

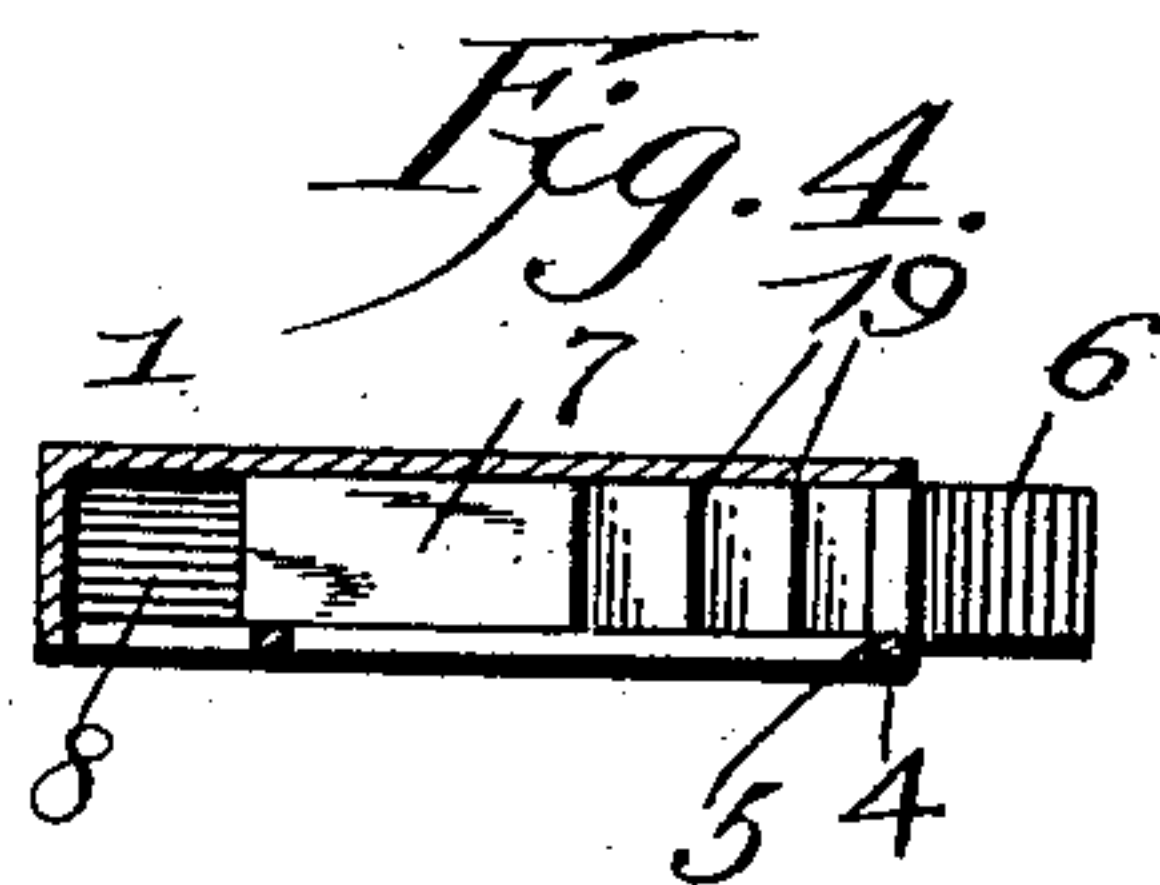
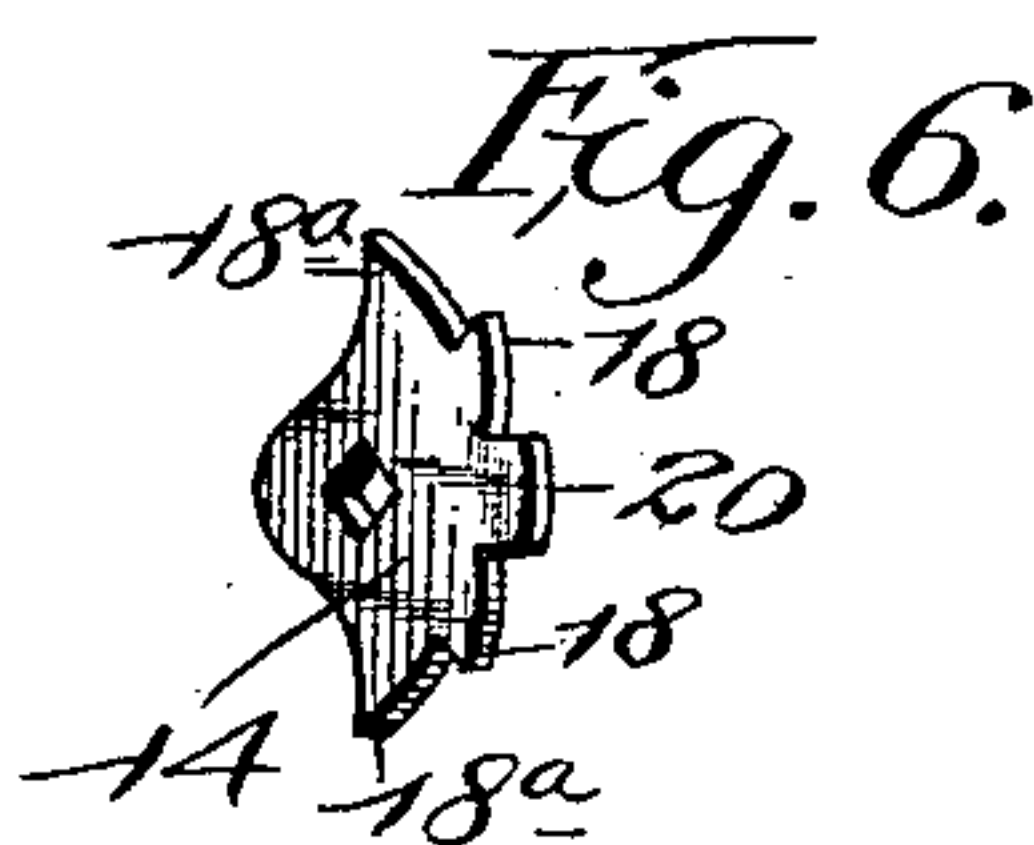
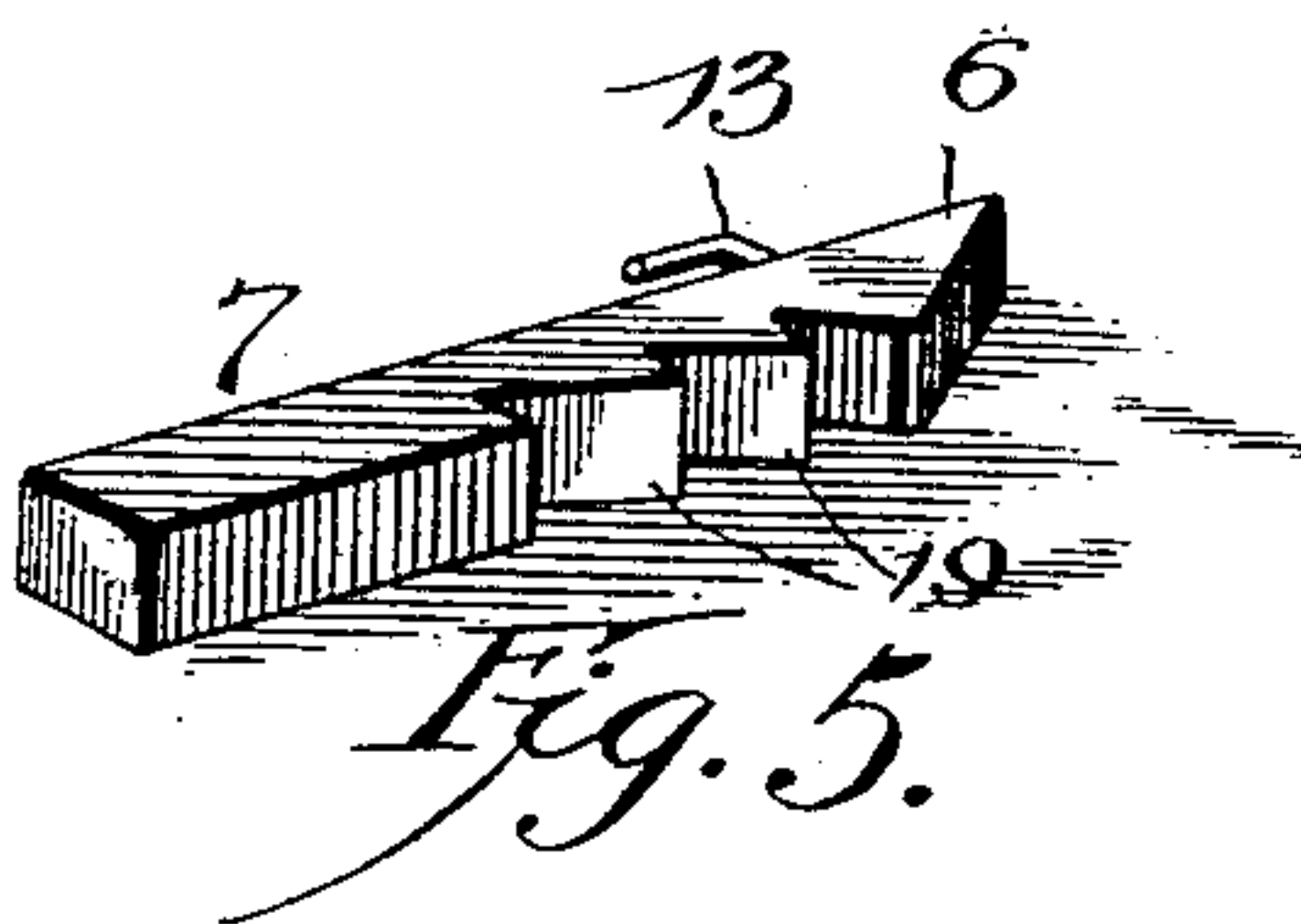
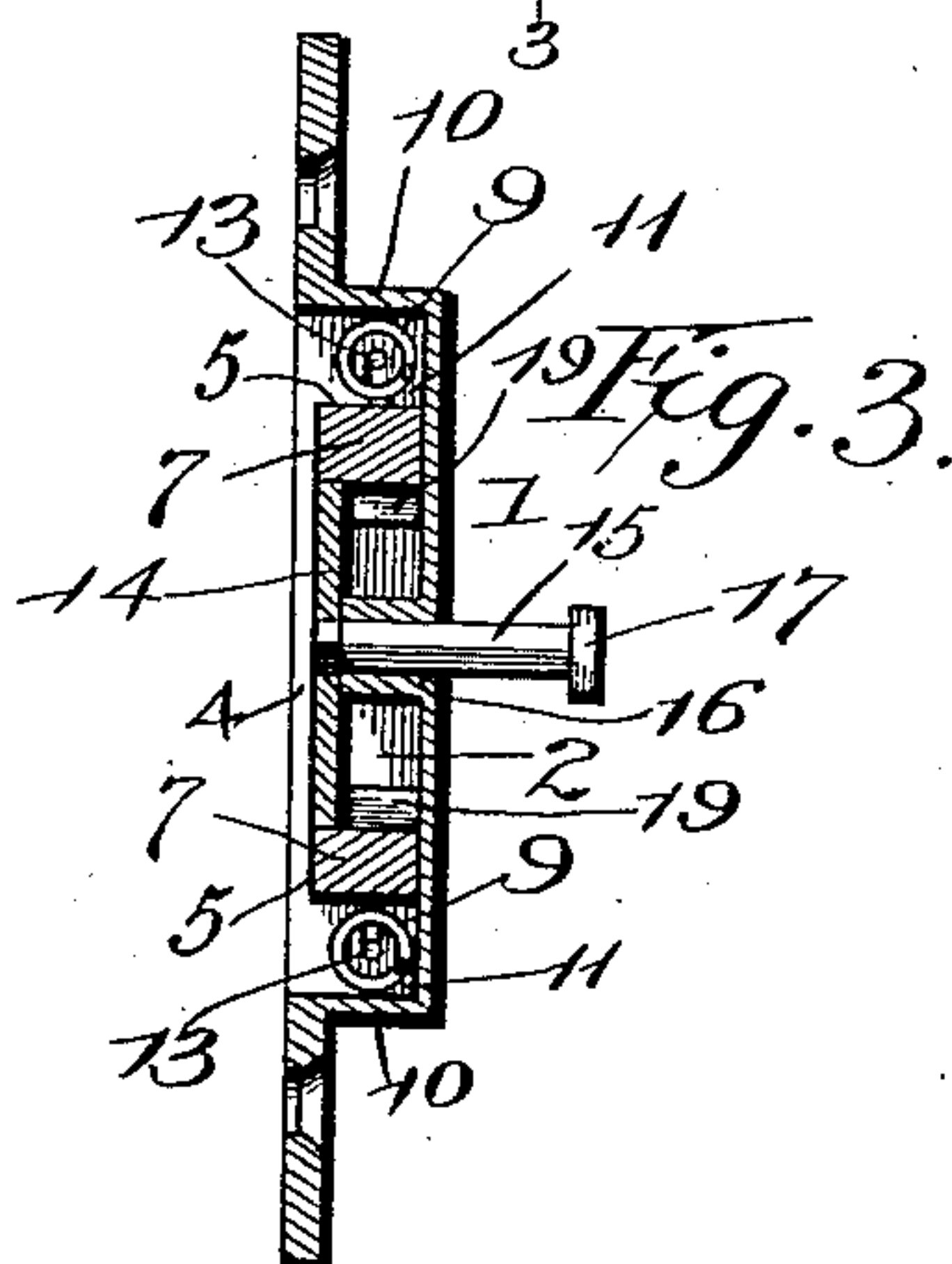
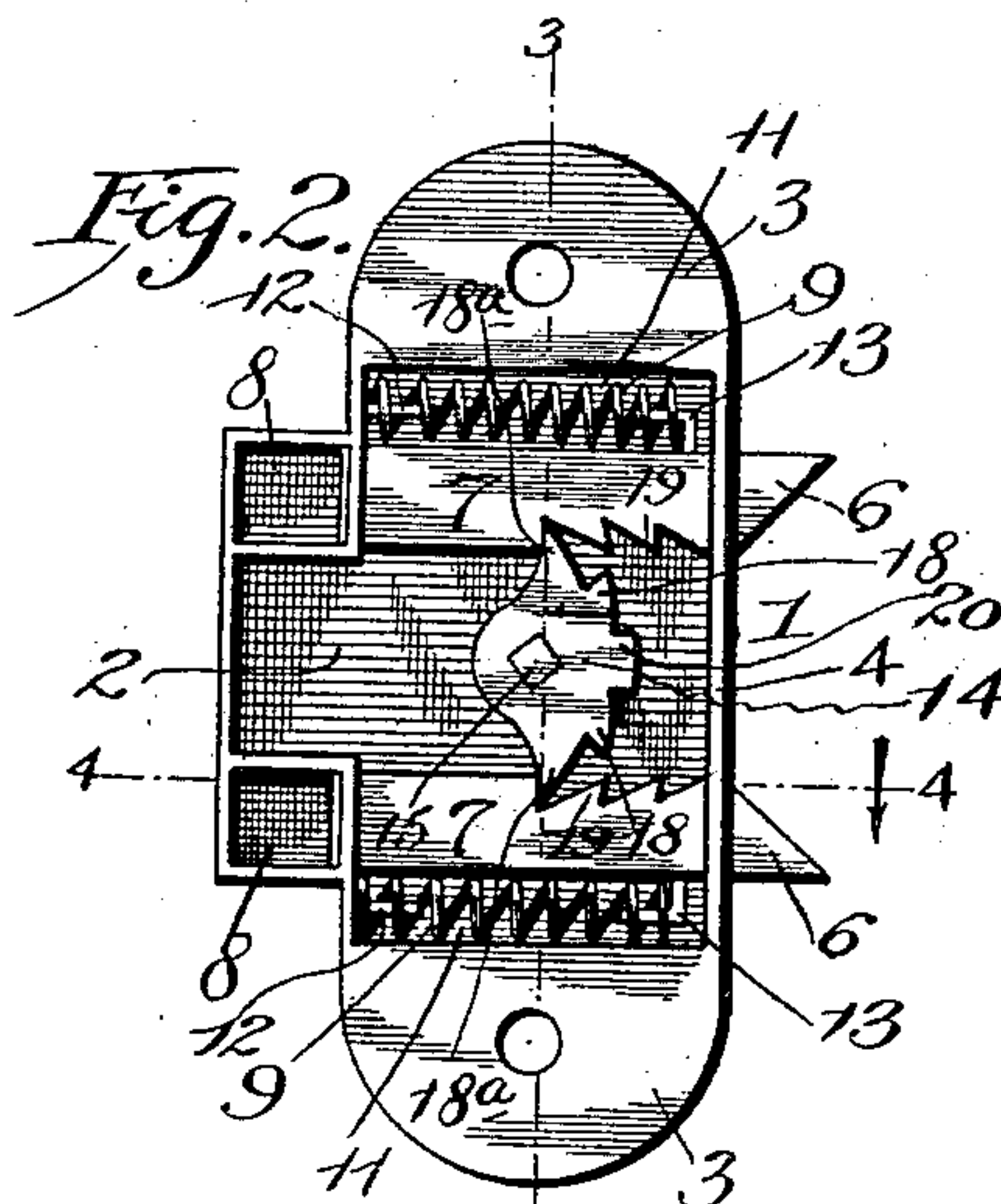
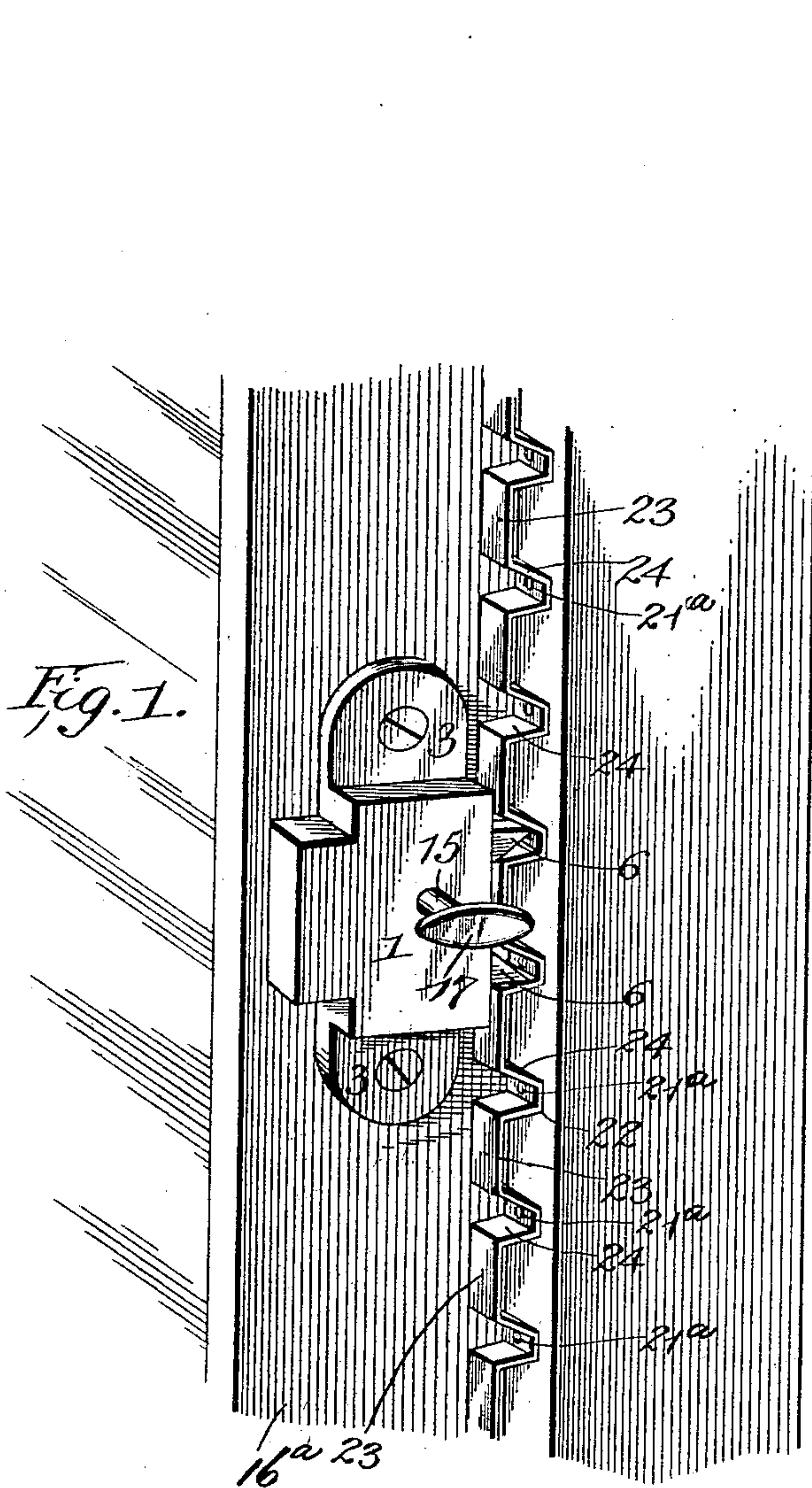
No. 631,014.

Patented Aug. 15, 1899.

S. J. JOHNSTON.
SASH FASTENER.

(Application filed June 8, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL J. JOHNSTON, OF LEESBURG, VIRGINIA.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 631,014, dated August 15, 1899.

Application filed June 8, 1899. Serial No. 719,799. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. JOHNSTON, a citizen of the United States, residing at Leesburg, in the county of Loudoun and State of Virginia, have invented a new and useful Sash-Fastener, of which the following is a specification.

This invention relates to sash-fasteners or sash-locks of that type designed to provide means for locking a sash against movement in either direction at any desired point; and it has for its object to provide a simple, cheap, and reliable device of this character which can be easily and quickly applied to a sliding sash, while at the same time effectually performing its function of locking the sash either in its upward or downward movement after having been adjusted to the required position.

To this end the invention primarily contemplates an improved duplex sash-fastener, the parts of which are so constructed and arranged as to occupy a comparatively small compass, so that the casing thereof may be made sufficiently narrow whereby it may be readily applied to any of the ordinary sliding window-sashes, while at the same time being always in operative position for being manipulated by the operator to permit the sash being either raised or lowered.

A further object of the invention is to provide a novel form of operating device for the two bolts of the fastener, whereby either bolt may be quickly and positively retracted independently of the other bolt, while at the same time providing means for arresting the further inward movement of the bolt being withdrawn or retracted when the beveled end or nose of said bolt reaches an inoperative position, thereby relieving the pressure-spring for said bolt from undue compressive strain.

Another object of the invention is to construct and arrange the several parts of the duplex fastener in such a way that the same may be readily assembled or taken apart, while at the same time being completely housed within the casing, so that there will be no projecting portions excepting the operating-knob for turning the actuating-spindle.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same con-

sists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed. 55

The essential features of the invention forming the subject-matter of this application are susceptible to some modifications without departing from the spirit or scope thereof; but the preferred embodiment of the improvement is shown in the accompanying drawings, in which— 60

Figure 1 is a perspective view of a portion of a window frame and sash having fitted thereto the sash-fastener and fixtures embodying the improvements contemplated by the present invention. Fig. 2 is an inside plan view of the fastener, exposing the working parts housed within the casing. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 2. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 2, showing more plainly the manner in which each of the sliding bolts is guided in its reciprocatory movement. Fig. 5 is a detail in perspective of one of the sliding bolts. Fig. 6 is a detail in perspective of the oscillatory toothed operating-head for the two sliding bolts. 70 75

Like numerals of reference designate corresponding parts in the several figures of the drawings. 80

The working parts of the duplex fastener or lock contemplated by the present invention are housed within a casing 1. This casing is preferably of a substantially rectangular shape and is provided with a single pocket 2, closed at its outer side and open at the inner side, as plainly shown in Fig. 2 of the drawings. The open inner side of the pocket 2 of the casing may be closed by a cap-plate, if found desirable; but this is usually unnecessary for the reason that the open side of the casing is placed against the stile of the window-sash, and is consequently closed thereby, so that when the casing is applied in position on the sash all of the working parts of the fastener excepting the operating-knob are completely housed and concealed from view. 85 90 95

To provide for the convenient attachment of the casing 1 to the stile of the window-sash, the said casing is provided at opposite sides thereof with the oppositely-located securing-flanges 3, adapted to receive the screws or other fasteners for holding the casing in place, 100

and the latter is further provided in the end flange 4 thereof, which forms one wall of the pocket 2, with a pair of spaced guide-openings 5, which receive the beveled outer ends 6 of the oppositely-arranged sliding locking-bolts 7. The sliding locking-bolts 7 are arranged to work in parallel planes within the pocket 2 of the casing and are spaced a sufficient distance apart to permit of the use of a common operating device for retracting or withdrawing either of the same, as will be hereinafter more fully explained, and to provide for properly guiding the bolts 7 within the casing, so that the same will always move in fixed planes, the inner ends of said bolts work within a keeper-socket 8, offset to project from the side of the casing-pocket 2 opposite the side flange 4, having the guide-openings 5 for the outer beveled ends 6 of the bolts. The offset keeper-sockets are of a rectangular configuration to conform to the cross-sectional shape of the sliding bolts and are of a sufficient depth or length to accommodate the full play of the bolts, so that the same will always be held within the sockets and guide-openings 5, thereby being held to a fixed reciprocation and positively prevented from twisting or turning in an axial direction.

The bevels or inclines 6 at the outer ends of the two bolts 7 are disposed toward each other, so that the bolts will occupy a reverse relation with respect to each other and one will operate to prevent upward movement of the sash, while the other bolt will operate to prevent downward movement of the sash, as will be readily understood by those familiar with this class of devices. The said outer beveled ends 6 of the two sliding bolts 7 are normally projected beyond the side flange 4 of the casing by means of the coil pressure-springs 9, which are arranged longitudinally of the bolts and entirely at one side thereof, as plainly illustrated in Fig. 2 of the drawings. Each of the sliding bolts is spaced from the adjacent parallel wall 10 of the casing proper, 2, so as to form an intermediate spring-recess 11, which accommodates therein the coil-spring for said bolt, and the said spring is retained in operative position within this recess by means of the retaining pin or stud 12, projected inwardly from one side of the casing-pocket, and a substantially L-shaped hook 13, carried by and projecting laterally from the inside of the sliding bolt. The holding-hook 13 of each sliding bolt points toward the retaining pin or stud 12, associated therewith, so that one end of the coil-spring 9 will fit over said pin or stud, while the other end of the spring fits over the point of the hook 13, thereby providing simple and efficient means for always holding the spring for each bolt in working position within the casing, while at the same time permitting the ready removal and replacing of the spring whenever necessary.

The pressure of the coil-springs 9 is normally exerted in an outward direction to pro-

vide for the normal projection of the outer beveled ends 6 of the sliding bolts beyond the side flange 4 of the casing, and to secure the retraction or withdrawal of either bolt independently of the other there is employed an oscillatory operating-head 14, arranged to work within the casing-pocket 2 in the space between the oppositely-located bolts 7. The said oscillatory operating-head 14 is made fast on the inner end of the knob-spindle 15, turning in a bearing 16, projecting within the casing-pocket, and carrying at its outer end an operating-knob 17, which is exposed beyond the outside of the casing, so as to be easily grasped between the fingers of the operator to provide for turning the spindle in either direction, according to which bolt it is desired to retract.

The operating-head 14 is preferably in the form of a segment of a disk and is provided at one side of its axis with a series of engaging teeth 18, arranged on the arc of a circle and preferably in the form of ratchet-teeth, to engage with correspondingly-shaped teeth 19, formed in the inner facing edges of the sliding bolts 7. The terminal teeth on the operating-head 14 (designated by the numeral 18^a) are disposed diametrically opposite to each other, so as to be normally in engagement with one of the teeth 19 of both of the opposite bolts 7, so that the slightest movement of the operating-spindle in either direction will have an immediate response in moving one of the sliding bolts. By reason of arranging the engaging teeth 18 of the operating-head on the arc of a circle only the terminal teeth 18^a normally engage with one of the teeth of both locking-bolts, but as said operating-head is turned in either direction toward one of the bolts the other engaging teeth contiguous to the terminal tooth engaging said bolt successively come into engagement with the teeth of the bolt, and thereby provide for the steady and positive retraction thereof, while the ratchet shape of the engaging teeth permit the same turning out of mesh with the teeth of the opposite bolt not being retracted, as will be readily understood.

In addition to the main engaging teeth 18 the oscillatory operating-head 14 is provided at a point centrally between the terminal teeth 18^a with a squared stop-tooth 20, which tooth when the beveled end or nose of either bolt is sufficiently retracted engages against said bolt and arrests further inward movement thereof, thereby relieving the spring in said bolt from undue compressive strain.

As already explained, the casing 1, carrying the working parts of the sash-fastener, is adapted to be fitted upon a sliding sash, adjacent to one of the side edges thereof, preferably in the position shown in Fig. 1 of the drawings, in which the reference-number 16^a designates the sash. In this position the outer beveled nose of the sliding bolts project in proximity to the pulley-stile of the window-frame, so as to cooperate with the

toothed rack 22. This toothed rack is preferably constructed as shown in Fig. 1 of the drawings, and consists of a continuous metal strip bent transversely at regularly-spaced intervals to form offstanding portions or projections 23 and inwardly-extending portions 24. The inwardly-extending portions 24 of the rack-bar or strip form engaging notches, which are provided with reversely-inclined walls to permit of the beveled ends of the bolts riding out of the same in a manner to be presently explained, and the bases of said inwardly-extending portions or notches 24 receive suitable fasteners 21^a, which provide fastening means for securing the rack to the window-frame. At this point it will be further observed that the depressions or engaging notches 24 of the rack-bar or strip are spaced a distance apart equal to the distance between the projecting ends of the bolts, so that one bolt may lie in one of the notches while the other bolt lies in the adjacent notch. With the parts in this position the sash is locked against movement in either direction.

When it is desired to raise the sash, the knob-spindle is turned in the direction to cause the withdrawal of the upper bolt in the manner hereinbefore explained, and upon moving the sash upwardly the beveled end or nose of the lower bolt will coöperate with the inclined walls at the upper sides of the notches 24, and thereby freely ride over the intermediate projecting portions 23, while at the same time operating to prevent downward movement of the sash when the upward movement thereof is arrested. To lower the sash, the lower bolt is withdrawn and the reverse operation takes place.

In further explanation of the action of the fastener it may be stated that an essential feature thereof is the fact that the bolts become automatically locked with the notches of the rack-bar, so that at whatever point the sash is stopped, either in raising or lowering the same, it at once becomes automatically

locked in position without any manipulation whatever on the part of the operator.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described sash-fastener will be readily apparent to those skilled in the art without further description, and it will be understood that changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim is—

1. A sash-fastener comprising a casing, a pair of spring-projected, toothed locking-bolts, slidably mounted in the casing in parallel planes, and an oscillatory toothed operating-head mounted within the casing between the bolts, and normally engaged with both of the same, said operating-head being provided at an intermediate point of its toothed portion with a stop-tooth adapted to engage with either bolt to arrest the retraction thereof, substantially as set forth.

2. A sash-fastener comprising a casing having alined guides, a pair of sliding locking-bolts mounted in the casing and working in the guides thereof, each of said bolts having an offstanding holding-hook, and spaced from the adjacent wall of the casing, a retaining pin or stud arranged at one end of the recess between each bolt and the adjacent wall of the casing, and a coil-spring located in the said recess at one side of the bolt and respectively engaging with the retaining pin or stud and said holding-hook, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL J. JOHNSTON.

Witnesses:

JOHN H. SIGGERS,
NELLIE VAN METRE.