

H. W. WOODRUFF.

LOCK.

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969,236.

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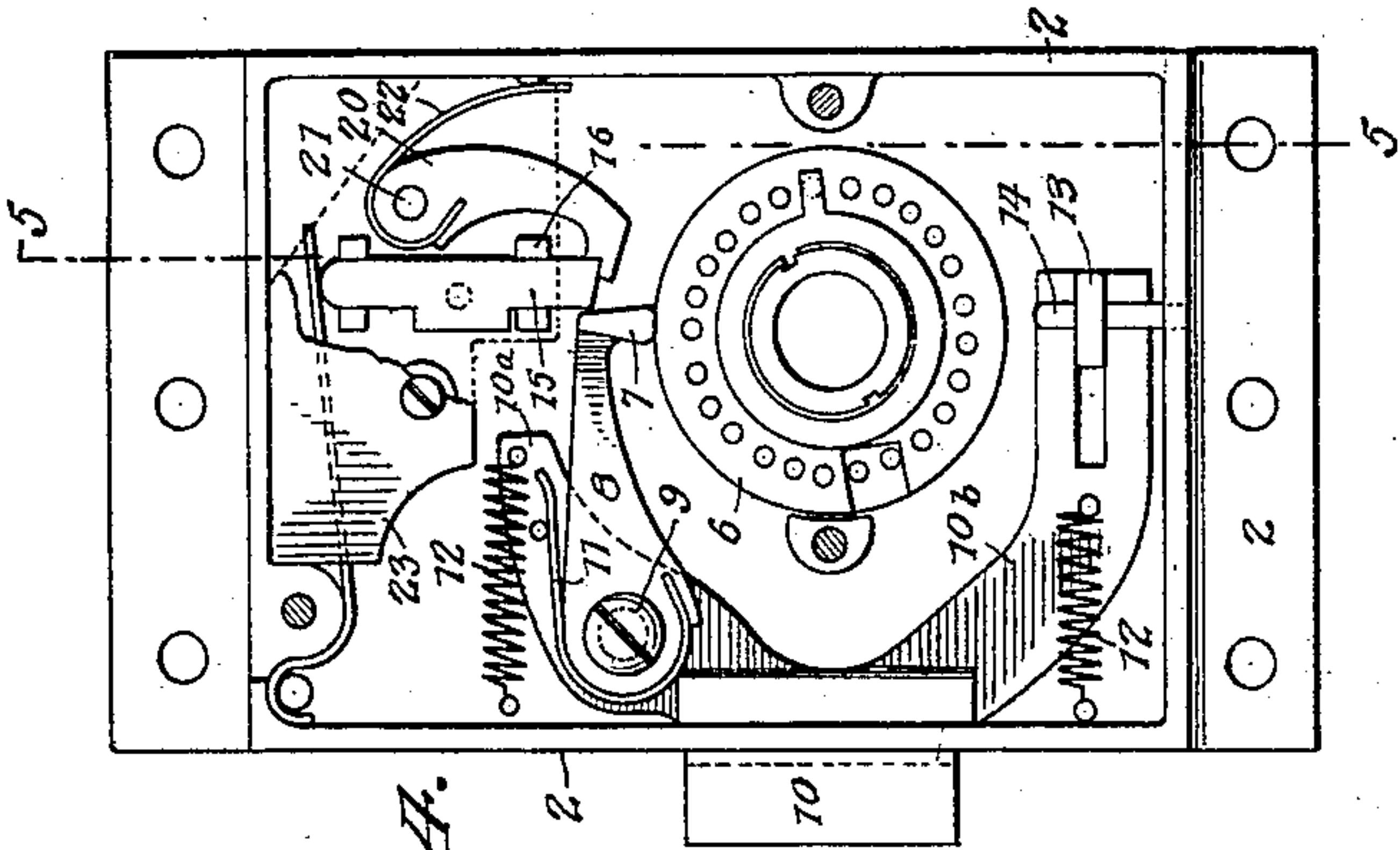


Fig. 4.

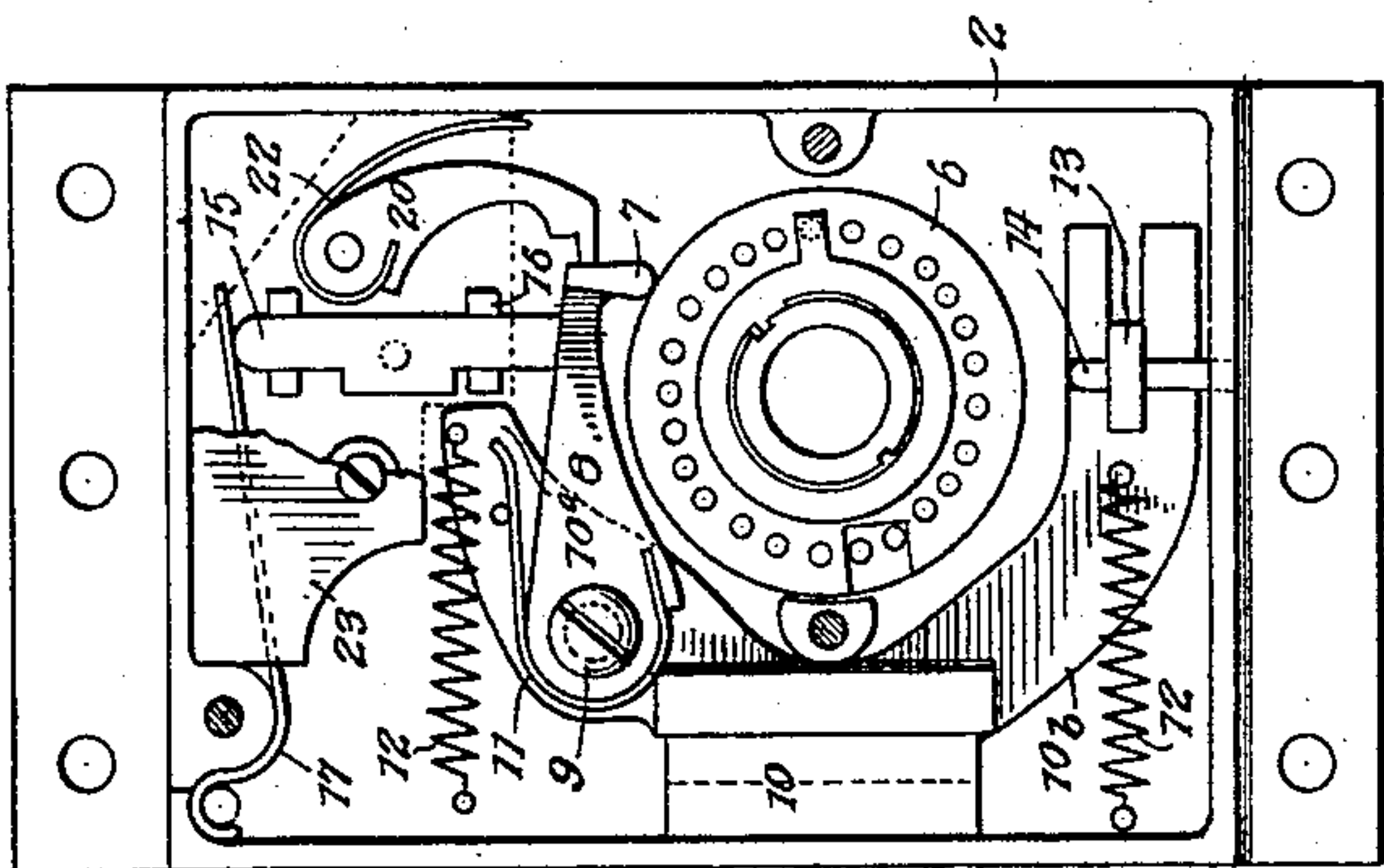


Fig. 3.

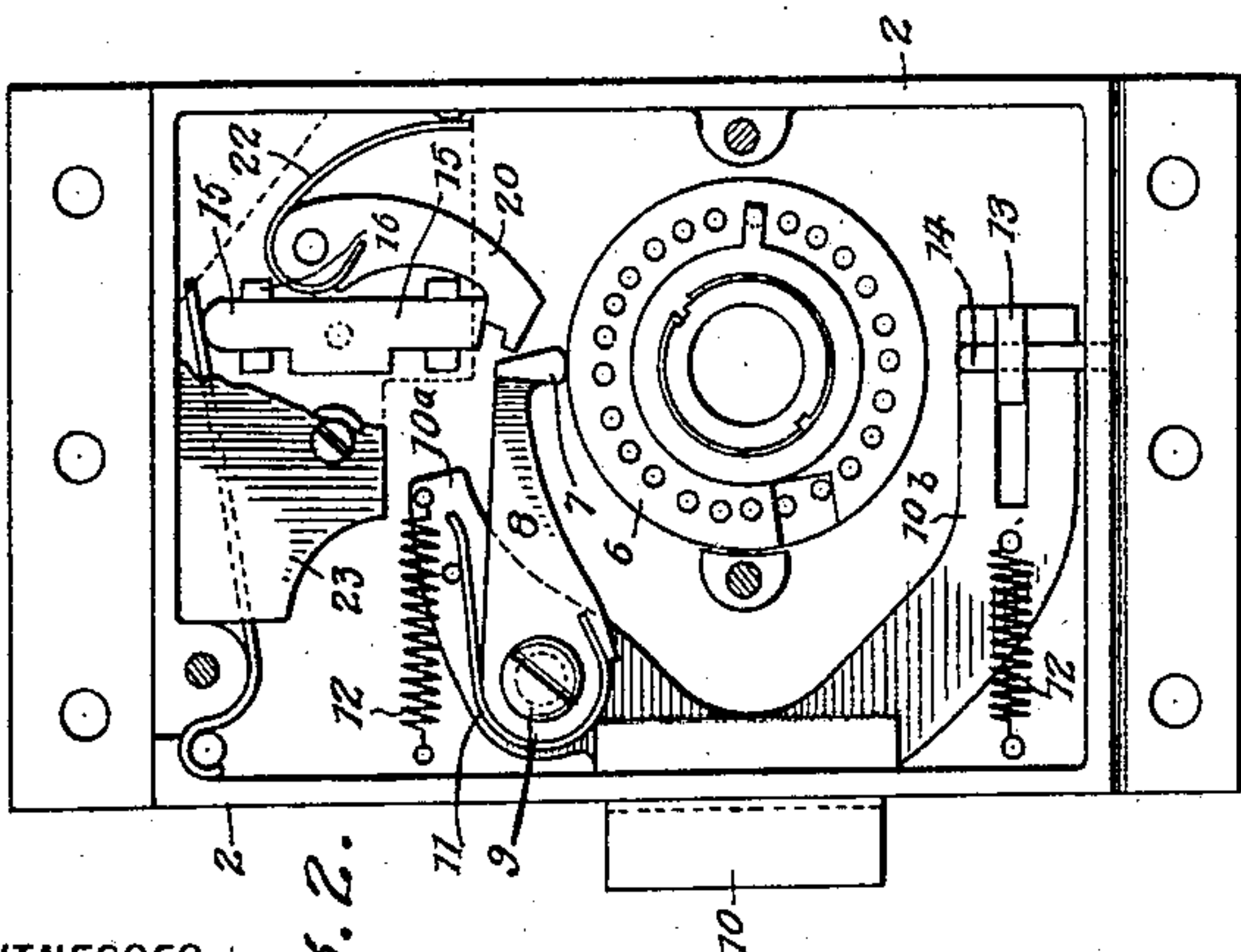


Fig. 2.

WITNESSES:

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Fig. 5.

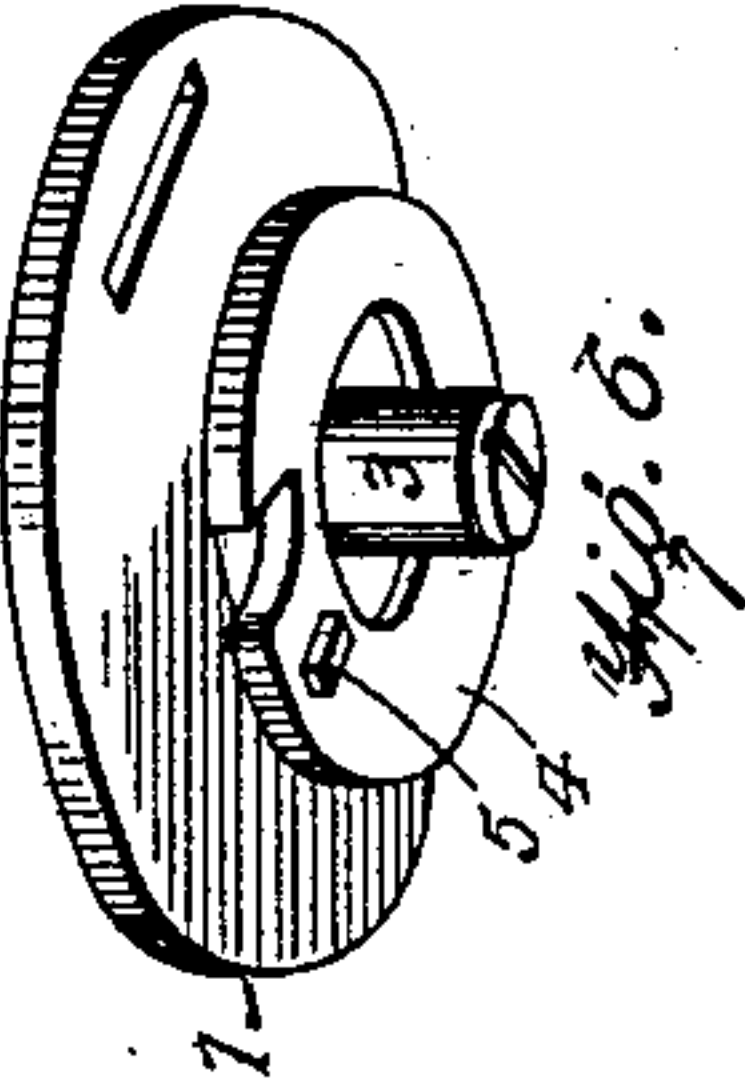
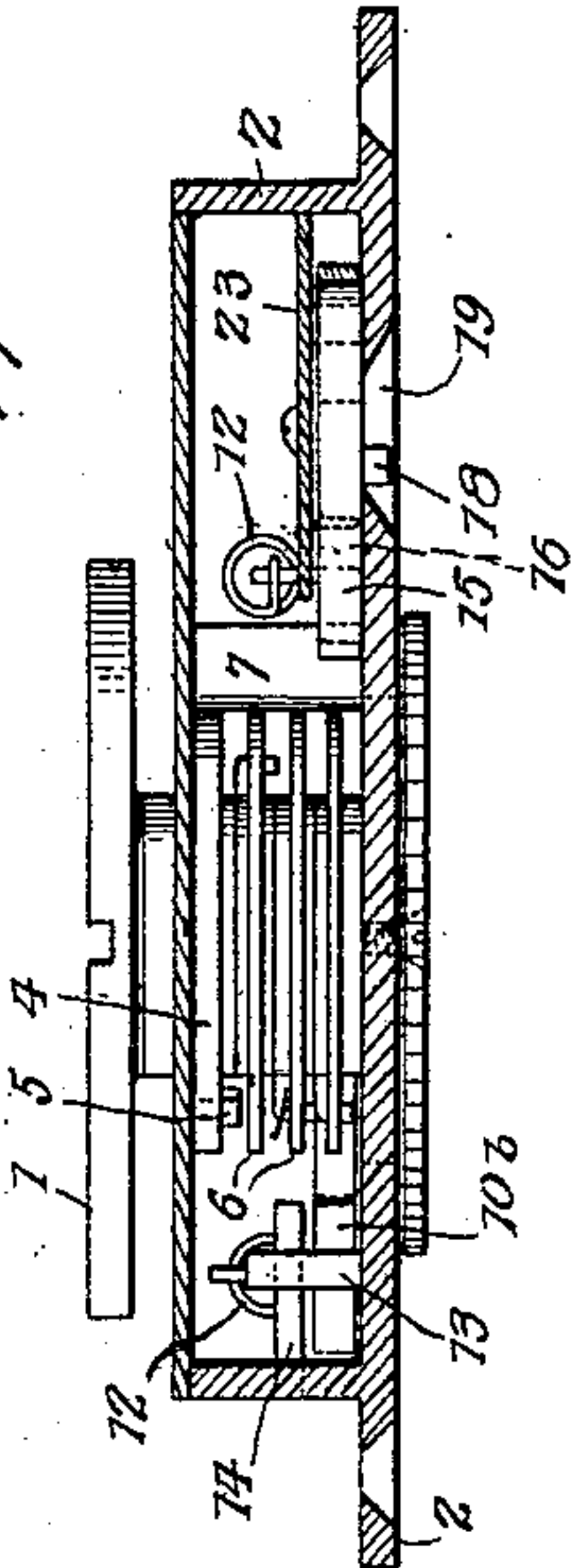


Fig. 6.

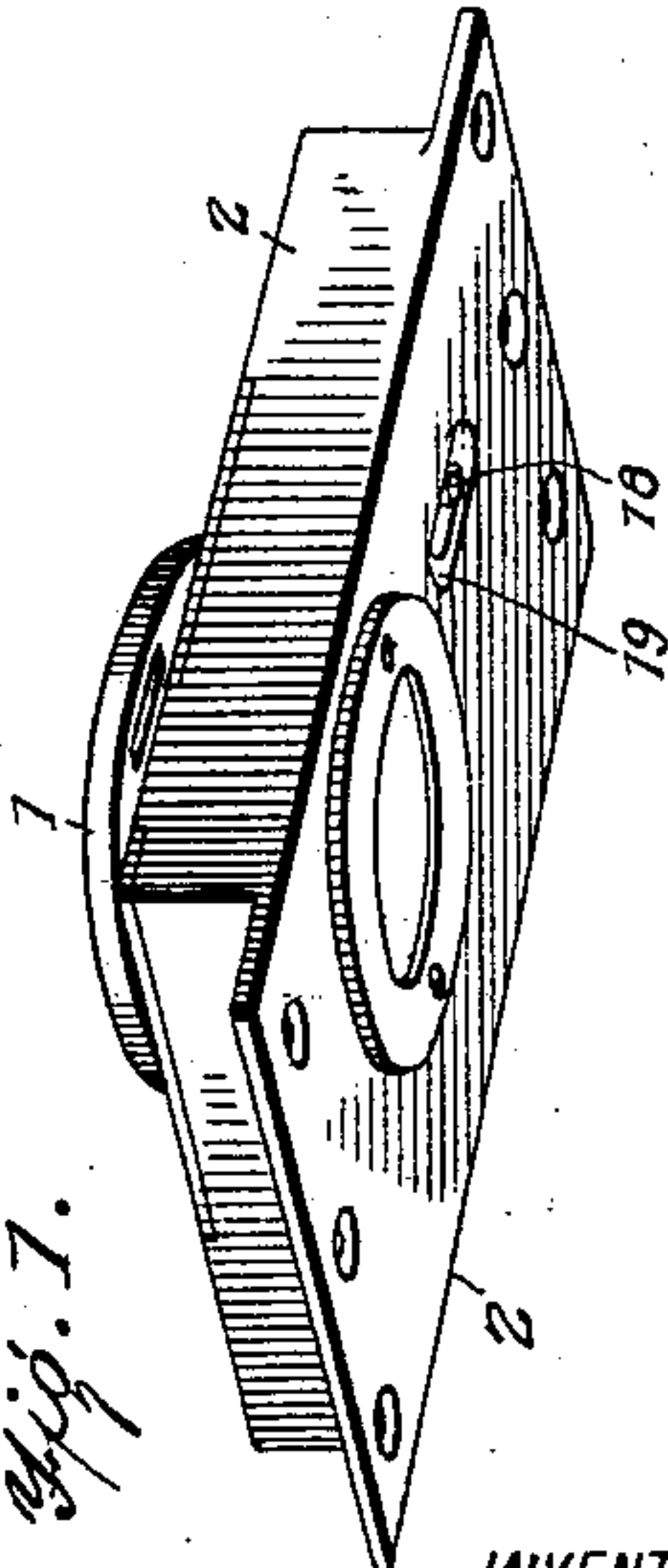


Fig. 1.

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LOCK.

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Specification of Letters Patent.

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Original application filed October 23, 1909, Serial No. 524,182. Divided and this application filed January 6, 1910. Serial No. 536,646.

To all whom it may concern:

Be it known that I, HORACE W. WOODRUFF, a citizen of the United States, and a resident of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain Improvements in Locks, of which the following is a specification.

This application is a division of my application for patent for a portable safe for valuables, filed October 23, 1909, Serial No. 524,182, and allowed December 23, 1909.

My invention is an improvement in the class of locks wherein a slidable bolt or latch is operated by rotatable tumblers controlled by a numbered dial that is visible and accessible on the exterior of the safe to which the lock is applied.

My invention relates particularly to means for locking the bolt or latch in the engaging or projected position.

The said means consist of a movable spring-actuated stop arranged to project into the path of the bolt or latch, and a pivotal spring-support and trip therefor adapted to be automatically operated when the safe is closed.

The details of construction, combination, and operation of parts are as hereinafter described, and illustrated in the accompanying drawing, in which:—

Figure 1 is a perspective view of my improved lock. Figs. 2, 3 and 4 are face views of the lock with the cover removed, showing different positions of the locking mechanism, as will be hereinafter described. Fig. 5 is a longitudinal section on the line 5—5 of Fig. 4. Fig. 6 is a perspective view of the dial and connected parts rigidly attached thereto, whereby the rotary tumblers of the lock are operated.

1 indicates the dial and 2, the casing of the lock. It will be understood that, in practice, the casing, with the lock mechanism inclosed, is to be properly attached and secured to the door or other closure of a safe, and that the numbered dial 1 is to be applied so that it is visible and accessible on the outer side of such door or closure.

The dial has a central stem 3 and a notched annular collar or cam 4 provided with a lug 5. In the operation of the lock, this lug engages a corresponding one on the outer or adjacent tumbler. A series of tumblers 6 are employed and severally provided with lugs so that, when the outer tumbler is ro-

tated, the others may be rotated in succession as required for placing them with their peripheral notches in alinement. When the notches are thus alined, they receive the nose 7 of a dog 8 which is pivoted at 9 to the slidable bolt or latch 10. The nose is held normally pressed on the peripheries of the tumblers 6 by means of a spring 11. When the nose of the dog has entered the notches, as aforesaid, and the tumblers are rotated by means of the dial 1, the bolt 10 may be retracted against the tension of the springs 12 which hold it normally projected, as shown in Figs. 2 and 4.

The outer end of the bolt may be beveled like certain forms of door latches, so that, in closing the door or other part to which the lock mechanism may be applied, the bolt will be forced back so as to engage automatically when again projected by means of the tension of springs 12. The portion of the bolt within the casing 2 is bifurcated, the arms 10^a and 10^b diverging, as shown. The dog 8 is pivoted to the shorter arm 10^a, and the other arm 10^b is slotted to receive a lug 13 of the casing through which a securing pin 14 is inserted.

My invention relates particularly to the means which I will now describe for locking the bolt in the projected position indicated in Figs. 2 and 4.

15 indicates a short bar, hereinafter termed a stop, which is slidable between the lugs 16 forming a fixed attachment of the casing, and a spring 17 bears on the outer end of said stop, as shown in Figs. 2, 3 and 4. This stop has on its outer side a lug or pin 18 that projects through a slot 19 in the casing 2, as shown in Figs. 1 and 5. This lug or pin serves as a means for setting the stop 15 manually, as will be further described.

20 indicates a device in the form of a curved bar simulating a hook, which is pivoted to the casing at 21, and whose nose or notched end is held normally projected into the path of the stop 15 by means of a spring 22. It will be seen that the nose of this device is provided with a notch or shoulder, whereby it is adapted to engage and support the stop 15 in its retracted position, shown in Fig. 2. The main or chief purpose of the projecting end or claw of the stop-support 20 is to serve as a point of contact for the dog 8 when the bolt is retracted or pushed back, as shown in Fig. 3.

In practice, a thin metal plate 23 is applied over the stop and its support for the purpose of holding them in due position parallel to the back of the casing 2. A larger plate constitutes the back of the casing 2, the same being indicated in Figs. 1 and 5.

The operation of my invention is as follows. It being supposed that the door or other movable portion of a safe is to be closed, the stop 15 is retracted and set in the position indicated in Fig. 2, whereby it is supported on the claw or shoulder of the device 20. In other words, the latter holds the stop retracted against the tension of the spring. It will now be apparent that, upon closing the safe, the bolt or latch 10 will be pushed back and the nose of the dog 8 will, in such case, engage the claw or free end of the support 20 and force it back, as indicated in Fig. 3, the dog at the same time passing under the adjacent end of the stop 15. When the door of the safe is closed, the tension of the springs 12 will instantly project the bolt or latch 10 into the position shown in Figs. 2 and 4, and the dog 8 will thus be carried out of engagement with the stop 15, and its support 20, and the stop will shoot into the position indicated in Fig. 4, or, in other words, into engagement with the head or nose 7 of the dog. Thus, the bolt 10 will be locked against retraction until the dog shall again be operated manually through the medium of the dial 1 and the tumblers 6. In such locking position of the stop 15, it may be arrested by engagement with the claw or shoulder of the support 20, or the lugs 16 may answer the same purpose by reason of the engagement of a shoulder of the stop therewith, as shown in Fig. 4.

It will be seen that the stop operates automatically upon closing the door of the safe to which the locking mechanism is applied. In other words, when the support 20 is pushed back or tripped by the dog 8, which is in turn pushed back by the retraction of the bolt 10, the stop 15 being freed from the support 20, will be projected downward into engagement with the head of the dog, as shown in Fig. 4, when the bolt and dog are projected to their original positions, indicated in Figs. 2 and 4. When the bolt or latch 10 is thus locked, it is obvious that it cannot be retracted nor the safe opened until

the combination of the lock shall be operated in the proper manner through the medium of the dial 1 and its attached portions 4 and 5.

What I claim is:—

1. The combination with a casing, rotatable tumblers, a spring-actuated slidable bolt and a dog attached to the bolt and adapted to engage said tumblers, of a spring-actuated movable device adapted to project into the path of said dog to prevent retraction of the bolt save when actuated by the tumblers, substantially as described.

2. The combination with a casing, rotatable tumblers, a spring-actuated slidable bolt and a dog pivoted to said bolt within the casing and having a nose adapted to engage the notched tumblers, of a spring-actuated movable device adapted to project into the path of the dog, and a spring-actuated support for said device, said support being adapted to hold said device in retracted position and out of engagement with the dog, the free end of the support lying in the path of the dog so that when the bolt and dog are pushed inward, the support is disengaged from the movable device, which is thus left free to project into engagement with the nose of the dog and hold the dog against retraction, substantially as described.

3. The combination with a casing, a slidable spring-actuated bolt having a beveled nose, a series of rotatable notched tumblers, a dog pivoted to said bolt within the casing and having a nose adapted to engage notches of the tumblers, a slidable bar serving as a safety stop for the bolt, the same being arranged at right angles to the dog and having a pin projecting through and accessible from the outer side of the casing, guides fixed on the inner side of the casing between which said bar is guided, a spring acting on said bar, a support adapted to hold said bar in its retracted position, said support consisting of a pivoted spring-actuated hook whose free end is adapted to engage the bar, and is arranged in the path of the dog in the manner set forth.

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Witnesses:

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 SOLON C. KEMON.