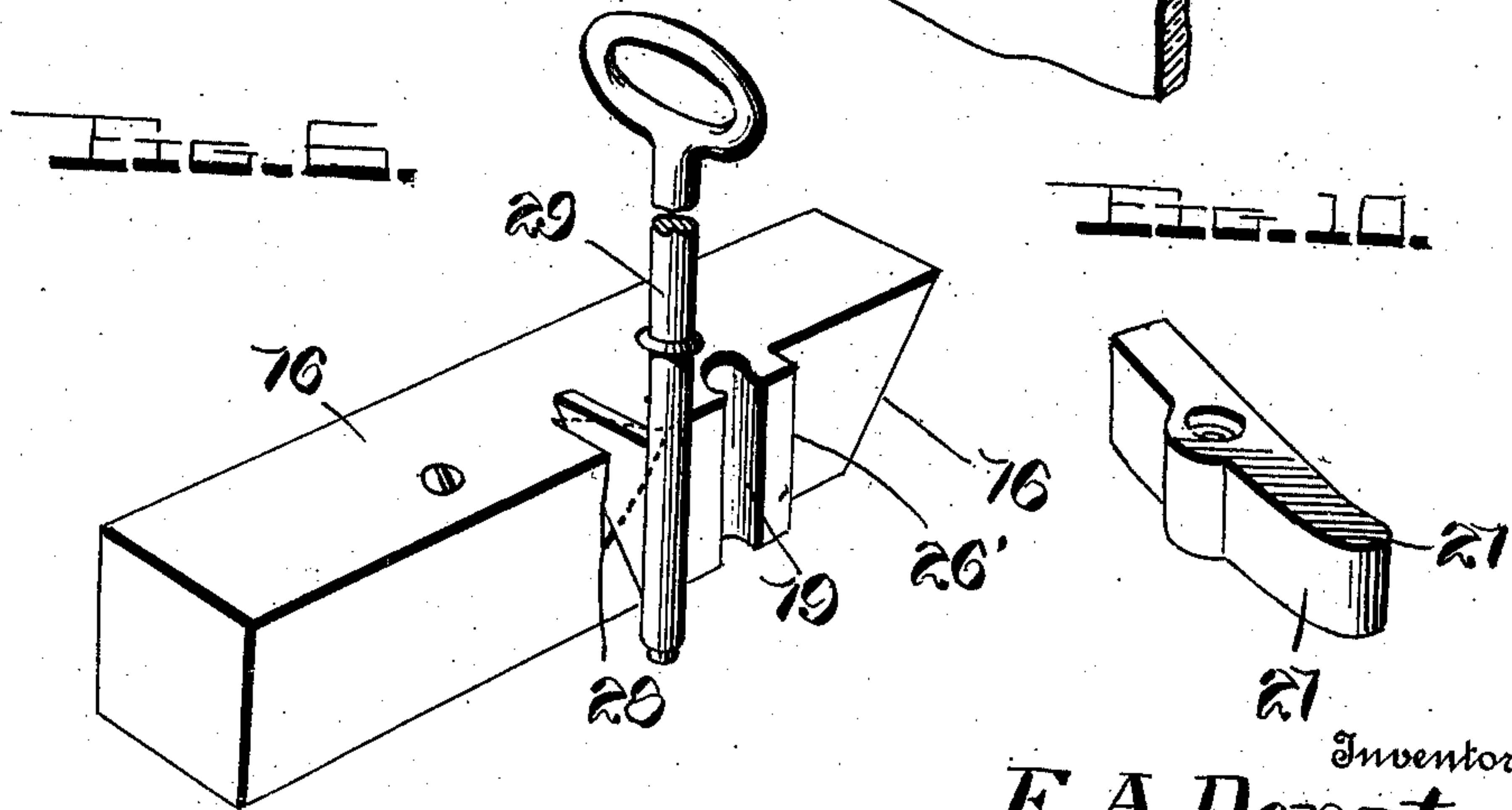
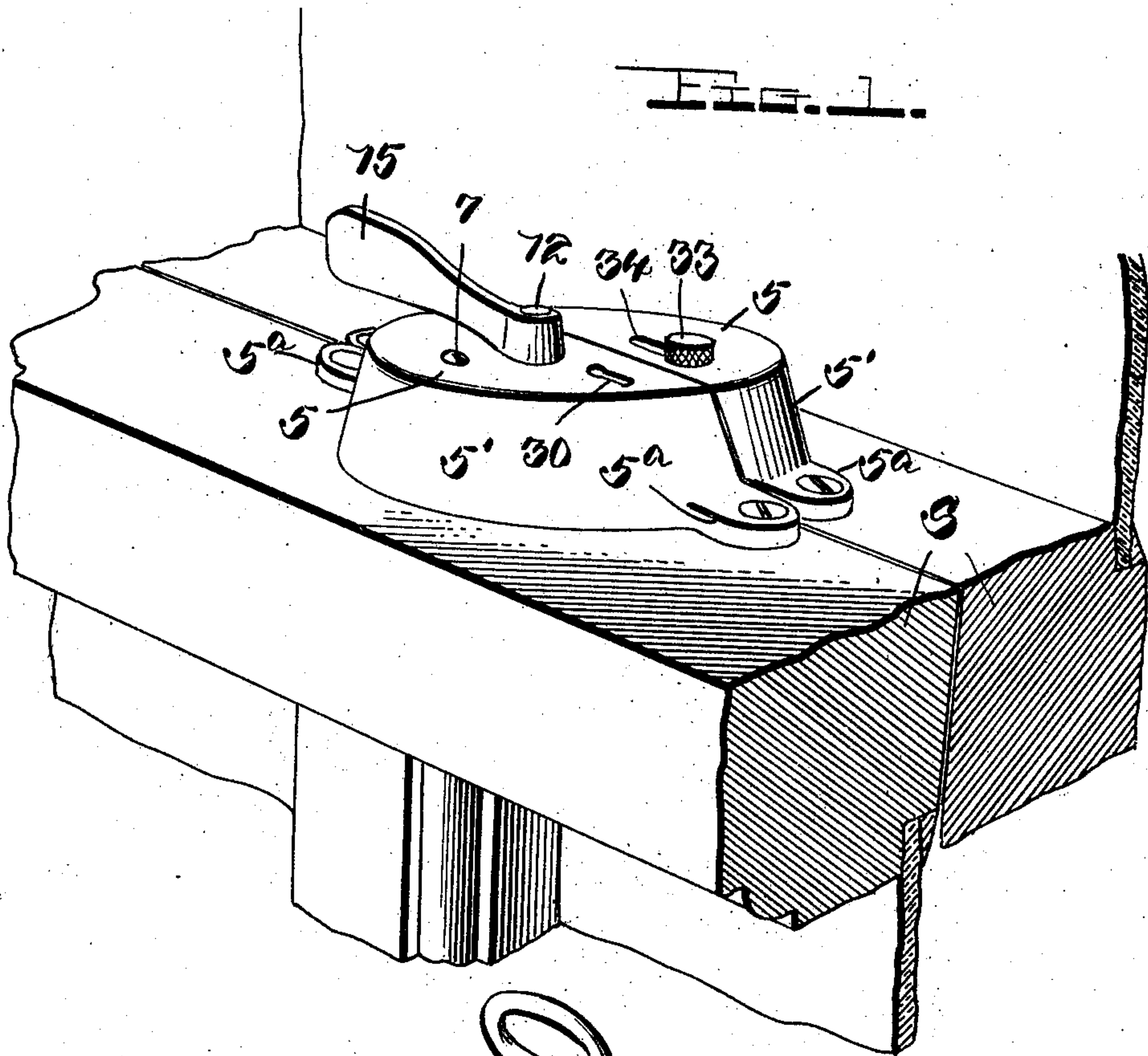


986,555.

E. A. DONAT.
SASH LOCK.
APPLICATION FILED OCT. 12, 1910.

Patented Mar. 14, 1911.
3 SHEETS—SHEET 1.



Witnesses

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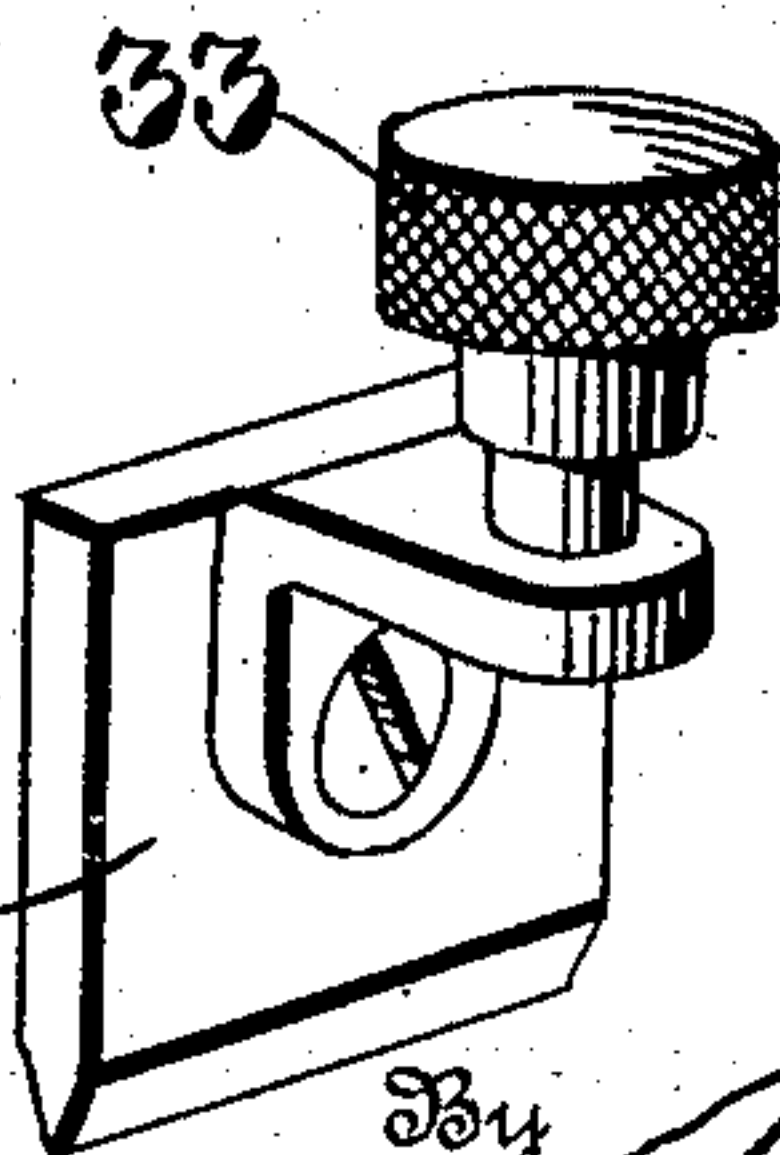
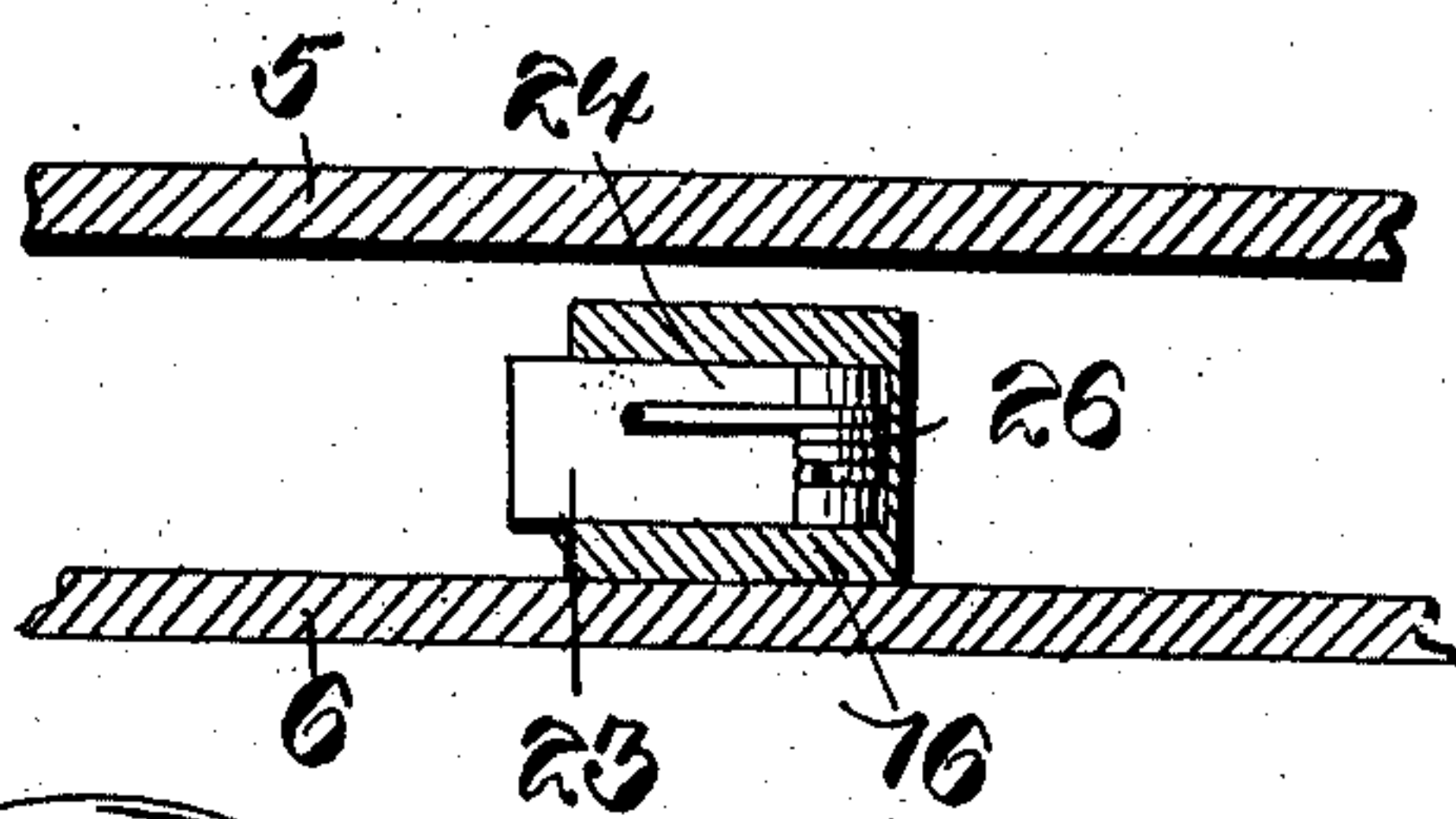
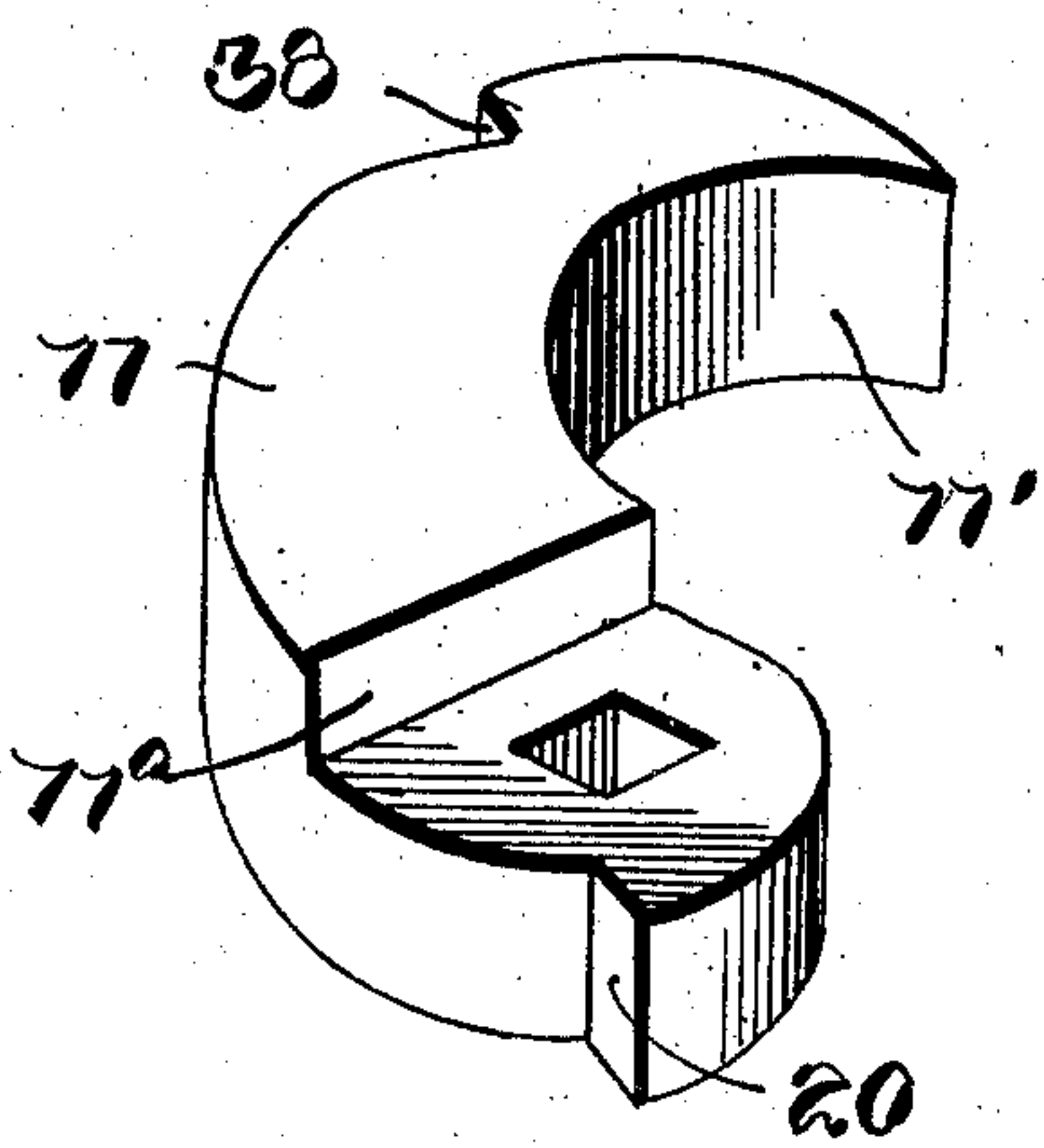
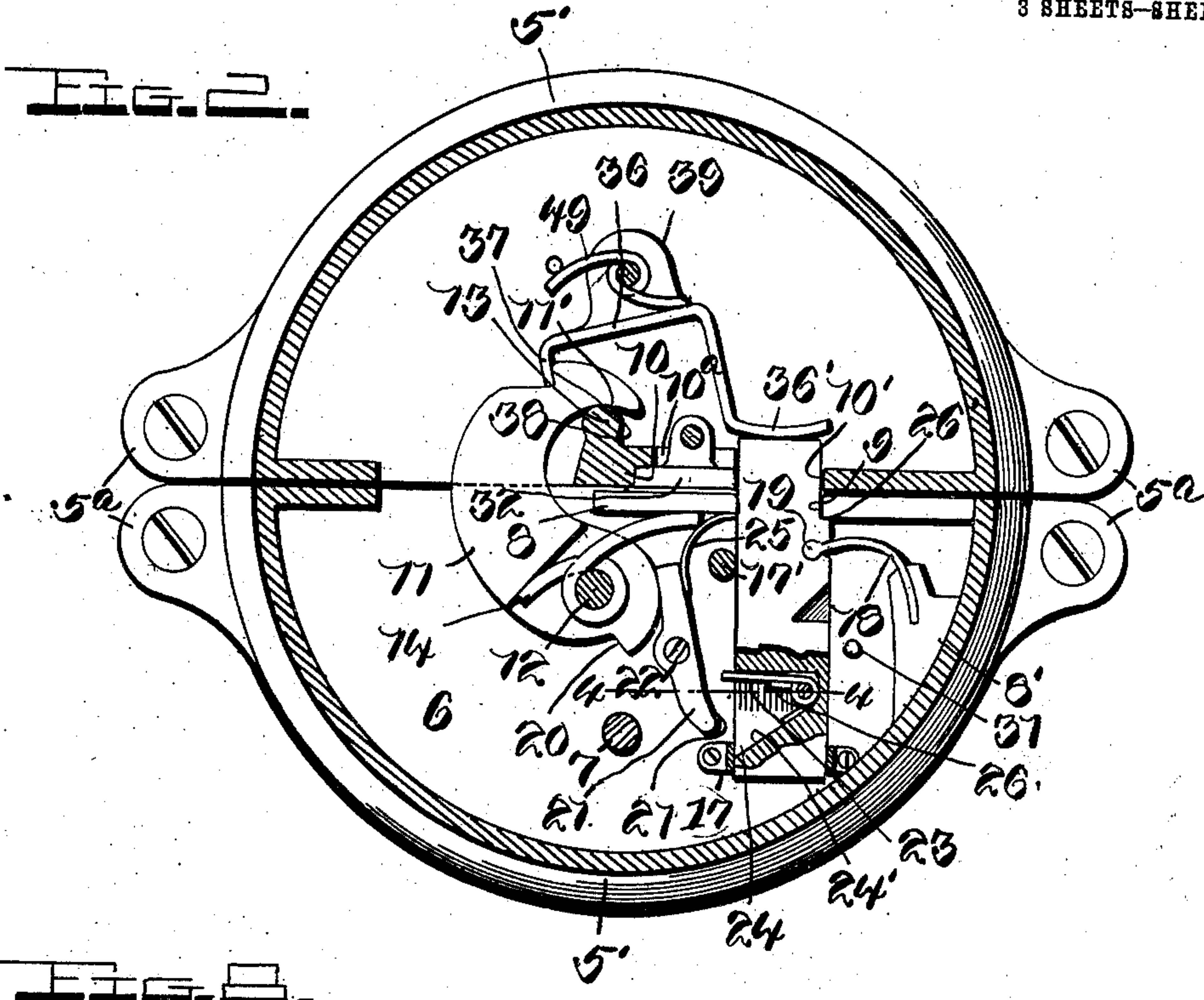
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3 SHEETS-SHEET 2.



Witnesses

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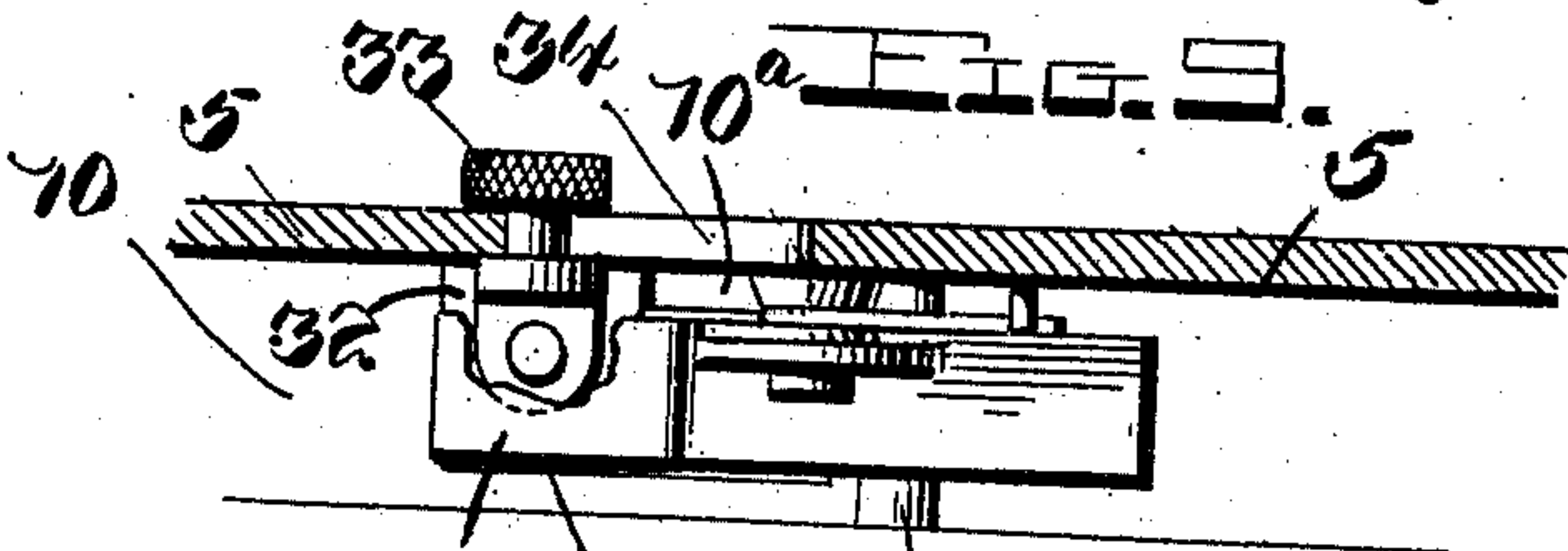
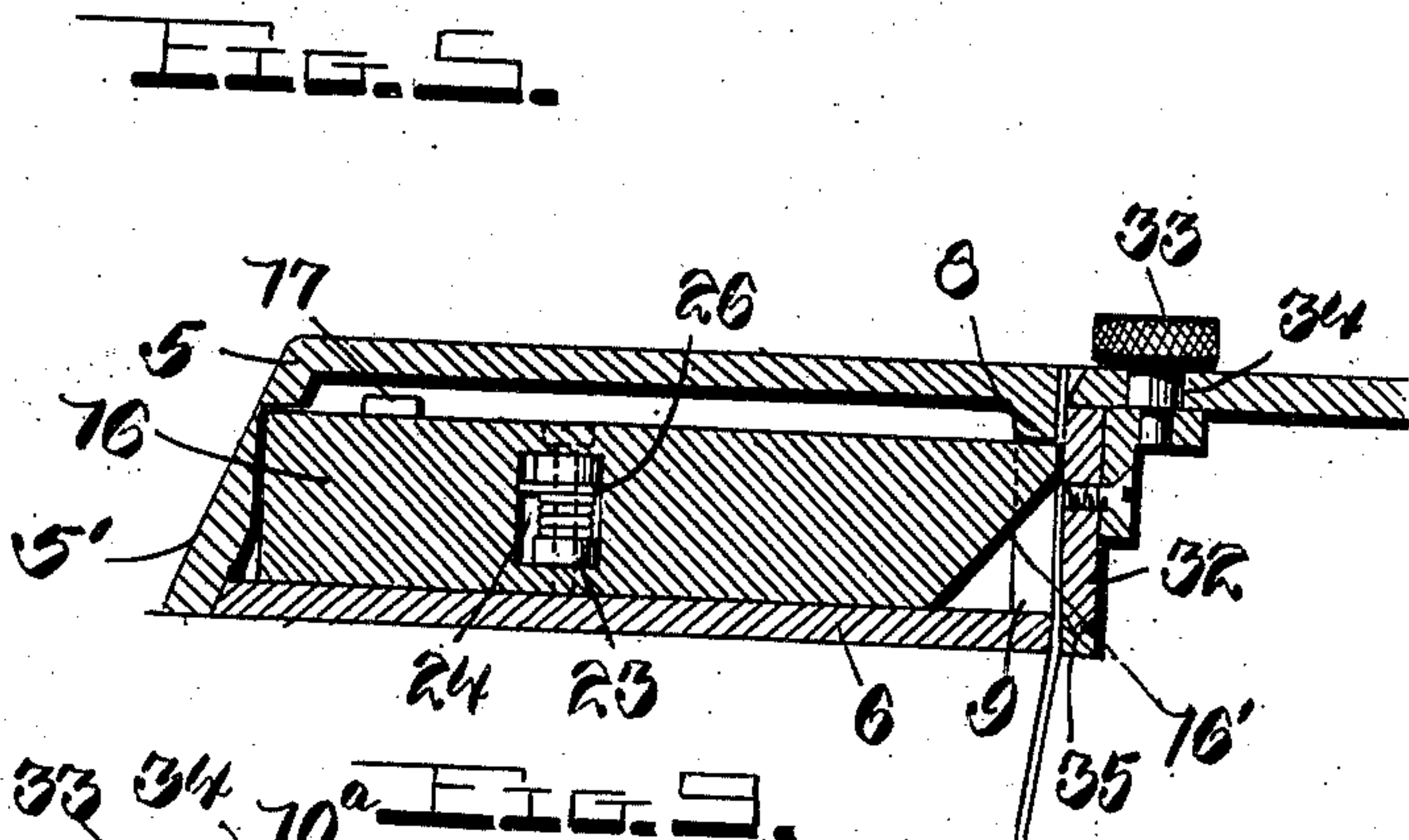
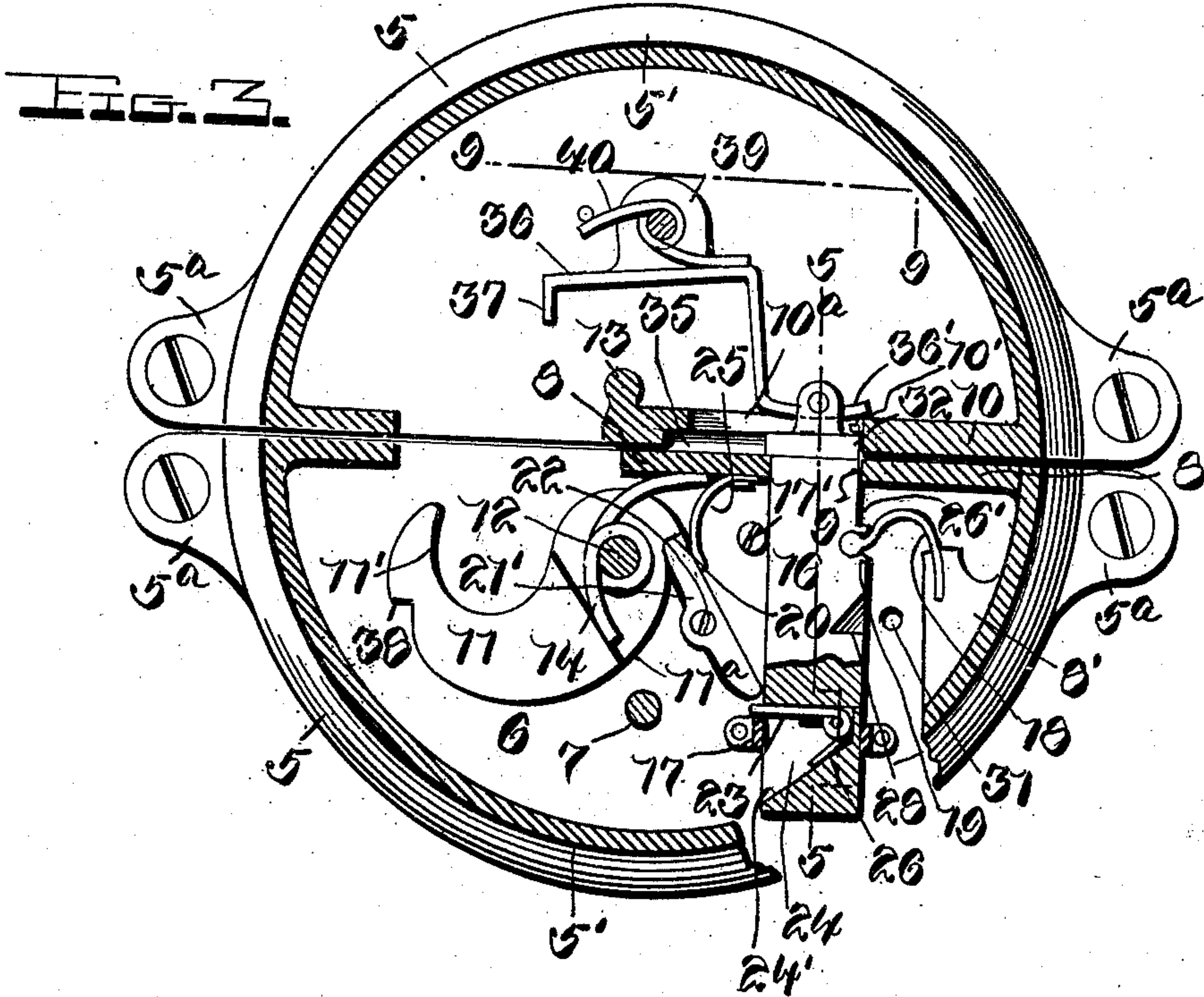
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3 SHEETS-SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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SASH-LOCK.

986,555.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed October 12, 1910. Serial No. 586,689.

To all whom it may concern:

Be it known that I, EDWIN A. DONAT, a citizen of the United States, residing at Wanamakers, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Sash-Locks, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in sash locks and has for its object to provide a lock of the above character which will absolutely lock the sash when closed to prevent the same being forced open in an attempt to enter the apartment.

15 A further object of the present invention is to provide a pivoted spring actuated primary locking element and an auxiliary locking bolt, and means being arranged between the locking element and the bolt and actuated by the latter to release said element and permit of its movement to locking position.

20 Another object of the invention is to provide means for rendering the locking bolt inoperative whereby the pivoted locking element may be independently actuated to lock the sashes.

25 A still further object of the invention resides in the provision of a sash lock mechanism of comparatively simple construction and one which is automatically actuated by the movement of the sashes to closed position, said mechanism being of such construction that the sashes may be unlocked with or without the use of a key as desired.

30 With these and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

35 Figure 1 is a perspective view of fragments of the upper and lower sashes illustrating the arrangement of my improved lock mechanism thereon; Fig. 2 is an enlarged top plan view, the lock casing being shown in section and the sashes locked together; Fig. 3 is a similar view showing the relative positions of the locking elements when the sashes are unlocked; Fig. 4 is a section taken on the line 4—4 of Fig. 2; Fig. 5 is a section taken on the line 5—5 of Fig. 3; Fig. 6 is a detail perspective view of the locking bolt; Fig. 7 is a similar view of the sliding plate to prevent the movement of the bolt to locking position; Fig.

8 is a detail perspective view of the locking dog; Fig. 9 is a detail section taken on the line 9—9 of Fig. 3; and Fig. 10 is a detail perspective view of the pawl arranged between the locking dog and the bolt.

Referring more particularly to the drawings S indicates the sashes which are arranged in the window frame for vertical sliding movement in the usual manner. Upon the upper rail of the lower sash and the lower rail of the upper sash my improved lock is adapted to be arranged. The lock mechanism is housed within the casing sections 5 which are secured to the rails of the sashes. Each of these casing sections is substantially semicircular in form and comprises a top plate and a side wall 5', the side wall having formed on its lower edge laterally extending ears 5^a to receive suitable fastening screws by means of which the casing is secured to the sash rail. These casing sections have no bottoms, but the section 5 arranged on the rail of the lower sash has a base plate 6 therein which is rigidly secured upon the sash by means of a screw 7 extending through the top of the casing and through said plate into the sash rail. Upon the outer edge of the base plate 6 a vertical longitudinal plate 8 is formed at one end, said plate being rigidly fastened in any desired manner to the top of the lock case. This vertical wall is provided with a rectangular opening 9 for a purpose which will more fully hereinafter appear. A lug or enlargement 8' is also formed upon the base plate at the edge thereof, the purpose of which will be later pointed out.

The case section 5 which is arranged upon the upper sash rail is formed at its outer edge with a longitudinal wall 10 and said wall has an opening 10' formed therein which when the sashes are closed alines with the opening 9 in the front wall of the base plate 6. A locking dog 11 is arranged within the casing 5 on the lower sash rail. One end of this dog is rigidly fixed upon a pivot pin 12 which is rotatably mounted in the top of the case 5 and has its lower end journaled in the base plate 6. The dog 11 is curved at its outer end as shown at 11' and is adapted to extend beneath the top plate of the case 5 on the upper sash rail and engage over an inwardly extending lug 13 which is formed on the end of the vertical wall 10 of the upper lock casing. A coiled spring 14 is arranged upon the pivot 12, the

pivoted end of the dog 11 being cut away to provide a shoulder 11^a with which one end of said spring engages, the other end of the spring bearing upon the front wall 8 of the base plate 6. To the upper end of the pivot 12 a handle or finger-piece 15 is secured by means of which the dog 11 is adapted to be moved into locking position.

A bolt 16 is slidably mounted upon the base plate 6 and is arranged in a U-shaped guide 17 which is secured to said base plate, a vertical arm 17' being also secured to the base plate to guide the outer end of the tumbler adjacent to the opening 9 in the vertical wall 8. This bolt is normally forced outwardly by means of a spring 18, one end of which is secured to the side wall 8' of the base plate, the other end of said spring being engaged in a notch or recess 19 provided in one side of the tumbler. A shoulder 20 is formed on the edge of the locking dog 11 at its pivoted end, and with this shoulder one end of a pawl 21 is adapted to engage to secure the locking dog in its released position. The pawl 21 is pivoted intermediate of its ends upon a stud 22 rising from the base plate 6, and the other end of said pawl is slightly curved as indicated at 21' for engagement by a trip plate 23 carried by the longitudinally movable bolt bar 16. This trip plate is pivoted in an opening 24 extending inwardly from one side of the tumbler. The forward end wall of this opening is vertical while the rear end wall thereof is beveled longitudinally of the tumbler as indicated at 24'. It will be observed that the trip plate 23 is pivoted in this opening adjacent to the forward vertical wall thereof and that the same projects outwardly and slightly beyond the side of the tumbler. The pawl 21 is normally held yieldingly in engagement with the pivoted dog 11 by means of a spring 25, one end of which is secured to the front wall 8 of the base plate. The trip plate 23 is normally held against pivotal movement and against the vertical wall of the opening 24 by means of a coiled spring 26 which is arranged upon the pivot of said plate and bears at one end against the same and at its other end against the side wall of the opening 24. The outer end of the sliding bolt bar 16 is beveled as shown at 16' so that when the lower sash is lowered, said beveled end will engage with the upper edge of the lock case on the upper sash and will be moved inwardly against the tension of the spring 18 thereby engaging the outer end of the trip plate 23 with the curved end of the pawl 21 to disengage said pawl from the shoulder 20 formed on the pivoted end of the dog 11. The sliding bolt 16 is formed upon one side with a shoulder 26' which engages with the inner face of the vertical wall 8 of the base plate 6 to limit the outward movement of said tumbler. This bolt is also

formed with a notch or recess 28 to receive a lug formed on the end of the key 29, a suitable key hole 30 being provided in the top of the case 5 to receive the key, the end of which engages with an opening 31 formed in the bottom plate 6 adjacent to the bolt.

In the operation of the lock so far as the same has been described, the operator moves the locking dog 11 by means of the finger-piece 15 on the upper end thereof, into the lock case 5 until the end of the spring pressed pawl 21 engages with the shoulder 20 on the pivoted end of said dog. It will therefore be obvious that when the window sashes are closed, the engagement of the outer end of the bolt 16 with the rail of the upper sash will move said tumbler inwardly and disengage the pawl from the locking dog as previously described, thus allowing the spring 14 to move said dog into the case on the upper sash rail, said spring having been placed under tension by manual movement of the locking dog. When the sashes are completely closed, the spring 18 forces the bolt outwardly again and through the opening 9 in the vertical wall 8 and the opening 10' in the wall 10 of the lock case sections. In order to release the sashes the key 29 must be inserted and the lug thereon engaged in the notch 28 in the side of the bolt and the key then turned to force the bolt inwardly into the lock case. In this movement of the bolt bar, the trip plate 23 engages the curved end of the pawl 21. The dog 11 is now manually moved to its released position, the spring 25 forcing the pawl into engagement with the shoulder thereon. When the key is removed the bolt 16 is forced outwardly by the spring 18 and the trip plate 23 is forced into the opening 24 of said bolt when it engages the end of the pawl 21. After passing the pawl, the spring 26 forces the trip plate into engagement with the outer end wall of the opening 24 so that it is in position to engage the pawl 21 and release the spring actuated dog 11 when the sliding bolt 16 is moved into the case section in the closing movement of the sashes.

When it is desired to prevent the locking engagement of the bolt with the upper sash rail, a sliding plate 32 is moved over the opening 10' in the vertical wall 10 of the case on the upper sash to close the same and prevent the projection of the bolt bar into said opening. This plate is rigidly secured to the lower end of an operating stud 33 which projects through a slot 34 in the top of the case 5. The face of the wall 10 inwardly of the opening 10' is cut away, the plate 32 having its outer surface disposed in the same plane therewith. The lower edge of the plate 32 is beveled for engagement in a V-shaped guide groove 35. A short slot 10^a is provided in the reduced in-

ner end of the wall 10 to receive the operating bar or stud 33 in the movement of said plate. It will now be seen that when the sashes are moved to closed position, the sliding bolt will be forced inwardly to release the spring pressed locking dog 11, said bolt being held against movement into the opening 10' by means of the plate 32. Thus it is unnecessary to use the key in releasing the sashes, the operator simply moving the dog by turning the handle on the upper end of the pivot of said dog until the pawl 21 engages the shoulder of the dog and holds the same in its released position. In order to provide further assurance against unauthorized opening of the window sashes by persons desiring to force an entrance into the apartment, I provide a dead locking element 36. This element is in the form of a plate angularly bent at points intermediate of its ends to provide an outwardly projecting portion 36' which is adapted to be engaged by the end of the sliding bolt 16. This lateral extension of the plate is formed adjacent to one end of the same, the other end of said plate being bent at right angles as at 37 to provide a detent for engagement in a notch or recess 38 in the curved end of the pivoted locking dog 11. The plate 36 has formed upon one of its longitudinal edges an ear 39 through which a pivot pin extends, said pin being fixed in the top of the lock case 5. A coiled spring 40 is also arranged upon this pin and one end of said spring is engaged with the plate 36 while the other end thereof bears against a pin fixed in the bottom of the case, as shown. It will be seen from the above that when the spring 18 forces the sliding bolt bar 16 through the aligned openings 9 and 10', the end of said bolt will engage the laterally disposed end portion 36' of the dead locking plate and force the same inwardly against the tension of the spring 40. This spring 40 is of less strength than the spring 18, and is overcome by the action of the same. The other end of the plate 36 is thus moved outwardly and the detent 37 thereon engaged in the notch 38 of the pivoted locking dog 11. The dog 11 is thus securely held against any possibility of movement to its released position, until the proper key is inserted and engaged with the sliding tumbler to move the same and permit the spring 40 to return the dead locking plate to its normal position whereby the locking dog 11 is released so that the same is moved out of the lock case on the upper sash when the pawl 21 has been disengaged therefrom by the inward movement of the bolt 16.

From the foregoing it is believed that the construction and operation of my improved sash lock will be readily understood without additional explanation.

The device is comparatively simple in construction and highly efficient in practical use. The lock may be easily and quickly manipulated to release the sashes for relative sliding movement and the locking of the sashes when they are closed is entirely automatic. By means of the dead locking device which is employed, the liability of insertion of an instrument between the sashes to move the dog 11 to released position is reduced to a minimum thereby also materially decreasing the probability of intruders entering the apartment.

While I have shown and described the preferred construction and arrangement of the various parts, it will be understood that the device is susceptible of a great many minor modifications in the form and proportion of the parts without departing from the essential feature or sacrificing any of the advantages of the invention.

Having thus described the invention what is claimed is:—

1. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes respectively of a window, a pivoted locking dog in one of the casing sections adapted to project into the other section, a slidable auxiliary locking bolt to project through the opposed walls of the casing sections, and a movable element arranged between the locking dog and said bolt and actuated by the latter to permit of the movement of the locking dog to its locking position.

2. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes respectively of a window, a pivoted spring pressed locking dog in one of the casing sections, a slidable auxiliary locking bolt in said section adapted to project through the opposed walls of the casing sections, and a movable element arranged between the dog and the bolt and adapted to be automatically actuated in the sliding movement of the latter to release the dog whereby said dog is moved to its locking position.

3. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes of a window, a pivoted spring actuated locking dog arranged in one of the casing sections and having a shoulder on its pivoted end, a sliding bolt in said section, said sections having openings in their opposed walls adapted to register when the sashes are closed, a spring normally forcing said bolt through the openings in the casing sections, a movable element arranged between the dog and the bolt and engaged with the shoulder on said dog to retain the same in its released position, and means carried by the bolt to engage said element and release the dog for movement to its locking position.

4. In a sash lock, a two-part casing adapted

to be secured to the upper and lower sashes of a window, a locking dog pivotally mounted in the casing section on the lower sash, a spring acting to force said dog into its locking position, said dog being movable into the casing section on the upper sash, a spring actuated sliding bolt arranged adjacent to said dog, a pivoted spring pressed pawl arranged between the bolt and the dog, said dog being engaged by one end of the pawl to retain said dog in its released position against the action of said spring, and a spring pressed trip plate carried by the bolt and adapted to engage said pawl in the sliding movement of the bolt to disengage the same from the dog whereby the dog is moved to its locking position.

5. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes of a window, a dog pivotally mounted in the casing section on the lower sash, a finger-piece fixed on the pivot of said dog to move the same to its released position, a spring normally acting to move the dog into its locking position into the other casing section, the opposed walls of said casing sections having openings therein which are brought into register when the sashes are closed, a sliding bolt arranged adjacent to the dog, a spring normally acting to force the bolt outwardly through the aligned openings in the casing sections, a pivoted spring pressed pawl arranged between the dog and the tumbler, said bolt having an opening therein, a trip plate pivotally mounted in said opening and extending beyond the side of the bolt for engagement with one end of said pawl, the other end of said pawl engaging with the locking dog to maintain the same in its released position, and a spring in the opening of the bolt to yieldingly hold the trip plate in position for engagement with the pawl in the sliding movement of the bolt whereby said pawl is disengaged from the dog and the dog moved to locking position in the other of the casing sections.

6. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes of a window, a base plate arranged in the casing on the lower sash, said plate having a vertical longitudinal wall at its outer edge and at one side thereof, a vertical wall at the outer edge of the other casing section, said walls having openings therein adapted to register when the sashes are closed, a pivoted spring actuated dog in the casing on the lower sash, a spring actuated sliding bolt arranged adjacent to said dog, means arranged between the bolt and the dog to retain the latter in its released position, means carried by the bolt to automatically actuate said last named means and release the dog for movement to its locking position, said dog projecting through the vertical walls of said base plate and the up-

per casing section, and a dead locking element arranged in the casing section on the upper sash adapted to be engaged by said bolt and move said element into engagement with the dog to retain the same in its locking position against movement independent of the bolt.

7. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes of a window, a spring actuated locking dog arranged in the casing section on the lower sash and adapted to be projected through the casing on the upper sash to lock the sashes together, means for holding said dog in its released position, a sliding bolt to actuate said last named means in its sliding movement and release the dog for movement to its locking position, a spring controlled dead locking element arranged in the casing section on the upper sash, said bolt being adapted to extend into the upper casing section and engage said element to move the same into engagement with the locking dog to retain said dog in its locking position.

8. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes respectively of a window, a spring actuated sliding bolt mounted in one of the casing sections, the opposed walls of said casing sections being provided with openings through which said bolt is projected when the sashes are moved to their closed positions to lock the same together, a pivoted locking element arranged in the first named section and controlled by the sliding movement of the bolt, means for moving said element to locking position and means slidably mounted in the last named casing section to be moved across the opening therein and prevent the projection of the bolt into said section.

9. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes respectively of a window, the opposed walls of said casing sections each being provided with an opening adapted to aline when the sashes are closed, a spring actuated sliding bolt mounted in one of the casing sections and projecting through the opening therein, the end of said bolt being beveled to engage the upper edge of the other casing section in the closing movement of the sashes whereby said bolt is forced inwardly to place the spring under tension, said spring projecting the bolt through the openings of the casing sections when the sashes are closed, a pivoted spring actuated locking dog mounted in the first named casing section and movable into the other section, means normally holding said dog in its unlocked position, said latter means being actuated in the inward movement of the bolt to release the dog and permit of its movement to locking position, and a sliding

plate in the other casing section movable over the opening therein to prevent the movement of the bolt into said casing section.

- 5 10. In a sash lock, a two-part casing adapted to be secured to the upper and lower sashes respectively of a window, a sliding bolt arranged in one of the casing sections and movable into the other section in the
10 movement of the sashes to their closed positions to lock the sashes together, said bolt being movable into the casing section in the closing movement of the sashes, additional

locking means controlled by the inward movement of the bolt, means for moving 15 said latter means to locking position, and an adjustable element carried by the other casing section movable into the path of movement of the sliding tumbler to prevent its movement to locking position. 20

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

EDWIN A. DONAT.

Witnesses:

JAS. A. MILLER,

CALVIN N. DONAT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
