

No. 840,317.

PATENTED JAN. 1, 1907.

J. L. GREYHER.
SASH FASTENER.

APPLICATION FILED OCT. 10, 1905.

Fig. 1.

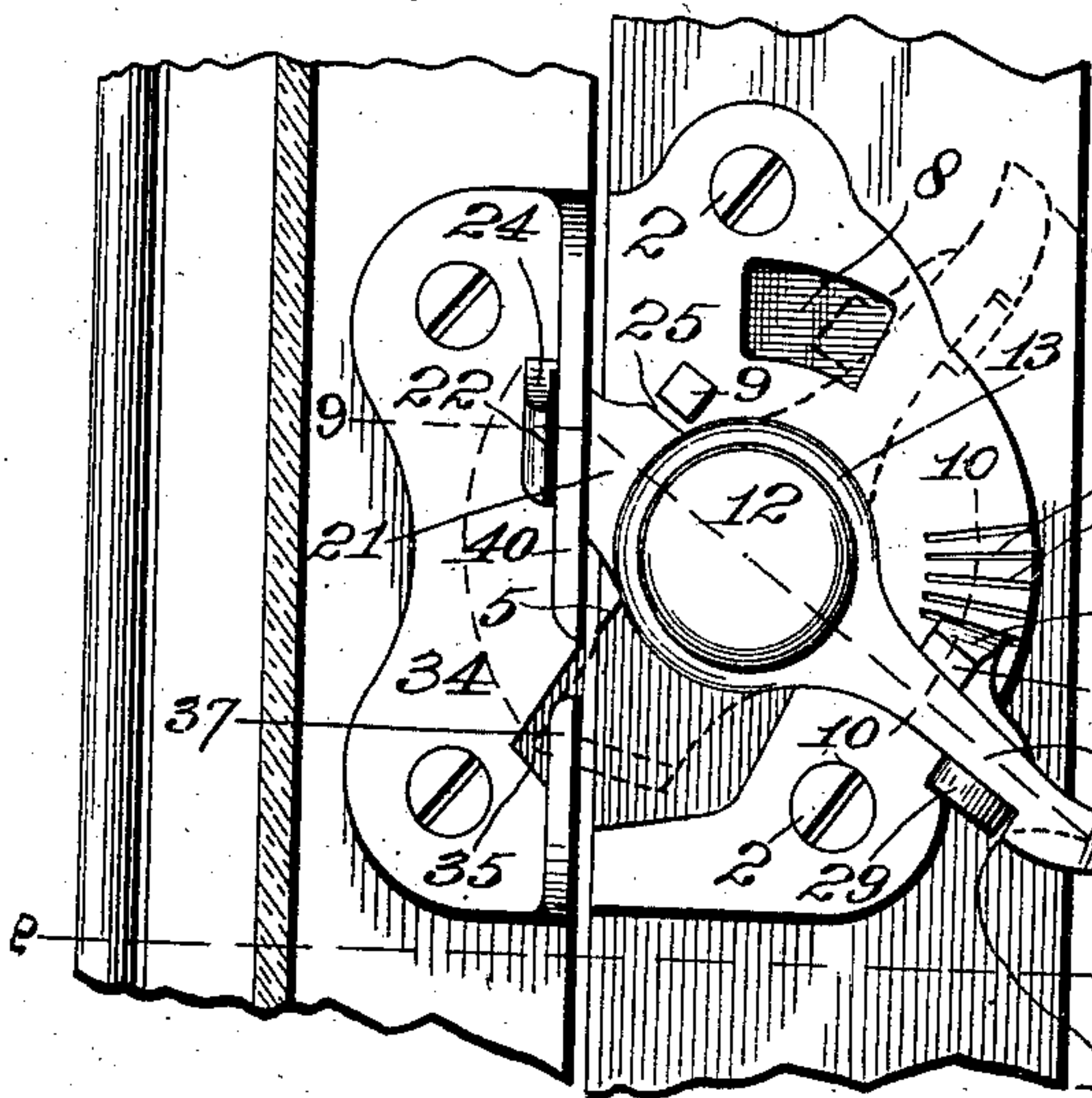


Fig. 4.

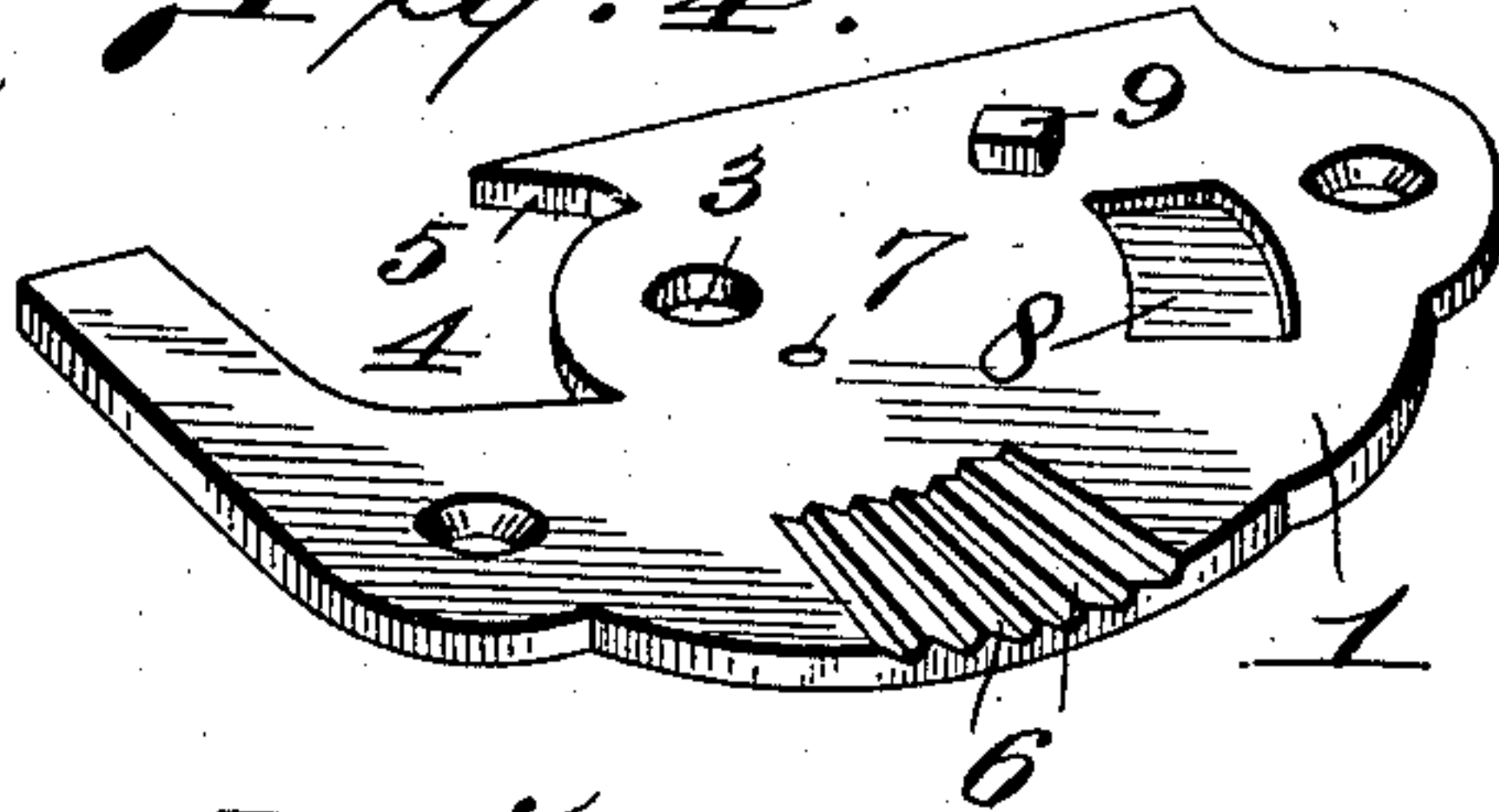


Fig. 5.

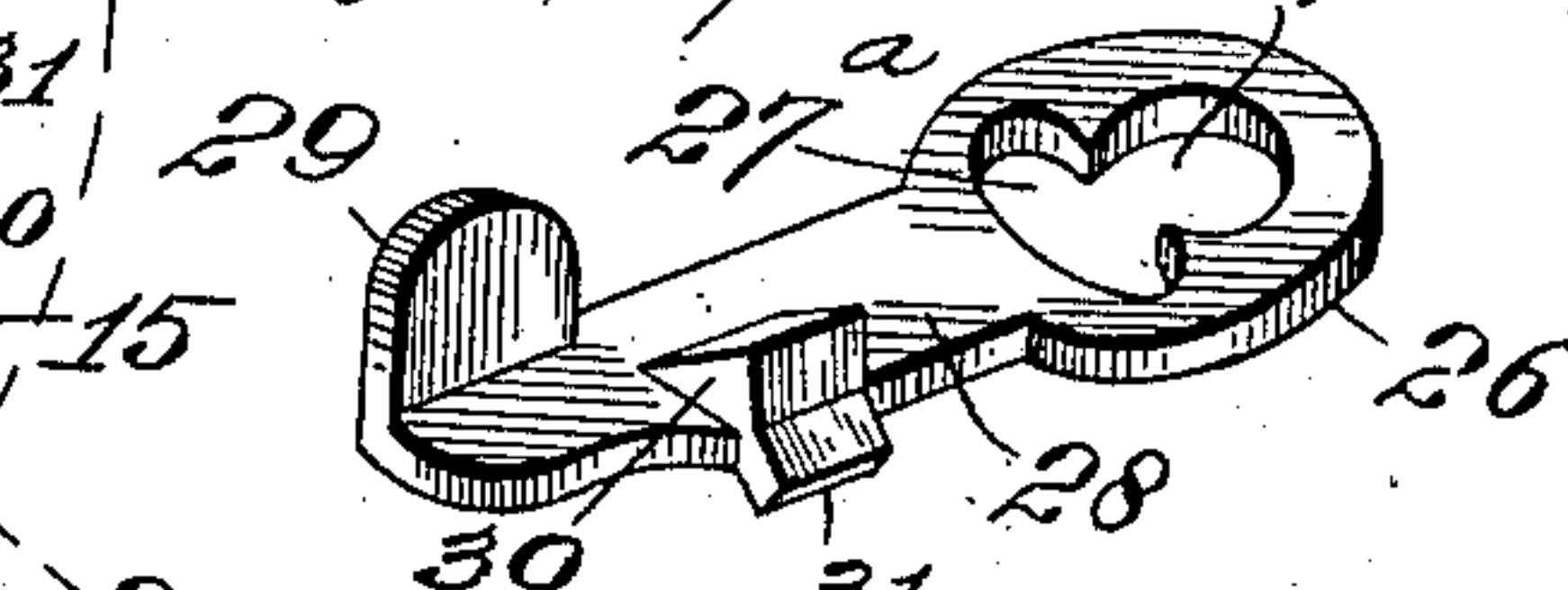


Fig. 6.

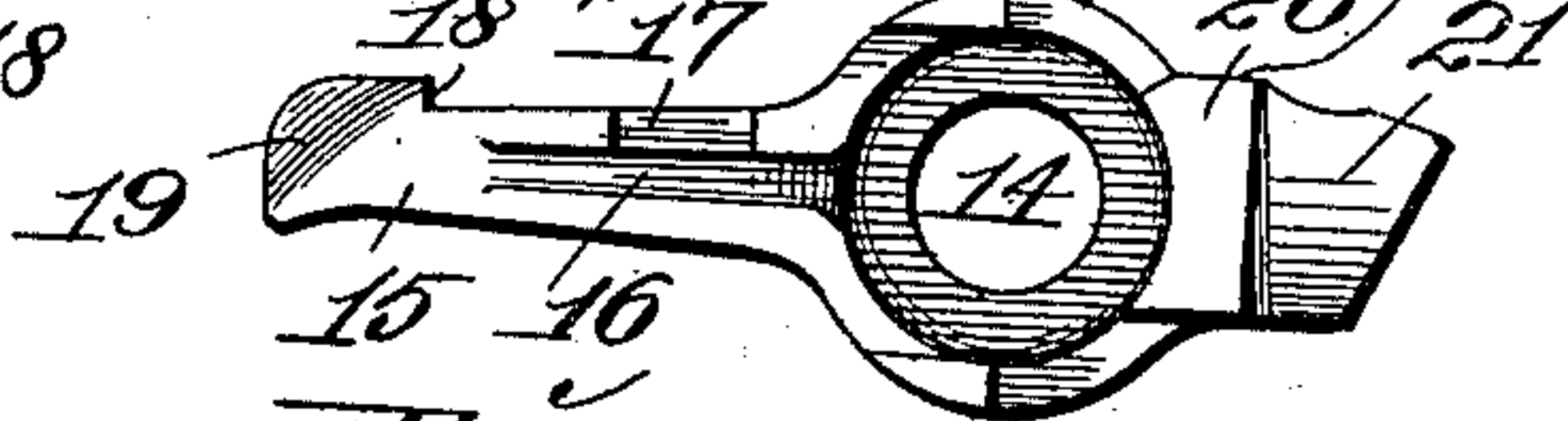


Fig. 7.

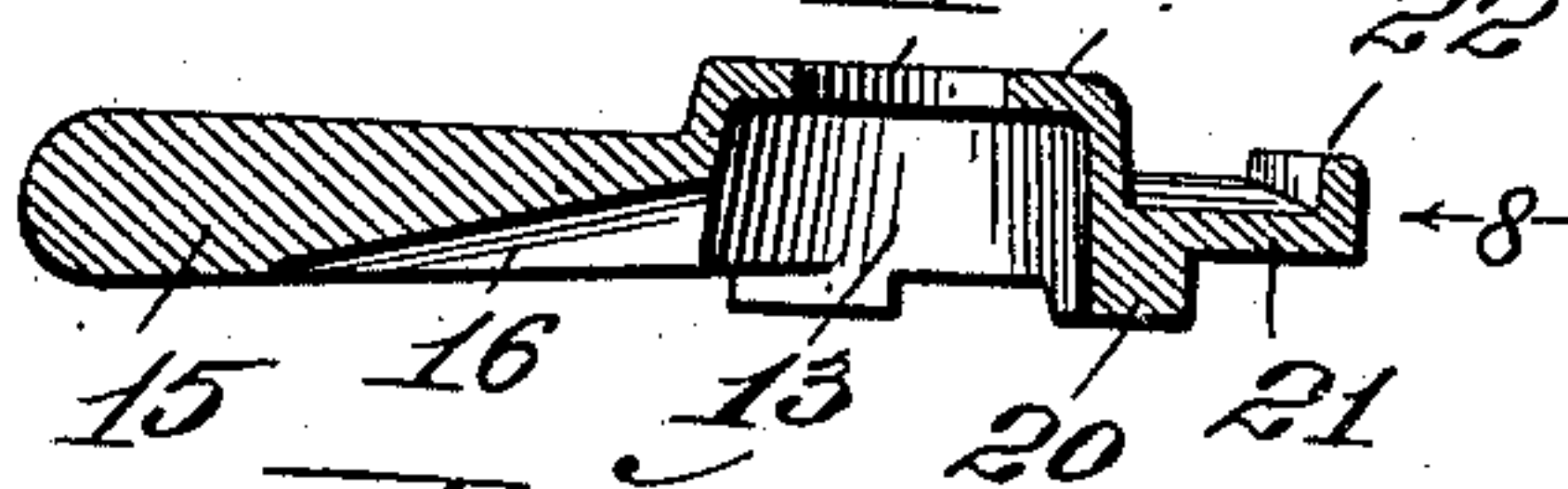


Fig. 8.

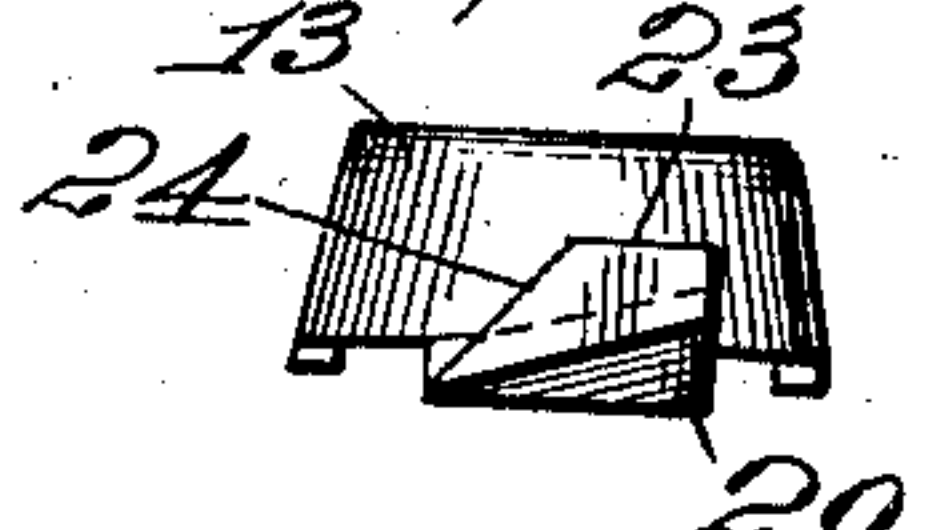


Fig. 9.

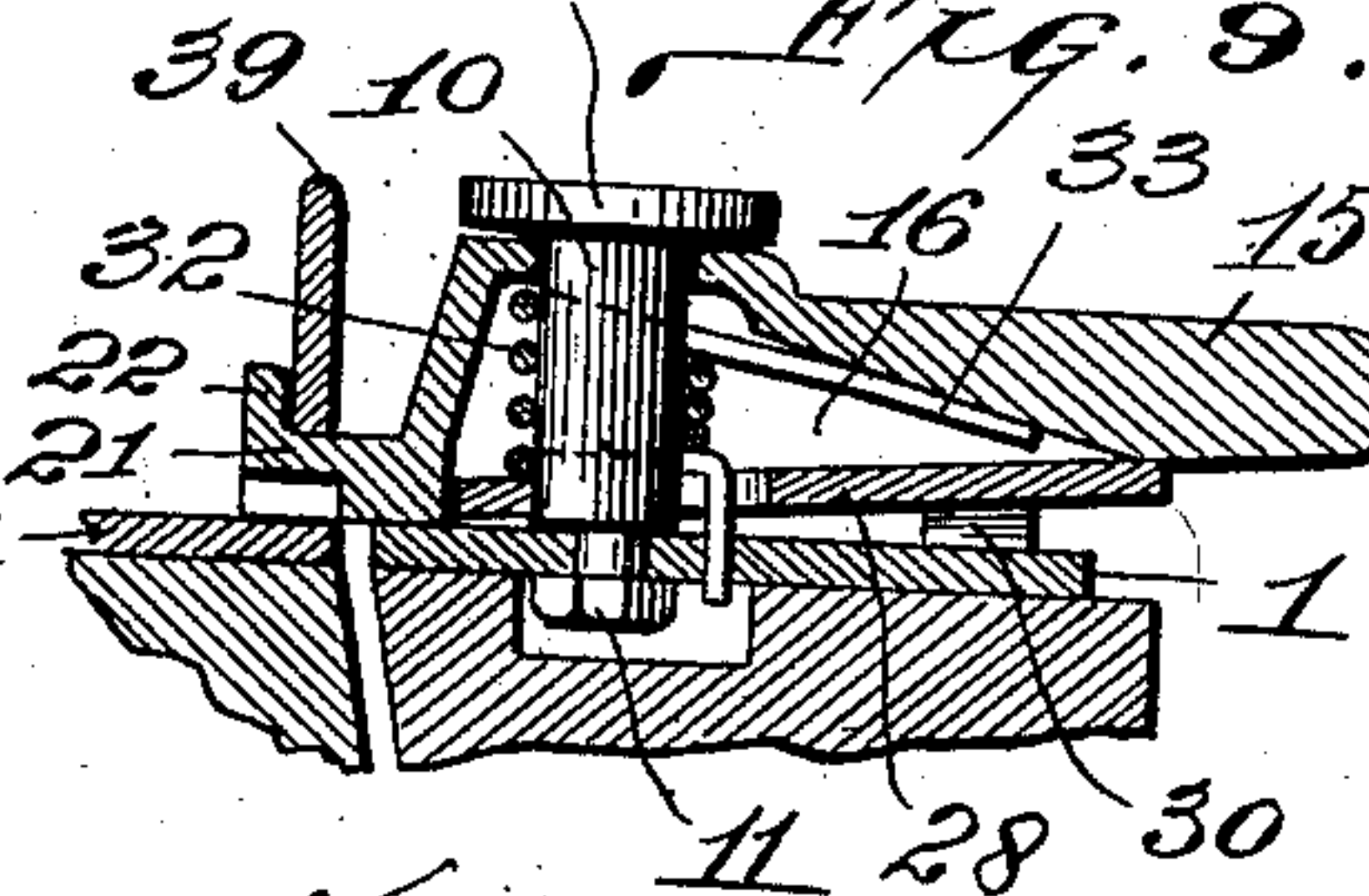


Fig. 10.

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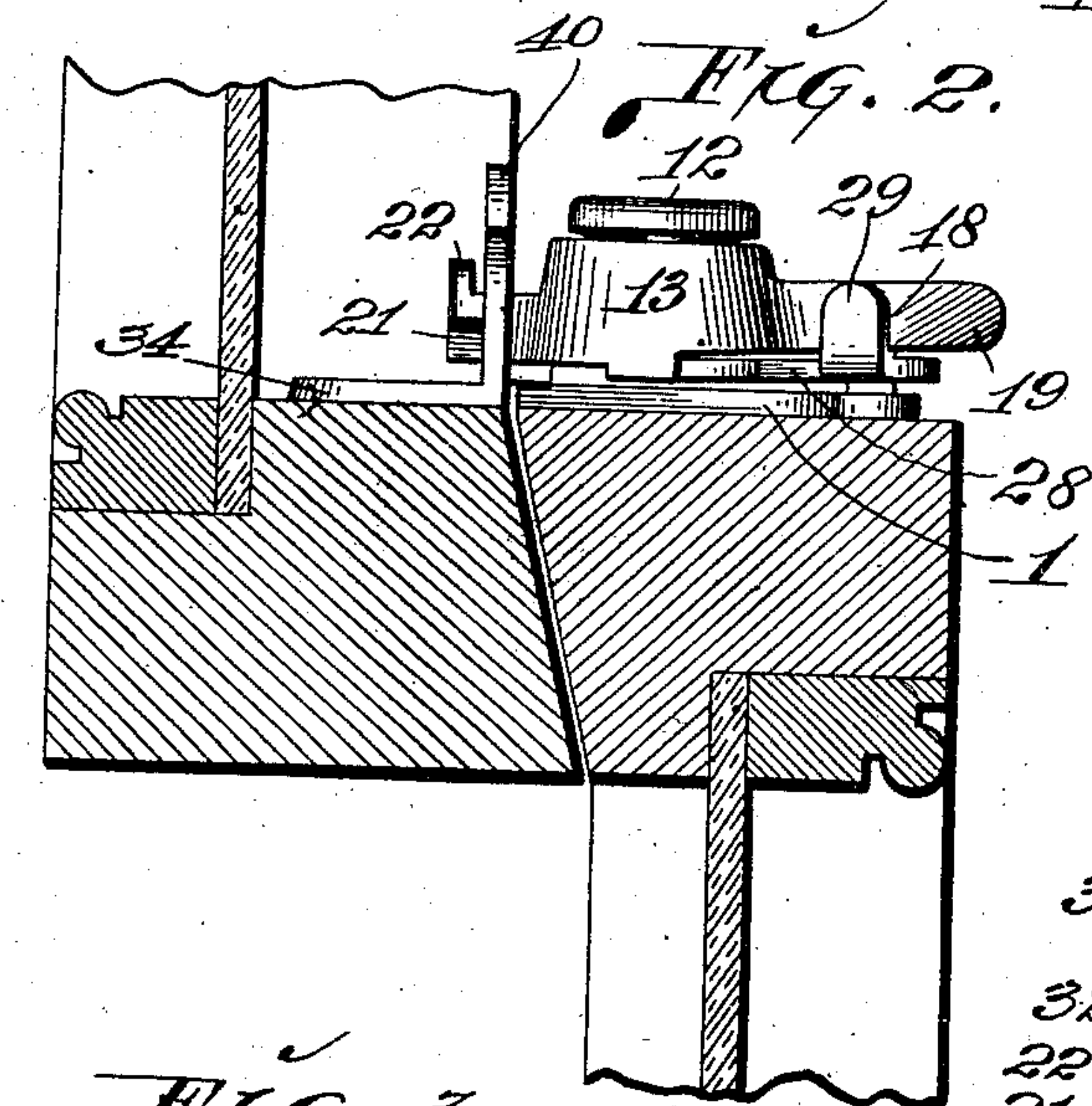
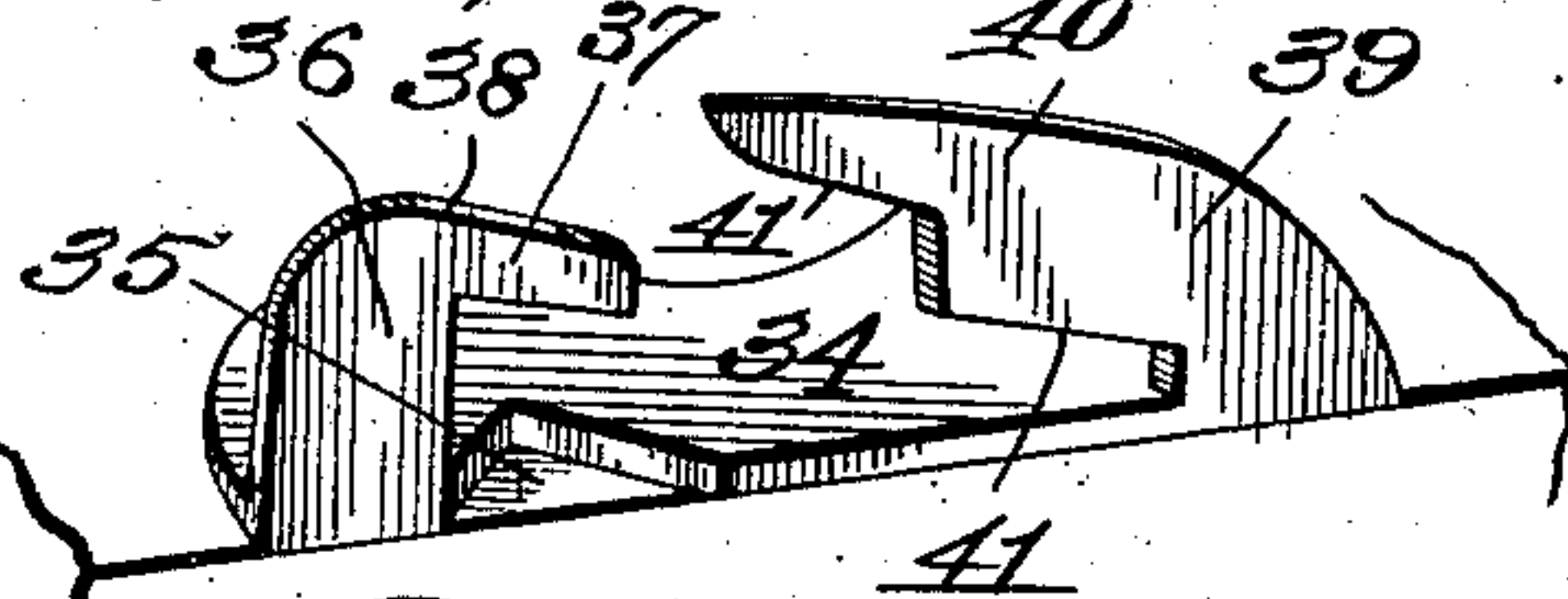


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN L. GREETHER, OF ST. LOUIS, MISSOURI.

SASH-FASTENER.

No. 840,317.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed October 10, 1905. Serial No. 282,192.

To all whom it may concern:

Be it known that I, JOHN L. GREETHER, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Sash-Fasteners, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a sash-fastener; and the object of my invention is to construct a simple, inexpensive, and practically automatic sash-fastener which will very effectively lock the sash together and which cannot be opened from the outside of the window by inserting a narrow instrument, such as a knife-blade, between the meeting-rails of the sash to manipulate the locking-arm.

A further object of my invention is to provide a sash-fastener with a spring-actuated locking-arm which may be moved into an unlocked position when it is desired to raise or lower the window-sash, which locking-arm will be automatically thrown into a locked position when the sash are closed.

To the above purposes my invention consists in certain novel features of construction, which will be hereinafter more clearly set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved sash-fastener in position upon the meeting-rails of a pair of sashes. Fig. 2 is a vertical section taken on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the plate that is seated upon the lower rail of the upper sash and with which the locking-arm engages. Fig. 4 is a perspective view of the base-plate of my improved sash-fastener. Fig. 5 is a perspective view of a latch-plate that operates to hold the locking-arm against movement in one direction. Fig. 6 is a plan view looking at the under side of the locking-arm. Fig. 7 is a vertical section taken longitudinally through the center of the locking-arm. Fig. 8 is an end elevation of the locking-arm looking in the direction indicated by the arrow 8, Fig. 7. Fig. 9 is a transverse section taken on the line 9 9 of Fig. 1. Fig. 10 is a detail section taken on the line 10 10 of Fig. 1.

Referring by numerals to the accompanying drawings, 1 indicates the base-plate, which is preferably secured by screws 2 to the top surface of the upper rail of the lower

sash. Formed in the approximate center of this plate is an aperture 3, and a portion of the plate to the left of this aperture is cut away, as indicated by 4, and a shoulder 5 is formed on the side of this cut-away portion 4 immediately behind the aperture 3, which shoulder is arranged at an angle of approximately forty-five degrees relative a transverse line passing through the center of the aperture. Immediately in front of the aperture and in the top surface of the plate 1 is formed a series of notches 6, and formed through the plate at a point between these notches and the apertures 3 is a recess 8, and between said recess and the rear side of the plate is located a lug 9.

10 indicates a post the lower end of which is reduced in diameter and which passes through the aperture 3 and receives a nut 11 on the under side of the plate 1. The upper end of this post 10 is provided with a head 12.

The locking-arm of my improved sash-fastener comprises a cylindrical spring-housing 13, having an open lower end and provided in its top with an aperture 14, through which the post 10 passes. Formed integral with one side of this housing is an arm 15, in the under side of which is formed an inclined groove 16, that leads outwardly and downwardly from the interior of the housing 13. Formed in the under side of one of the webs to one side of this groove 16 is a notch 17, the lowerface of which inclines upwardly from the inside of said web to the outside. The outer end of this arm 15 is provided on its left-hand side with an outwardly-projecting shoulder 18, and the side and end of the arm 15 beyond this shoulder are beveled or inclined, as indicated by 19. Formed integral with the side of the housing 13, opposite from the arm 15, is a forwardly-projecting lug 20, and projecting forwardly from this lug is a short inclined plate 21, the outer edge of which is provided with an integral upwardly-projecting lip 22, the top of which is formed perfectly horizontal, as indicated by 23, and the front edge of which is beveled or inclined, as indicated by 24. One side of the lug 20 is provided with a straight vertical face 25, which is adapted to engage behind the shoulder 5 when the locking-arm is thrown into an unlocked position.

The latch-plate of my improved sash-fastener comprises a circular plate 26, which is of such a size as that it snugly fits in the lower portion of the spring-housing 14, and it being provided with a centrally-arranged aperture

27, through which the post 10 passes. A curved slot 27^a is formed in the plate to one side of the aperture 27. An arm 28 is formed integral with the plate 26 and extends outwardly beneath the arm 15, and formed integral with the outer end of the arm 28 is an upwardly-projecting lug 29, that engages the side of the arm 15 immediately in front of the shoulder 18. The arm 28 is provided with an upwardly-projecting lug 30, which normally occupies the notch 17 in the under side of the arm 15, and the top side of said lug is inclined to correspond with the inclination of said notch 17. Formed integral with the right-hand edge of the arm 28 is a downwardly-projecting tooth 31, which is adapted to engage in the notches 6.

32 designates a coil-spring which is wound upon the post 10 and its lower end being bent downwardly and passing through the slot 27^a and also through the aperture 7 in the base-plate 1. The opposite end of this coil-spring extends outwardly from the post 10, as indicated by 33, and said end occupies the inclined groove 16 in the under side of the arm 15. The normal tendency of this spring is to retain the locking-arm in a locked position and to swing the outer end of the arm 15 upwardly, owing to the pressure of the extended portion of said spring 33 against the under side of the arm 15. The locking member that is secured to the lower rail of the upper sash comprises a plate 34, that is secured to the sash-rail by screws or in any suitable manner, and formed in the front edge of this base-plate 34 is a notch 35, that is immediately in front of the cut-away portion 4 in the base-plate 1. Formed integral with the edge of the plate 34 to the left of the notch 35 is an upwardly-projecting plate 36, that is provided with an integral arm 37 at its upper end, which projects toward the right and which is provided with an inclined top edge 38. Formed integral with the front edge of the plate 34, at the right hand thereof, is an upwardly-projecting plate 39, and extending to the left therefrom is an integral arm 40, having an inclined lower edge 41.

When my improved sash-fastener is in a locked position, the outer end of the plate 21 is engaged beneath the arm 40 against the plate 39, and the lip 22 bears against the rear side of said plate 40. The spring maintains the locking-arm in this position and also causes the rear end of the arm 15 to swing upwardly to its limit of movement. Should a thin instrument, such as a knife-blade, be inserted between the meeting-rails of the sash in an attempt to engage the plate 21 and to bear thereupon to swing the locking-arm, the reverse movement of the arm 15 will cause the inclined face of the notch 17 to bear upon the inclined top surface of the lug 30, and as a result the tooth 31 will be forced

downwardly into one of the notches 6, and thus the locking-arm will be prevented from further movement, for the reason that the lug 30 is of sufficient height to prevent the arm 15 from riding thereover. Thus the latch-plate prevents the locking-arm from being manipulated from the exterior of the window.

When a person on the inside of the window desires to unlock the sash-fastener, the thumb is placed upon the inclined surface 19 on the outer under side of the arm 15 and also against the lug 29, and as pressure is applied to the locking-arm and latch-plate by the thumb said parts move together, and the natural upward pressure against the inclined face 19 will cause the tooth 31 to ride over the notches 6, and as a result the locking-arm and latch-plate are swung around into a position shown by dotted lines in Fig. 1, or until the shoulder 25 passes over and behind the shoulder 5. The upward pressure on the rear end of the arm 15 tends to throw the forward end of the locking-arm downwardly. Consequently when the shoulder 25 passes the shoulder 5 it will drop behind said shoulder 5, and thus the locking-arm will be maintained in an unlocked position against the pressure of the spring 32. The tooth 31 at this time occupies the recess 8, and the forward end of the plate 21 occupies the notch 35 in the plate 34 and is positioned immediately beneath the arm 37.

When the sash-fastener is unlocked and the upper sash is lowered or the lower sash is elevated, the projecting plate 21 does not interfere with the movement of the sash relative to each other—that is to say, it does not project far enough beyond the edge of the lower sash to come into contact with the top rail of the upper sash. Furthermore, when the sash-fastener is unlocked, as shown by dotted lines in Fig. 1, and the upper sash is lowered or the lower sash is elevated the inclined face 24 on the lip 22, carried by the plate 21, will bear against the under side of the arm 37, which is slightly beveled on its under side, and will force the locking-arm inwardly, whereby it is permitted to pass the arm 37. It should be noted that during this operation—that is, the inward movement of the locking-arm incident to its striking the arm 37—the arm 15 is permitted to move outwardly, for the reason that the lug 31 is permitted to move freely a sufficient and limited distance in the recess 8. After the locking-arm has passed the arm 37, as above described, it returns to its normal unlocked position, as indicated in dotted lines, Fig. 1, and heretofore described.

When the sash are closed, so as to bring the meeting-rails together, the projecting end of the plate 21 will strike against the inclined top surface 38 of the arm 37, and as a result the shoulder 25 is disengaged from the shoulder 5, and the spring 32 will then immediately

act to return the locking-arm and latch-plate into locked positions, and the plate 21 will be deflected downwardly by the inclined faces 41, and the locking-arm will thus automatically resume its locked position. Should the spring 32 become broken or lose its resiliency, the lock may be operated by hand. The principal parts of my improved sash-fastener may be cast or stamped out of sheet metal. The head 12 is of sufficient width to strike the top rail of the upper sash when the lower sash is moved to the top of the window-frame to prevent the accidental unlocking of the fastener.

I claim—

1. In a sash-fastener, a base-plate, a spring-actuated locking-arm mounted for rotation on the base-plate, a locking-plate secured to the opposite sash, a hook formed integral with said locking-plate, the under side of which hook is inclined, a latch-plate located beneath and movable with the locking-arm and adapted to engage with the base-plate at different points to lock said arm against rotation in one direction by the application of any vertical or lateral pressure applied to the locking-arm; substantially as specified.

2. In a sash-fastener, a base-plate secured to one sash, a locking-plate secured to the opposite sash, a locking-arm mounted for rotation upon the base-plate and adapted to engage the locking-plate, and means carried by the locking-arm for locking it at different points on the base-plate against movement in one direction; substantially as specified.

3. In a sash-fastener, a base-plate secured to one sash, a locking-plate secured to the opposite sash, a spring-actuated locking-arm mounted for rotation upon the base-plate and adapted to engage the locking-plate, and a latch-plate arranged beneath and movable with the locking-arm and arranged to lock the locking-arm against rotary motion in one direction; substantially as specified.

4. In a sash-fastener, a base-plate secured to one sash, a locking-plate secured to the opposite sash, a spring-actuated locking-arm arranged for rotation upon the base-plate and adapted to engage the locking-plate, means whereby the locking-arm is held locked against rotation in one direction at different

points, and means formed in the base-plate whereby the locking-arm is held in an unlocked position thereon and in position to be automatically released to engage the locking-plate when the sashes are closed; substantially as specified.

5. In a sash-fastener, a base-plate secured to one sash, a locking-plate secured to the opposite sash, a post fixed to the base-plate, a locking-arm pivotally arranged on the post and adapted to engage the locking-plate, a spring mounted upon the post and adapted to engage the locking-arm, and a latch-plate pivotally mounted upon the post and arranged to hold the locking-arm against rotation in one direction at different points; substantially as specified.

6. In a sash-fastener of the class described, a base-plate, a spring-actuated locking-arm arranged for rotation thereon, a series of notches formed in said base-plate, means carried by the locking-arm for engaging in said notches to hold the locking-arm at different points against rotation in one direction, a notch formed in one side of the base-plate in which the forward end of the locking-arm engages by being slightly depressed when in an unlocked position; substantially as specified.

7. In a sash-fastener of the class described, a base-plate adapted to be secured to the lower sash, a spring-actuated locking-arm pivotally arranged for rotation thereon, which arm is arranged to be slightly tilted upon its pivot-point, a notch formed in the base-plate in which the forward end of the locking-arm is engaged to hold said arm in an unlocked position and in position to be automatically released, a locking-plate adapted to be secured to the upper sash, said plate being provided with an arm with an inclined top surface for automatically releasing said locking-arm when the sash are closed; substantially as specified.

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

JOHN L. GREYHER.

Witnesses:

EDWARD E. LONGAN,
M. P. SMITH.