

No. 886,396.

PATENTED MAY 5, 1908.

J. E. MYERS & B. I. TUTTLE.

GRAVE VAULT LOCK.

APPLICATION FILED MAY 18, 1906.

FIG. 1.

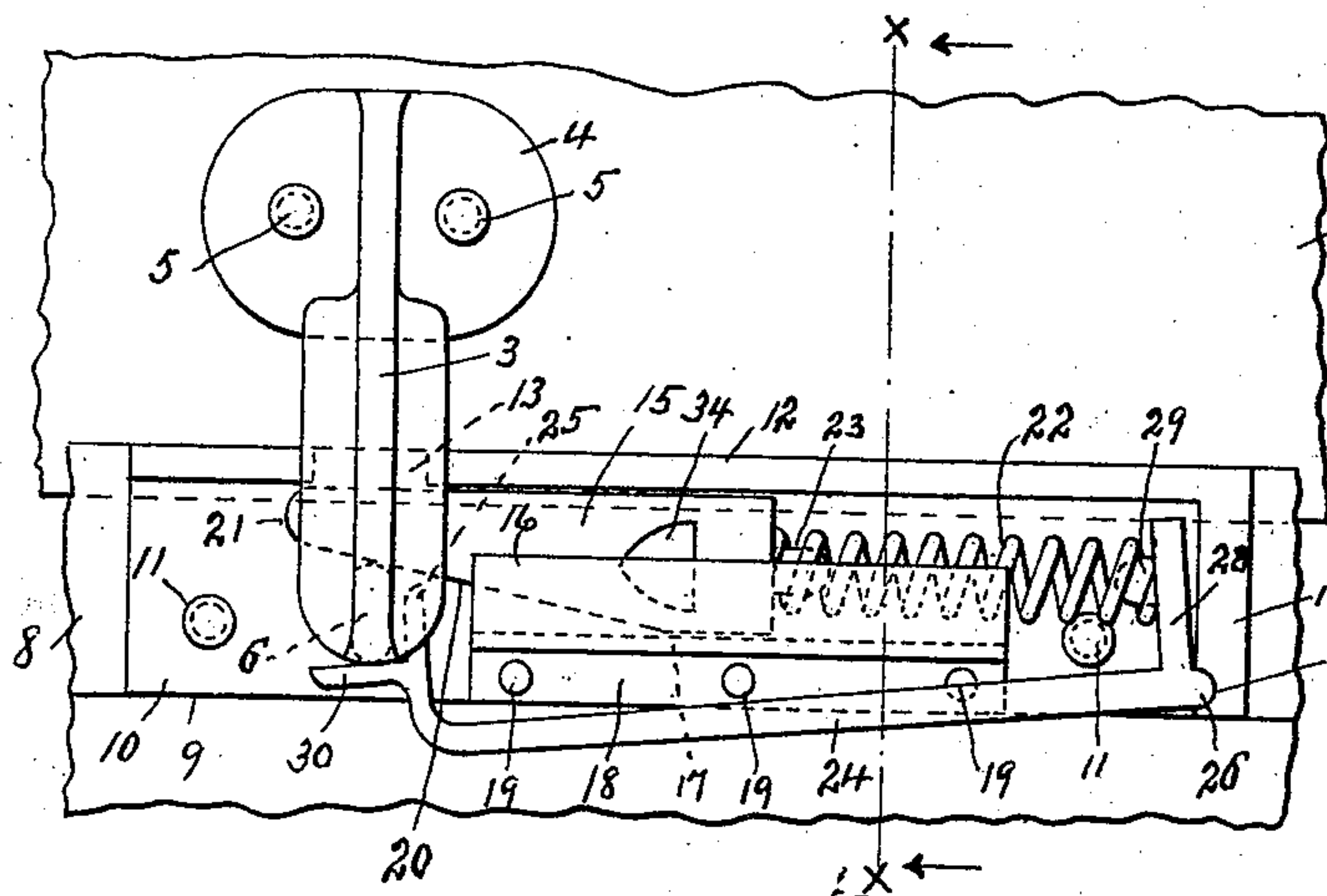


FIG. 2.

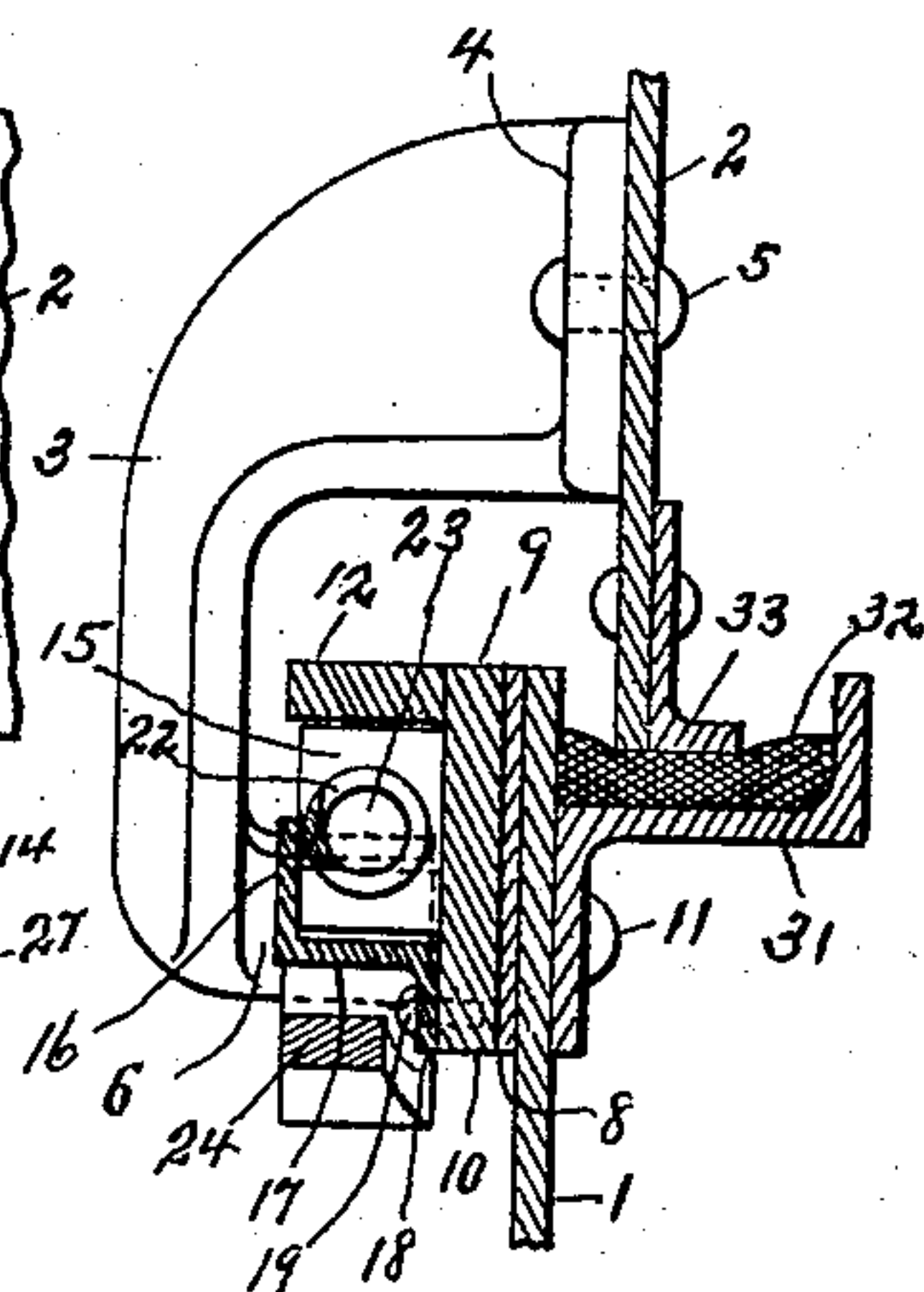


FIG. 3.

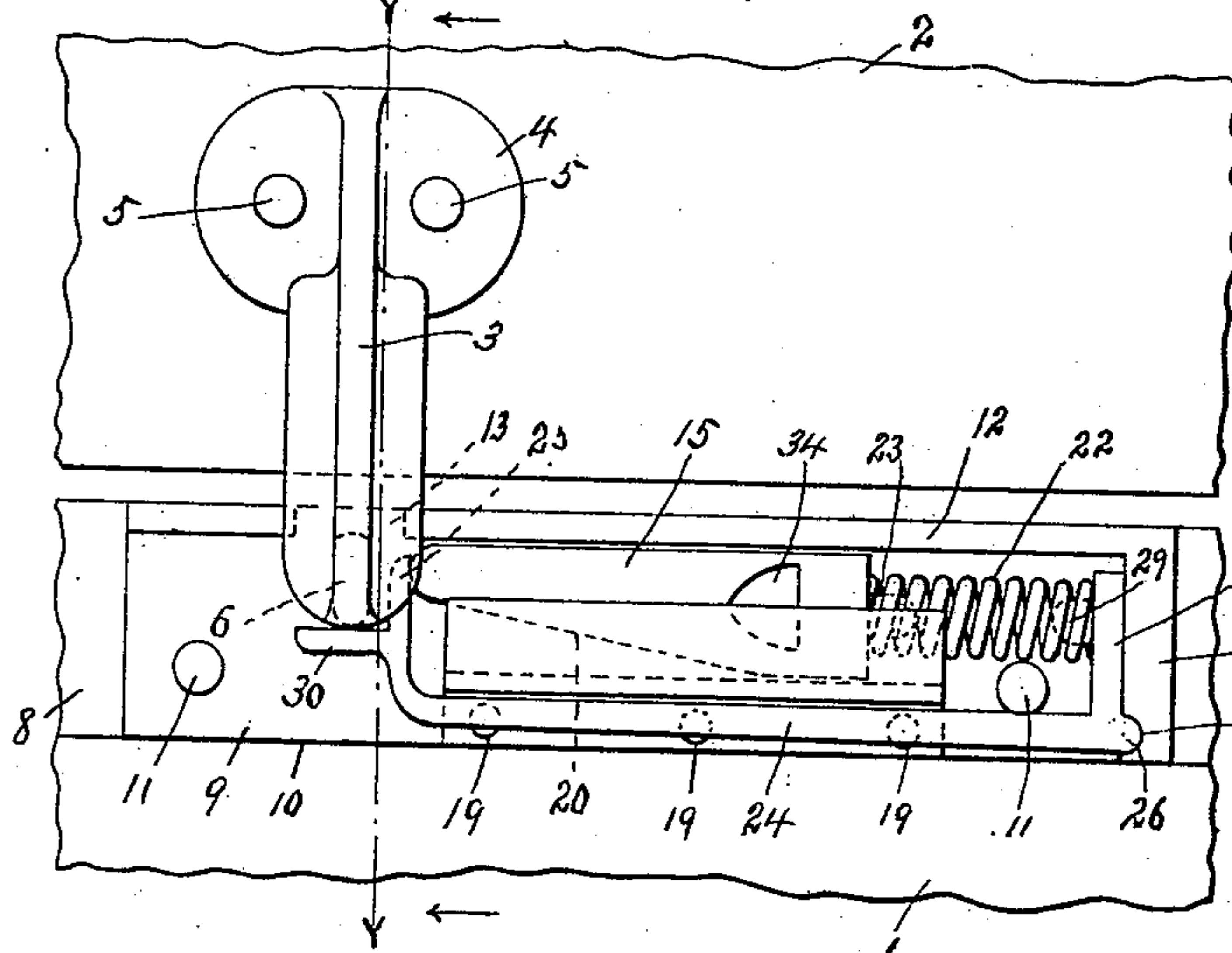


FIG. 4.

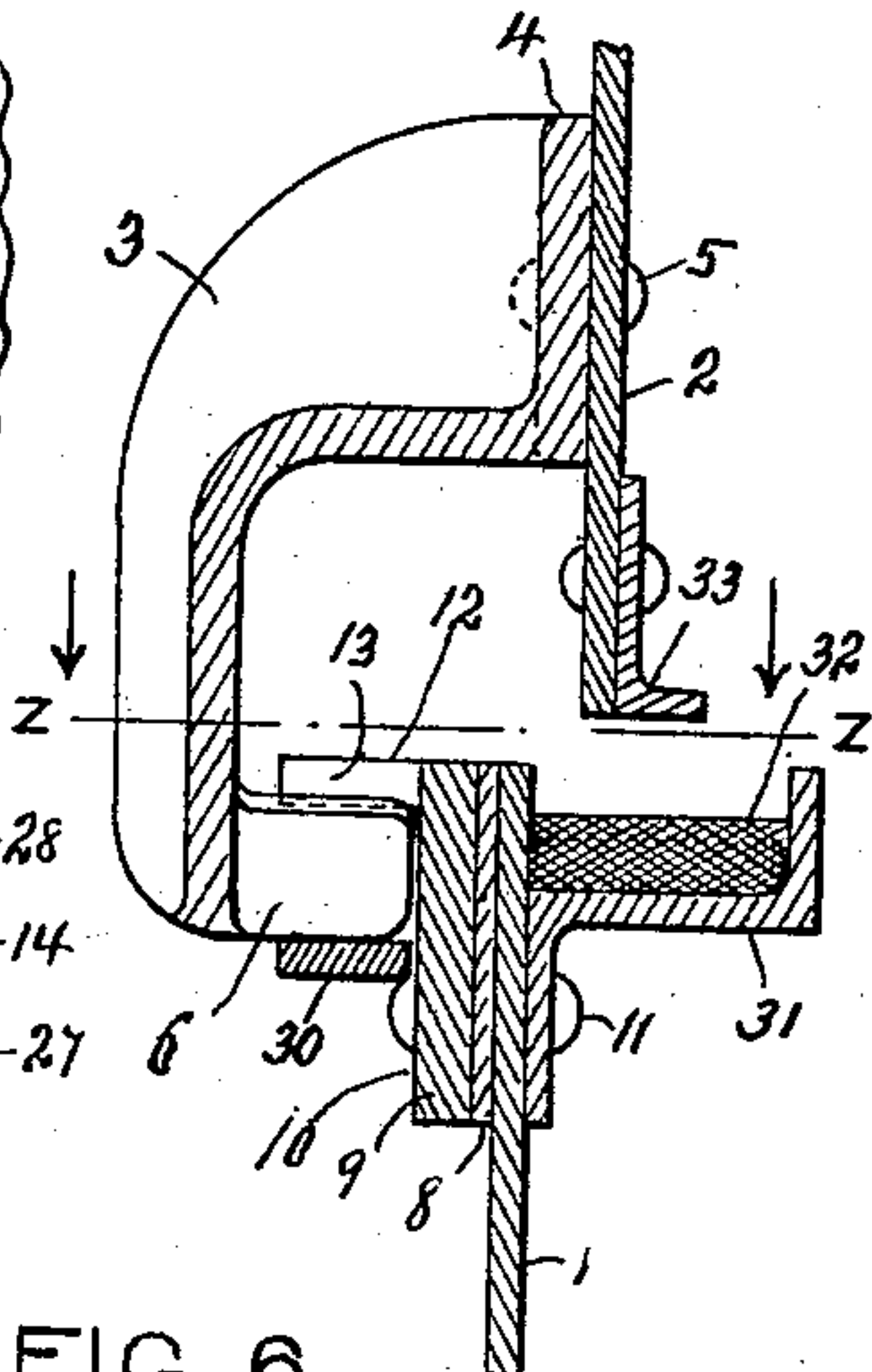


FIG. 5.

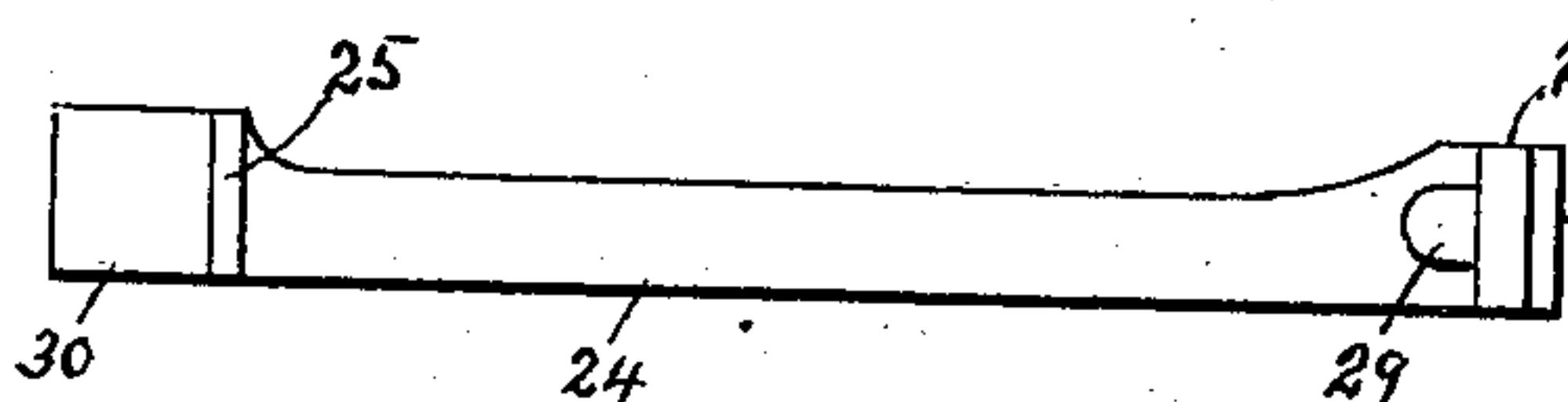
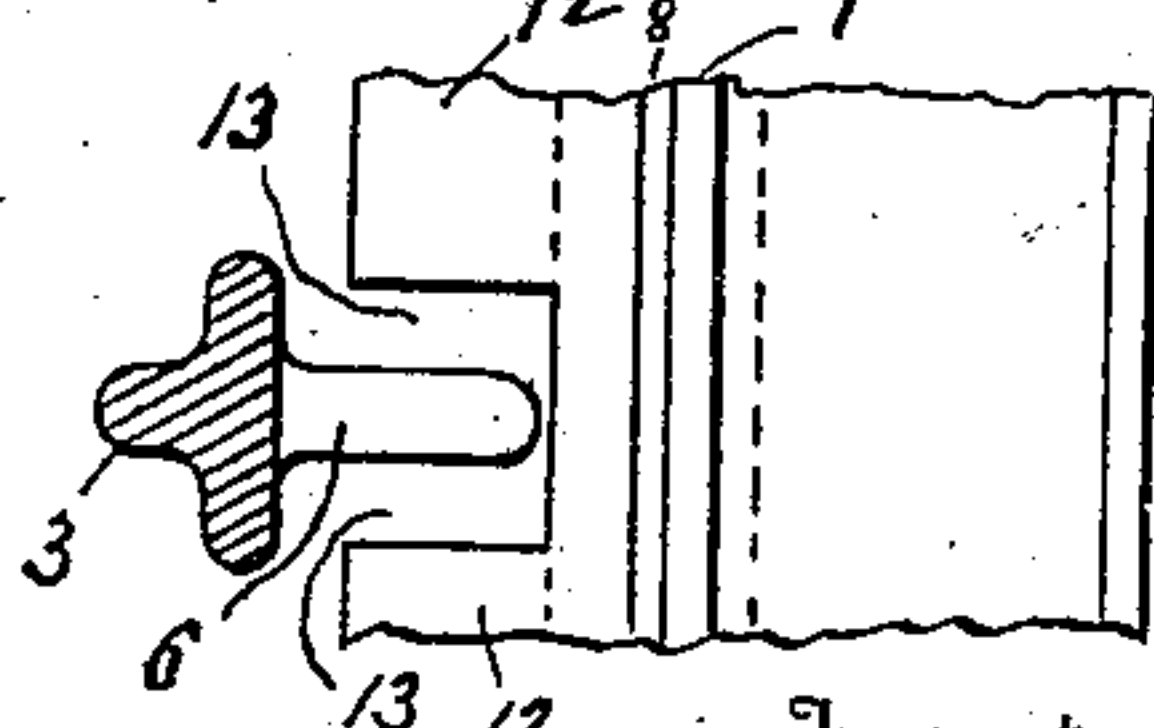


FIG. 6.



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GRAVE-VAULT LOCK.

No. 886,396.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed May 18, 1906. Serial No. 317,573.

To all whom it may concern:

Be it known that we, JOHN ELWOOD MYERS and BERT I. TUTTLE, citizens of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Grave-Vault Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to grave vault locks, or, in other words, to locks for permanently securing in closed condition the body and closure of a metallic grave vault or casket.

The object of the invention is to provide 15 an internal lock which shall automatically lock when the parts are brought together into proper closed relation, said lock being self-adjusting so as to firmly hold the parts together in whatever position they may be pressed to, the structure being simple, strong, and efficient in operation. These structures are provided with a packed or cemented joint, and are squeezed or compressed together to render said joint a tight one, the 25 ultimate relations of the parts differing according to the extent of the compression required for this purpose.

Our invention provides a self-adjusting lock which will always hold the body and 30 closure firmly locked together in any position to which they may have been forced by the clamping or compressing operation necessary to provide the desired tight joint.

The invention consists in certain novel 35 features which will be hereinafter described, and then more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a portion of the interior of a 40 vault or casket, showing one of the locks in closed position; Fig. 2 is a sectional view, taken on the line *x x* of Fig. 1 and looking in the direction of the arrows; Fig. 3 is a view similar to Fig. 1, showing the lock before the 45 parts have been moved together in such a way as to close the lock; Fig. 4 is a sectional view, taken on the line *y y* of Fig. 3 and looking in the direction of the arrows; Fig. 5 is a plan view of the detent lever, detached; and 50 Fig. 6 is a detail sectional view, taken on the line *z z* of Fig. 4 and looking in the direction of the arrows.

In the said drawings, 1 indicates a portion of the body of the vault or casket, and 2 a 55 portion of the closure therefor, which may

be a removable top or end cover, as may be deemed desirable. Around its margin, this closure is provided with a plurality of locking members, the body 1 being provided around its margin with a similar plurality of 60 coöperating locking members, but since these members are all identical in construction, we have shown but one group or pair, it being understood that the others are similarly constructed.

The locking member of the closure 2 is 65 shown as comprising a bracket 3, having a base 4, by which it is secured to the body 2 of the closure by means of rivets 5. This bracket extends first inward and then downward from the inner face of the closure, terminating in an outwardly directed lug 6, which constitutes the actual locking member proper of the closure, and which terminates some distance inward from the body of the 75 vault or casket, leaving sufficient space between its free end and said body for the locking mechanism carried thereby. The body may be provided with the usual reinforcing strip 8, secured to the inner face thereof at its 80 margin, and to this strip there is riveted a housing 9, which carries the engaging member of the body. This housing is preferably constructed as shown, being composed of a base 10, secured to the body 1 by rivets 11, 85 said base having at its upper edge an inwardly extending flange 12, slotted or cut away near one of its ends, as indicated at 13, to permit the passage of the lug 6. At the end farthest from the end where the slot 13 is 90 located, the housing 9 is provided with a vertical flange 14. The housing thus constructed is particularly adapted for the reception therein of the form of engaging member which we prefer, which form is that of a 95 spring-actuated longitudinally sliding bolt. This bolt is indicated by the reference numeral 15, and it is arranged to slide in suitable guideways in the housing 9, moving transversely with respect to the slot 13. 100 Preferably, there is secured to the base 10 of the housing a guide comprising a part 16 parallel with the base 10, a part 17 at right angles therewith and parallel with the flange 12, these four parallel members serving to guide 105 the bolt 15, which is rectangular in cross section, and a flange 18, secured to the base 10 by rivets 19 or in any other suitable manner. The bolt 15 is beveled or inclined on its under side, as indicated at 20, its forward end, 110

which is preferably rounded, as indicated at 21, being of a minimum thickness, the thickness or depth of the bolt increasing rearwardly and thus giving to the engaging portion thereof a wedge form.

As already stated, the engaging member acts normally to move into engaging position and we prefer to employ for this purpose a spring. In the present instance, a coiled spring 22 is shown as employed for this purpose, said spring bearing against the rear end of the bolt, which is provided with a centering stud 23, which enters the coil of the spring and holds the same in position.

In conjunction with the bolt there is employed a detent which holds the same positively in unlocked position until disengaged therefrom. This detent is shown in the present instance as comprising a lever 24, provided at its free end with a projection or part 25, which lies normally in front of the forward end of the bolt, as shown in Fig. 3, preventing it from being moved forward by the spring 22. The lever is pivoted at its other end to the housing, this connection being conveniently effected in the construction shown by providing on the rear end of the lever a half round rib 26, which fits in a correspondingly shaped groove 27 in the flange 14 of the housing. The lever extends from its pivotal point underneath the part 16 of the guide and beyond the same to a point where it rises up in front of the bolt in the form of the projection 25. At its rear end the detent lever is provided with an upwardly extending arm or portion 28, against which bears the other end of the spring 22, the arm 28 being provided with a centering stud 29 which enters the coil of the spring to hold it in position at that end. By this construction we are enabled to employ a single spring for actuating the bolt and holding the detent lever in operative position, the construction and arrangement being also such that the disengagement of the detent lever increases the compression and operative efficiency of the spring just before it operates to shoot the bolt. At its free end, in front of the projection 25, the detent lever is provided with a trip projection 30, arranged in the path of the lug 6.

The body of the vault is provided externally with the usual channel flange 31, to receive a suitable compressible packing or cement 32, while the closure has a flange 33 secured to its margin and adapted to bear upon said packing or cement when the parts are brought together.

Normally, the portions of the locking mechanism upon the body of the vault or casket are in the position shown in Fig. 3, in which position the engaging member or bolt is held back in inoperative position by the detent, which latter is held in operative position by the spring. When the closure is ap-

plied to the body of the vault or casket, the lug 6 passes down through the slot 13 of the housing and comes into contact with the trip projection 30 of the detent lever, moving the free end thereof downward. When the lug 6 has pressed the free end of the detent lever 24 down sufficiently to draw the same downward far enough to permit the spring to shoot the bolt forward, said bolt will pass above and engage the lug 6, its wedge-like form permitting it to move forward into such engagement to an extent proportionate to the extent to which said lug is depressed below the flange 12 of the housing, thereby insuring a firm engagement of the bolt and lug. After the locking devices are thus engaged, the two parts of the vault or casket are permanently locked together, since the locking mechanism is wholly internal and therefore inaccessible without destroying the structure. In practice, a clamping or compressing device is employed to squeeze the flange 33 firmly down on the packing or cement 32 in the channel flange 31, this operation being performed after the closure has been placed in position on the body and the several bolts 15 have duly engaged the corresponding lugs 6. A suitable compressing tool squeezes the flanges 33 and 31 together, the operator starting at one point of the casket and working entirely around the same until he is assured that the parts are brought so firmly together as to insure a tight joint. During this operation, as each lug 6 is forced by the compression further inward beyond the corresponding flange 12, the spring 22 acts to force the wedge-shaped bolt 15 further inward over the lug, keeping its beveled or inclined edge 20 always in contact with said lug and thus taking up any space that may be gained by the compressing operation. The internal locking bolts are therefore self-adjusting, accommodating themselves to the exact position to which the closure and body may have been brought by the particular amount of compression employed in any given case, and holding the parts in that position after the compressing operation has been completed, preventing the closure from moving outward again when the compressing device is removed. We are therefore enabled to do away with the permanent compressing clamps on the exterior of the structure ordinarily employed for the purpose of maintaining a tight joint, the internal locks not only accomplishing their usual locking functions, but also serving to maintain the joint in adjusted position.

The bolt is provided with a recess 34 in its side, accessible through the space between the flanges 16 and 12 for the introduction of a suitable tool by means of which the bolt may be forced back during the operation of setting the parts into the position shown in Fig. 3. This materially facilitates this oper-

ation since the swinging up of the detent projection 25 in front of the bolt interferes with the forcing back of the bolt by pressure directly upon its front end.

5 We wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

10 Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A structure of the character described, comprising a body and a closure, one of said parts having a lug to be engaged, the other of said parts having an engaging member acting normally to move into engaging position with respect to said lug, and a detent acting normally to prevent such normal movement of the engaging member, said detent being arranged in the path of a part moving in unison with the lug, whereby the bringing together of the body and closure into closing position will disengage the detent and free the engaging member, substantially as described.

2. A structure of the character described, comprising a body and a closure, one of said parts having an engaging lug, the other of said parts having a spring-actuated engaging bolt acting normally to move into engaging position with respect to said lug, and a detent normally engaging said bolt to prevent such movement and adapted to be engaged by said lug to release said engaging bolt, substantially as described.

3. In a structure of the character described, comprising a body and a closure, one of said parts having a lug to be engaged, the other of said parts having a spring-actuated sliding bolt acting normally to move into engaging position, and a pivoted and spring-actuated detent lever normally engaging said bolt to prevent its movement, said detent lever having a part lying in the path of the lug, substantially as described.

4. A structure of the character described, comprising a body and a closure, one of said parts having a lug to be engaged, the other of said parts having a housing provided with a guideway, a bolt mounted to slide in said guideway, a detent lever pivoted to said housing at one end, engaging the bolt at its other end, and having a part lying in the path of the lug immediately in front of the bolt, and a spring interposed between said bolt and detent lever and acting to move the bolt into engagement with the lug and to hold the detent lever in engagement with the bolt to prevent such action, substantially as described.

5. A structure of the character described, comprising a body and a closure, one of said parts having a lug to be engaged, the other

of said parts comprising a sliding engaging bolt, a pivoted detent lever having a detent projection in front of the bolt and an abutment projection in the rear of the bolt, and a spring interposed between said bolt and abutment projection, the detent lever having a part lying in the path of the lug, whereby, when the free end of said detent lever is depressed to disengage it from the bolt, the spring is compressed to exercise a greater actuating force upon the bolt, substantially as described.

6. In a structure of the character described, the combination, with a body and a closure provided with a compressible joint, of locking mechanism which automatically adjusts itself to the compression employed, said mechanism comprising a lug on one of said parts and an engaging member on the other of said parts acting normally to move into engaging position, one of said members being beveled or inclined, and means controlled by said closure for bringing said member into engagement with said lug, substantially as described.

7. A structure of the character described, comprising a body and a closure provided with a compressible joint, one of said parts being provided with a lug to be engaged, the other of said parts being provided with a spring-actuated sliding bolt having a beveled or inclined surface to bear upon the lug to render the lock self-adjusting, and means actuated by said closure for controlling said bolt substantially as described.

8. In a structure of the character described, the combination, with a part having an engaging lug, of a part having a spring-actuated sliding engaging bolt and means for guiding the same, said bolt being beveled or inclined on the side thereof which engages the lug, and a detent acting normally to prevent the engaging movement of said bolt, said detent being disengaged by the lug when the parts are brought together, substantially as described.

9. In a structure of the character described, the combination, with a body and a closure provided with a compressible joint, of self-adjusting internal locking mechanism for uniting said parts, the same comprising engaging members on the respective parts, and means whereby said engaging members are caused to automatically lock said parts against a movement of separation at any point of the range of compression of the joint, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN E. MYERS.
BERT I. TUTTLE.

Witnesses:

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HARRIET L. HAMMAKER.