pushed to 65 place; and an oppositely-disposed face adapted to be impinged by said spring to retain the rod against its stop.

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