No. 896,260. PATENTED AUG. 18, 1908.

O. WIEGMANN.

GRAVITY LOCK.

APPLICATION FILED DEC. 10, 1907.

2 SHEETS—SHEET 1.

Fig. 1

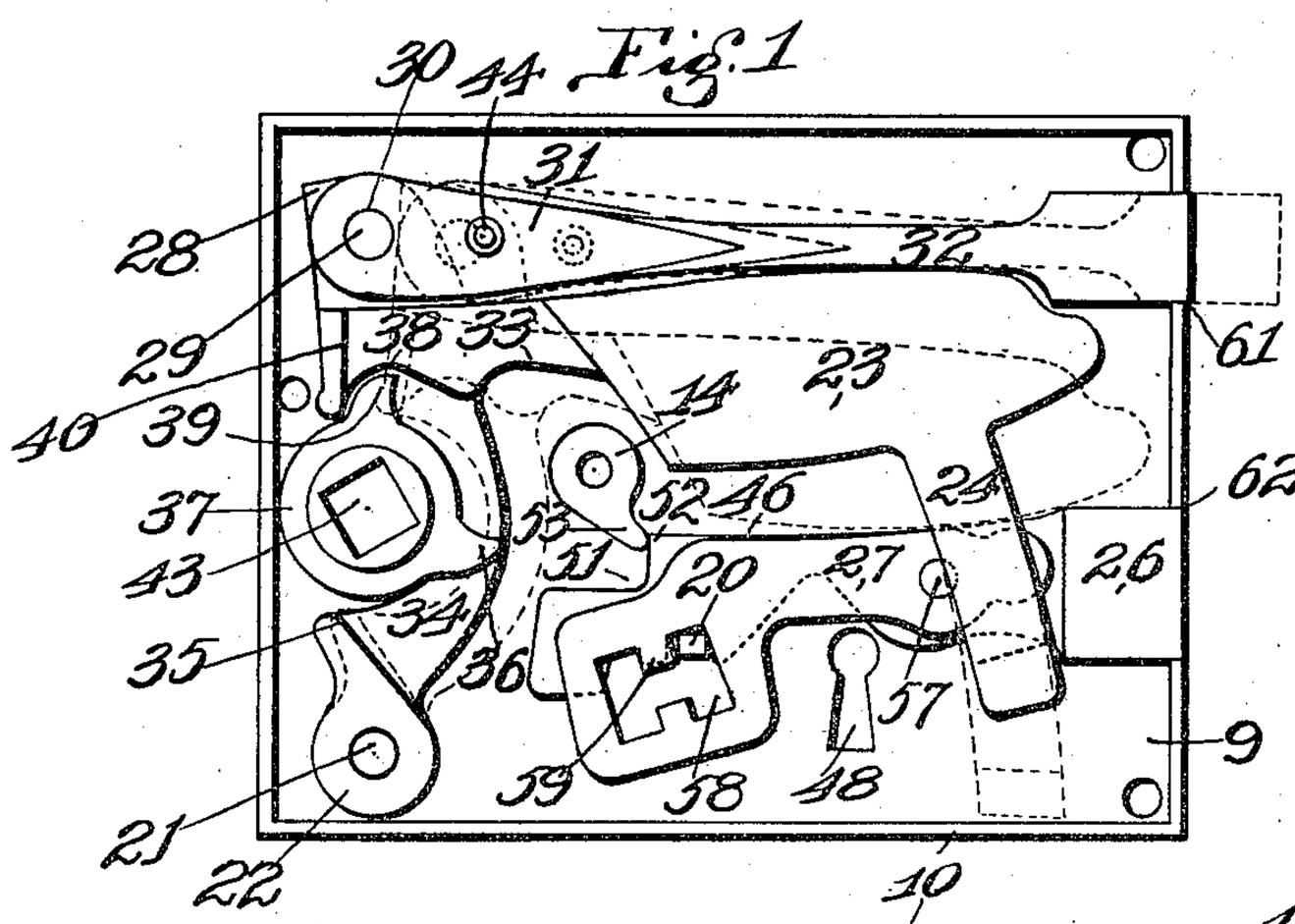


Fig. 2

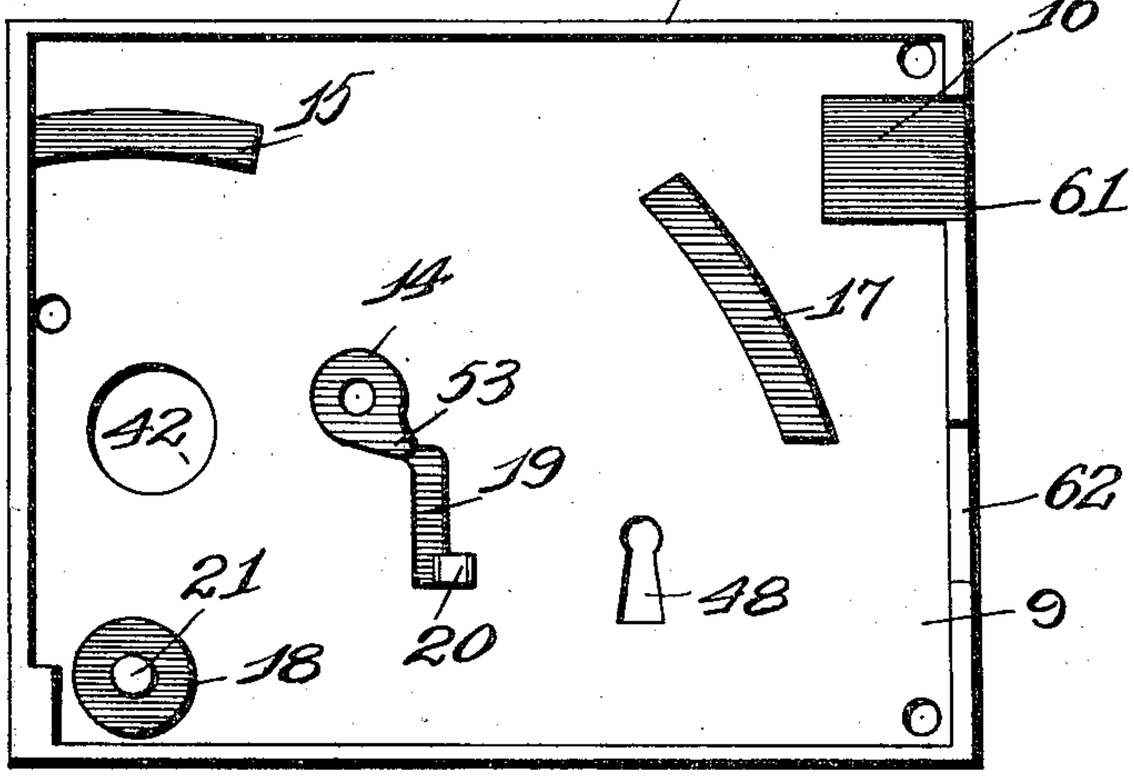
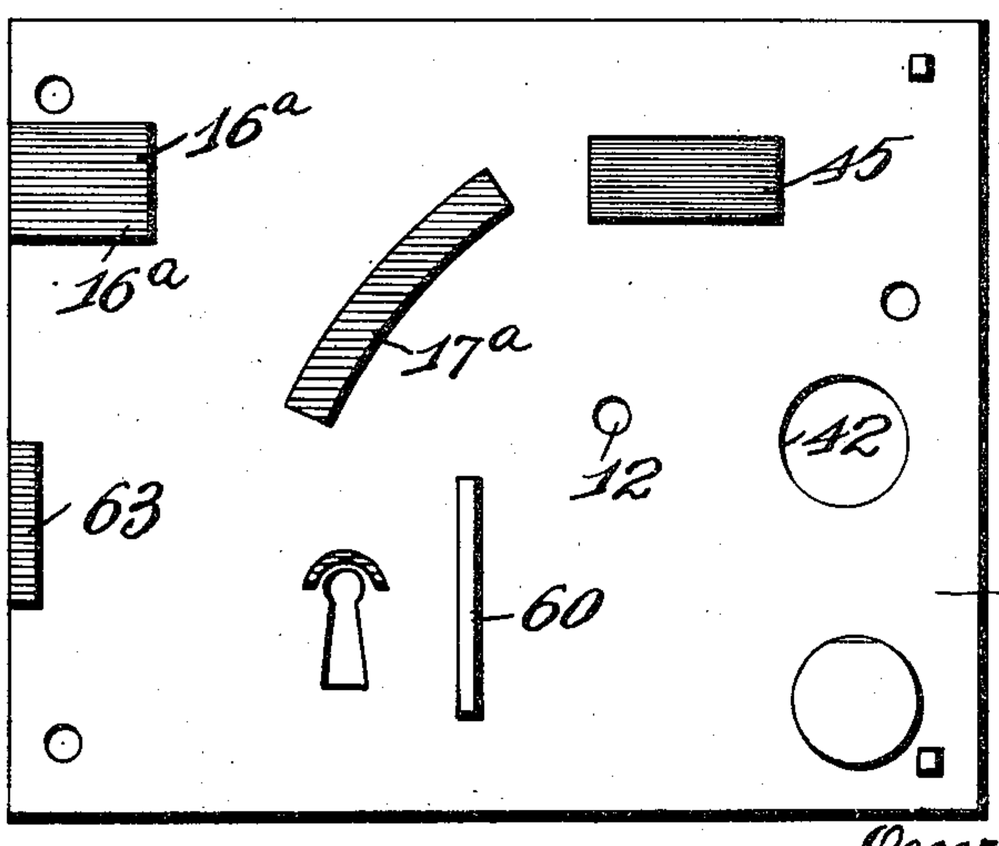


Fig. 3.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 4

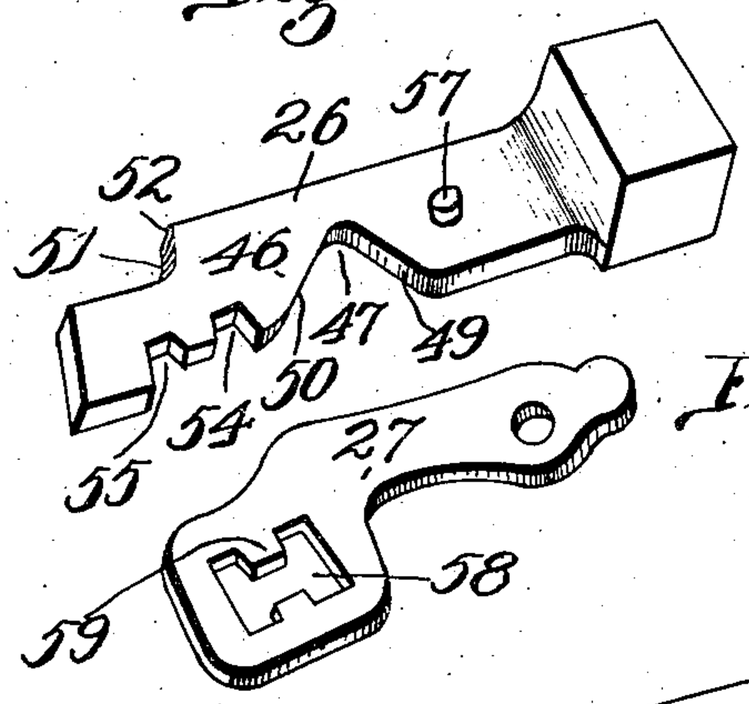


Fig. 5

Fig. 6.

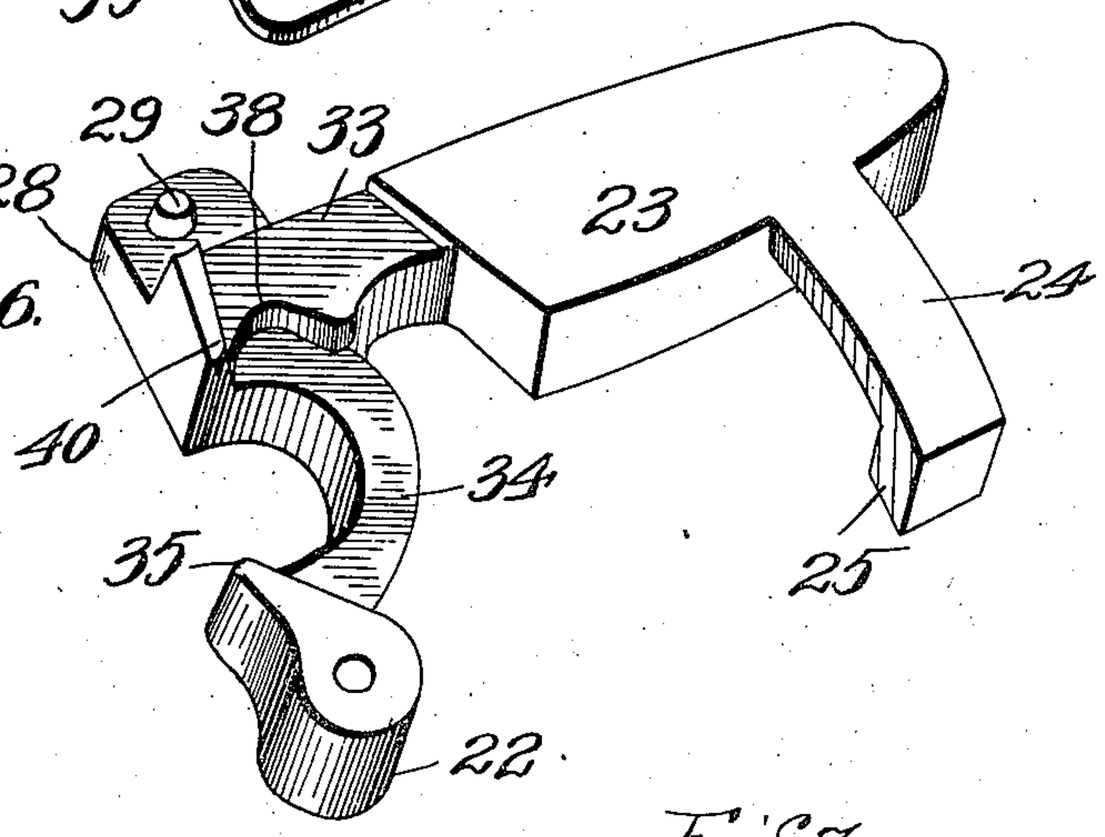


Fig. 7.

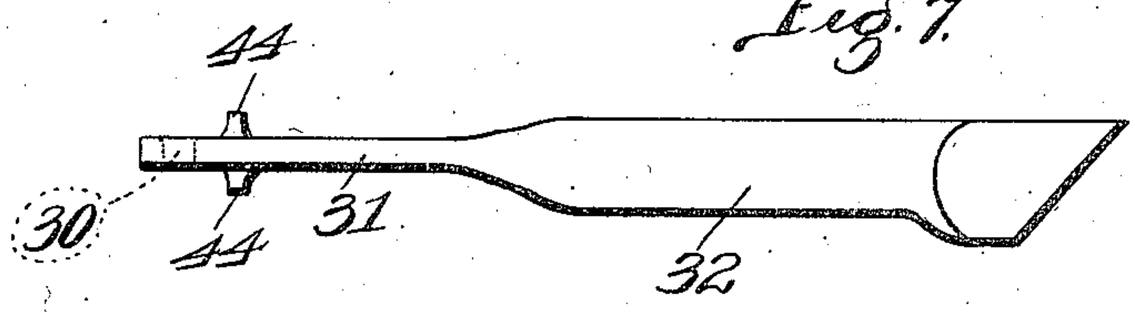
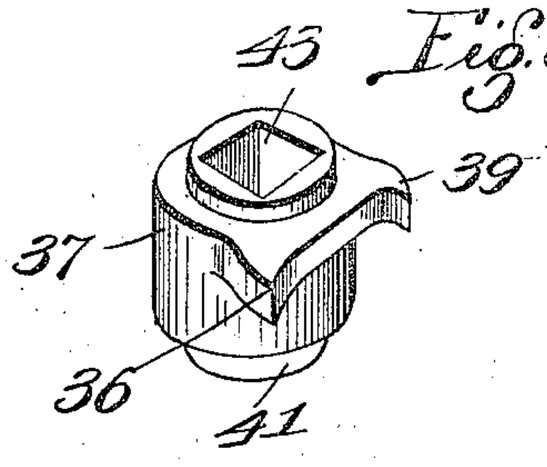


Fig. 8.



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UNITED STATES PATENT OFFICE.

OSCAR WIEGMANN, OF ST. LOUIS, MISSOURI.

GRAVITY-LOCK.

No. 896,260. Specification of Letters Patent. Patented Aug. 18, 1908.

Application filed December 10, 1907. Serial No. 405,967.

To all whom it may concern:

Be it known that I, OSCAR WIEGMANN, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Gravity-Locks, of which the following is a specification.

This invention relates to improvements in gravity locks, and consists of the novel arrangement construction and combination of parts and will be fully hereinafter described and claimed.

The object of my invention is to construct a lock to dispense with the use of springs for actuating the several parts, and in lieu thereof to adapt a weight member for providing a positive movement to the latch.

A further object of my invention is to construct a lock mounted within a suitable housing, with bosses formed integral on the inner surface of the housing, and on the same operate the several moving parts comprising the latch and lock mechanism, so as to overcome friction.

Figure 1, is a front elevation of my invention, with the cover or cap plate removed, showing the several parts in an unlocked position. Fig. 2, is a front elevation of the housing with the latch and lock operating mechanism removed. Fig. 3, is a bottom plan view of the cover or cap plate. Fig. 4, is a detail perspective view of the lock bolt. Fig. 5, is a detail perspective view of the locking tumbler. Fig. 6, is a detail perspective view of the latch operating weight member. Fig. 7, is a side elevation of the latch and Fig. 8 is a detail perspective view of the knob spindle hub.

In the construction of my invention, I provide a housing 9, having integral projecting walls 10, and on the top of the walls 10, is placed a cover or cap plate 11.

The cover or cap plate 11, is held in position upon the housing by means of a screw passing through the opening 12, formed in the cover or cap plate, and inserted into an internally screw threaded opening formed in a lug 14, formed integral with the housing 9.

On the inner surface of the housing 9, are formed integral projections 15, 16, 17 and 18, and on said housing is also formed an integral projection 19, which connects the bottom of the lug 14, with the vertical projection 20. On the several projections rest the several operating parts, comprising the lock mechanism, and in order to prevent friction, the surfaces of the several projections are ground and formed absolutely smooth.

On the projection 18, is formed a projecting pin 21, over which is placed the portion 22 of the latch operating weight member, and which acts as a pivot for the same.

The latch operating weight member consists of the weight 23, provided with a projection arm 24, the outer end of said arm having a downwardly projecting portion 25, the said arm arranged to straddle the bolt 26, and tumbler 27. The latch operating weight member is also provided with an ear 28, on which is formed a trunnion 29, over which is inserted the eye 30 formed in the flattened end 31, of the latch 32.

The weight 23, and the ear 28 are connected together by a neck 33, and the said neck and portion 22, is connected by the curved arm 34. The portion 22 is provided with a tooth 35, with which is designed to come in contact the prong 36 formed on the knob spindle hub 37, and the neck 33 is provided with a depression 38, in which freely operates the prong 39 formed on hub 37, and which is designed to come in contact with the tooth 40 formed on the neck.

The curved arm 34, is so shaped as to practically encircle the hub 37, and the said hub is provided on each end with a circular projection 41 of smaller diameter than the hub proper, and which projects through the openings 42 formed in the housing, and cover, through the hub is formed a rectangular aperture 43, through which the knob spindle is inserted, and by which the hub is operated, bringing the prongs 36 and 39 alternately in contact with the teeth 35, and 40 for bringing the latch 32 in an unlocked position.

The flattened end 31 of the latch 32 is provided with a pair of projecting lugs 44, and are for the purpose to come in contact with the flattened projection 45 formed on the inner surface of the cover, so as to prevent the latch from becoming disconnected from the trunnion 29, and the object of having the lugs 44 formed on the opposite sides is to perform the same function, should it be desired to reverse the latch so as to accommodate the position of the keeper placed in the door frame.

The bolt 26, has a flattened portion 46 in which is formed a "V" shaped recess 47, in which the web of the key is to be inserted

after passing it through the key hole 48 and come in contact with the inclined surface 49 and 50. For locking and unlocking the bolt, the end of the flattened portion is provided with a recess 51, forming a shoulder 52 which comes in contact with the finger 53 formed on the lug 14, acting as a stop for the bolt, and said recess is of sufficient depth to permit the bolt to be practically raised by the web of the key when turning the same, removing the flattened portion of the bolt away from the projection 20, which fits in the recess 54 formed in the flattened portion, while the bolt is being placed in a locked position, and when the key is removed, the bolt by means of its own gravity is permitted to lock itself, by having the recess 55 fit over the projection 20, the seating of recesses of the bolt is reversed when unlocking the bolt.

As a safe guard and to prevent a common key from operating the bolt, I provide a locking tumbler 27, which is pivotally mounted over the trunnion 57, formed on the bolt and in said tumbler is provided a recess 58, divided by prongs 59 and the said tumbler is so arranged as to operate in unison with the bolt when the proper formed key is inserted, and the said recesses seating themselves upon the lug 20, to assist in retaining the bolt in its locked and unlocked position.

To hold the bolt and tumbler in position within the housing, I provide a projecting web 60, on the under surface of the cover, and is of sufficient depth to contact with the tumbler, yet permit the same to freely operate.

The lower surface of the projection 22 contacts with the projection 18 formed in the housing, the under surface of the ear 28 riding upon the projection 15, and the under surface of the weight 23, contacting with the projection 17, the upper surface of the weight 23 contacting with the projection 17^a, formed on the under surface of the cover, and the toothed end of the latch 32, contacting with the projection 16, of the housing, and the projection 16^a of the cover.

The toothed end of the latch 32, operates through an opening 61, formed in the end of the housing, and the locking end of the bolt operating through an opening 62, formed in the end of the housing, and contact with the projection 63 formed on the under side of the cover, in alinement with the opening 62.

Having fully described my invention what I claim is:

1. A device of the class described, comprising a housing, a latch operating weight member, a latch connected to and operated by the latch operating weight member, a plurality of projections formed in the housing on which the several parts operate to avoid friction, the said latch operating weight member, pivotally mounted in the housing, a knob spindle hub, provided with projecting prongs, to contact with and operate the weight member, to release the latch from its latched position, substantially as specified.

2. A device of the class described comprising a housing, a cover, a plurality of projections formed in the housing and on the inner surface of the cover, a latch operating weight member pivotally mounted within the housing, and supported upon the projections, a latch connected to and operated by the latch operating weight member, a double pronged knob spindle hub, located in the housing, and arranged to contact and operate the latch operating weight member, together with the latch, substantially as specified.

3. A device of the class described comprising a housing, a plurality of projections formed in said housing, a cover, a plurality of projections formed on the inner surface of the cover, a latch operating weight member pivotally mounted within the housing, a latch connected to and operated by the latch operating weight member, a knob spindle hub provided with a plurality of prongs, located within the housing, teeth formed upon the latch weight operating member, with which is brought in contact with the projections on the hub, the several parts resting and operating upon the projections formed in the housing, and on the cover, permitting the several parts to operate freely, substantially as specified.

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

OSCAR WIEGMANN.

Witnesses:

ALFRED A. EICKS,

WALTER C. STEIN.