

(No Model.)

B. S. MILES.
LOCK.

No. 525,225.

Patented Aug. 28, 1894.

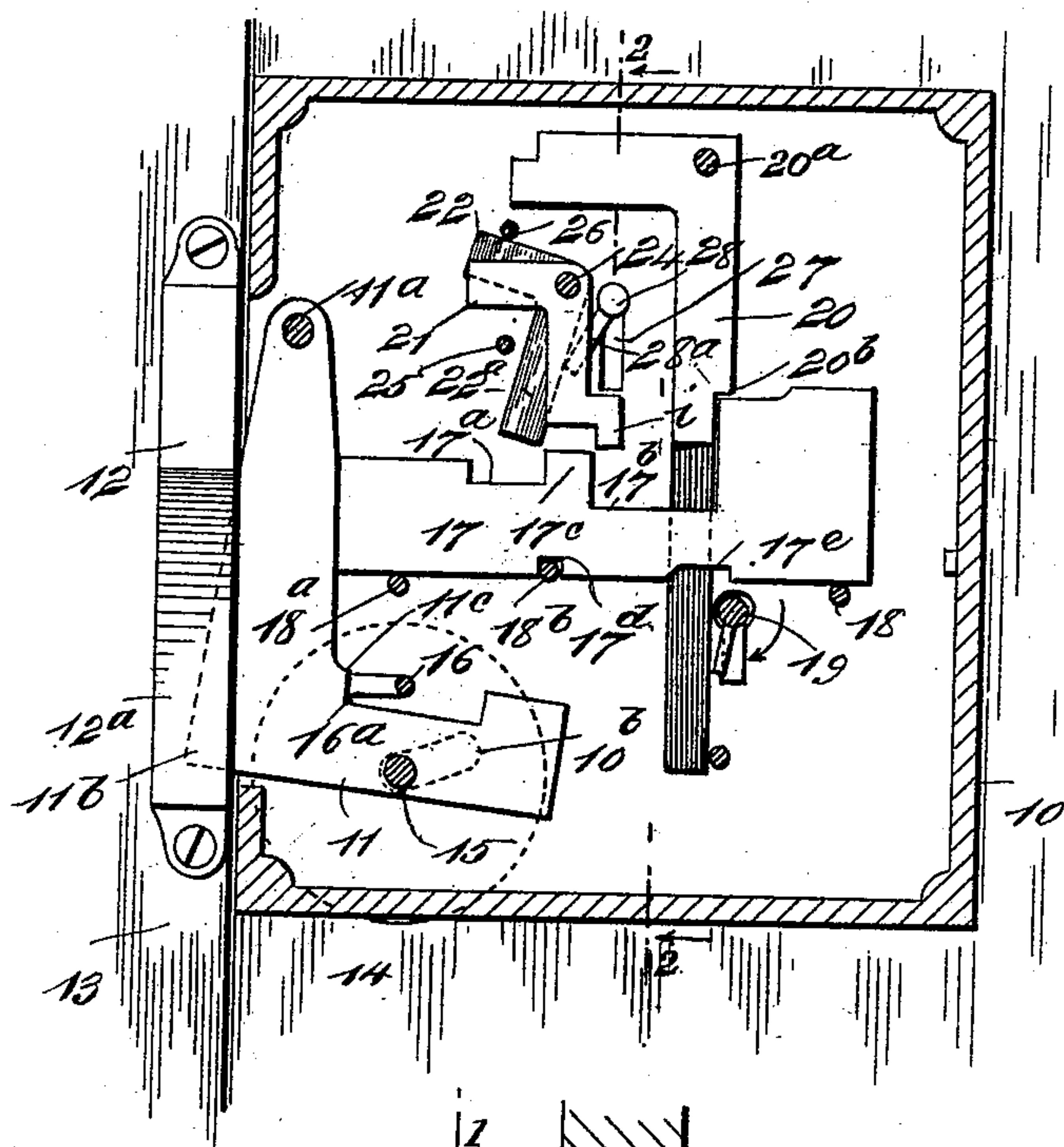


Fig. 1

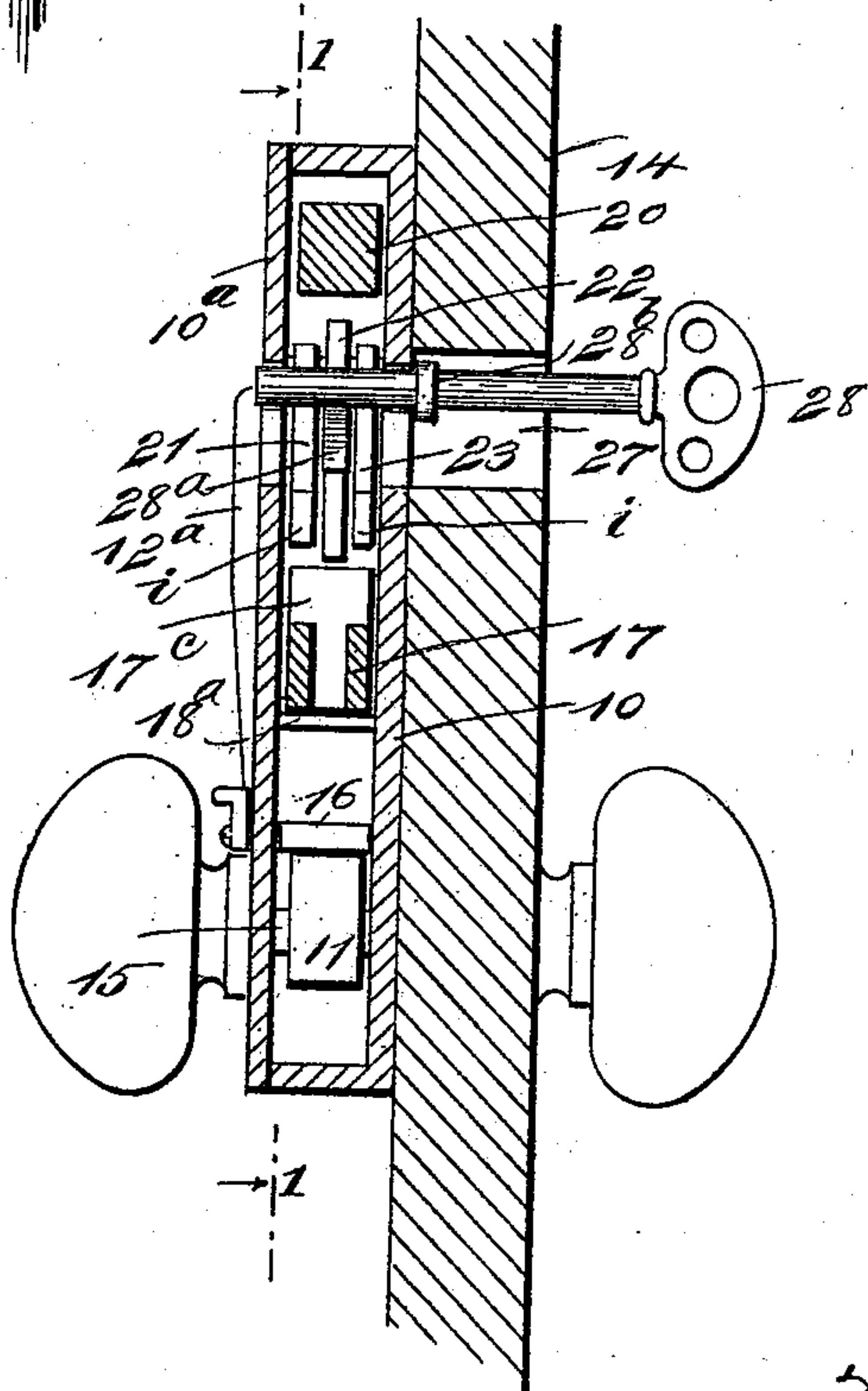


Fig. 2

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LOCK.

SPECIFICATION forming part of Letters Patent No. 525,225, dated August 28, 1894.

Application filed May 4, 1894. Serial No. 510,067. (No model.)

To all whom it may concern:

Be it known that I, BRADFORD S. MILES, of Gray's Summit, in the county of Franklin and State of Missouri, have invented a new and useful Improvement in Locks, of which the following is a full, clear, and exact description.

My invention relates to an improvement in locks for doors, and has for its object to provide an additional feature of improvement for the door lock patented by me May 16, 1893, and numbered 497,588, whereby the security of said patented device is enhanced in a simple, cheap and practical manner.

To this end, my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both views shown.

Figure 1 is a sectional side view of the patented lock having the present improvements embodied, taken on the line 1—1 in Fig. 2; and Fig. 2 is a transverse sectional view of the lock and improvements, on the line 2—2 in Fig. 1.

The case 10, of the lock is rectangular in form, and has one side 10^a made removable in the usual manner, to permit access to interior parts. A portion of the edge wall of the case 10, is spaced from the side wall whereon the said edge wall is integrally formed, so as to produce an elongated opening or slot which coincides with the free edge of the door when the lock is secured in place on its side. The slot mentioned is of proper dimensions to permit the free rocking movement of the pivoted latch bolt 11 in it, said L-shaped latch bolt being hung from a transverse pintle bolt or stud 11^a within the case, at a point which will allow its angular corner 11^b to be swung through the case slot it is opposite, and have a latching engagement with a hasp plate 12. The hasp plate is of the usual form to adapt it for a secure attachment by screws to the jamb 13 of a door 14, as indicated in Fig. 1, said plate being provided with an upwardly and outwardly projecting rib 12^a on its outer face along the edge that in service is nearest to the latch-bolt 11,

and is adapted to receive the angular portion 11^b of the said latch-bolt, when the door is swung toward the jamb, and to vibrate said bolt so as to permit the door to be closed, and the bolt 11 to have a latched engagement with the hasp plate.

At a suitable distance from the slotted edge wall of the case through which the latch bolt 11 normally projects a transverse knob spindle 15, is inserted through a perforation in the bolt, and also passes through opposite slots 10^b in the side walls of the case, one slot being indicated by dotted lines in Fig. 1. This slot is curved and has its radial center in the axis of the pivot bolt 11^a, so that the knobs, which are attached on the ends of the spindle, will by their weight serve to carry the spindle to the lowest end of the slot, and aid in projecting the corner 11^b of the latch bolt, as indicated by dotted lines in Fig. 1, and also afford convenient means for manually releasing the latch bolt from the hasp plate by its rearward vibration.

A simple bolt-securing device, which is not easily reached from the outside of the door, consists of the small transverse shaft 16, that has its ends journaled in the side walls of the case 10, at a suitable distance from a shoulder 11^c, that is formed on the upper edge of the horizontal member of the L-shaped latch bolt 11, so that the lip 16^a that laterally projects from the shaft body, will when turned toward the shoulder mentioned, have a loose engagement with it, and thus prevent an inward movement of the latch-bolt, a small handle piece on the inner end of the shaft affording means for its rotatable adjustment. A tumbler bar 17, is furnished as additional means for locking the bolt 11 against recession, and may be operated to release said bolt from either side of the door; as shown it is constructed of a flat metallic bar having such a thickness as will permit it to be freely slid between the side walls of the lock case. The bar 17, rests on the transverse studs 18, and is notched on the upper edge at two points, producing open recesses 17^a, 17^b, leaving an integral abutment ear 17^c, standing between the recesses. The forward end of the tumbler bar 17, when the latter is in forward adjustment, is designed to impinge on the rear edge

of the upright member of the latch bolt 11, and retain it from a rearward swinging movement.

To adapt the bar 17 for holding the latch bolt as stated, a locking notch 17^d is formed in the lower edge of the tumbler bar 17, at a proper point, which notch will receive the body of the cross stud 18^b that is projected from one wall of the case toward the loose wall of the same, such an engagement of the tumbling bar serving to lock it against longitudinal movement, and as the front end of the bar is then in contact with the pendent member of the latch bolt, the latter will be locked in forward adjustment by the tumbler bar. A suitable notch is formed in the lower edge of the bar 17, at 17^e, to accommodate a common key 19, the bits of which will be adapted to engage with a shoulder on the bar that is the rear wall of the notch mentioned, the length of the key bits being so proportioned, that when the key is turned in the direction of the curved arrow in Fig. 1, the tumbler bar will be elevated sufficiently to release it from the stud 18^b, and then be slid rearwardly in an obvious manner when the key bits impinge the rear shoulder of the notch 17^e. A check bar 20, is part of the lock mechanism, and comprises an L-shaped flat metallic piece that is supported at its angular corner by a pivot stud 20^a, so that its longer limb will hang vertically.

The tumbler bar 17 is centrally slotted lengthwise in the notch 17^b, to receive the pendent limb of the check bar 20, which limb is reduced in thickness for a portion of its length to allow it to freely vibrate in the slot it occupies, and move toward the ear 17^c when impinged by the key 19, the bits of which are separated by a center slot so that the two bits thus produced may loosely embrace the pendent limb of the check bar and engage their ends with the notched portion of the tumbler bar. A shoulder 20^b, formed on the rear vertical edge of the bar 20, has a locked contact with the top of the tumbler bar at the rear edge of the recess 17^b, and serves to lock the tumbler bar from lifting until the check bar is forwardly vibrated by a proper key.

The parts of the lock which have been described are identical with those shown in my patented lock No. 497,588 which was further provided with a pivoted block that hung above the ear 17^c, and prevented it from an upward movement that is essential to release the tumbler bar from its locking stud, said block being released by a wedge-shaped key.

The present invention comprises improved means to retain the tumbler bar from being lifted until the securing device is manipulated by a proper implement in the form of a key. The improved features of construction consist of three or more thin blocks 21, 22, 23, that are hung from a single pivot stud or bolt 24, which is transversely formed or secured on the side walls of the lock, at a proper distance above the ear 17^c, so that said blocks

will hang pendently above the latter. The three flat blocks are of about the same thickness, and when arranged on the stud 24, have such a combined thickness as will permit them to vibrate freely on said stud.

Two of the blocks, indicated by the reference integers 21 and 23, and which are located one on each side of the block 22, have a substantially Z-form, as represented by one block 21 in Fig. 1. The central locking block 22, is given an L-shape, and has its body perforated near its right angular corner for a loose engagement with the stud 24, so that its longer limb 22^a will hang perpendicularly above the ear 17^c, and close to this ear when the tumbler bar 17 is locked upon the stud 18^b, which will prevent the tumbler bar from being elevated when the block named is in normal adjustment. The blocks 21, 23, are shorter than the center block 22, and are similarly hung on the stud 24, by the loose engagement therewith of their transversely-perforated bodies near the upper right-angular corners of the same, the dimensions and weights of these limbs being so proportioned that the blocks will hang with their upper members in a horizontal position. The blocks 21, 23, each have a depending toe *i*, formed on the lower horizontal limb at the outer end, which produces an abutment on these members that will impinge on the adjacent horizontal edge of the ear 17^c, if the blocks 21, 23, or either of them receive vibration toward the upright limb of the latch bolt 11, these blocks being designed to act as guards or baffle pieces to prevent the central block 22, from being independently moved except by a proper key. A transverse stud or bolt 25, is located forwardly of, and properly removed from the upright members of the locking blocks 21, 22, 23, so as to check said blocks from too great a rearward vibration, a similar stud or bolt 26 being placed in the lock case and fastened to its side wall or walls above the upper horizontal members of the blocks, at such a distance therefrom, as will allow the latter to receive vibration, but will prevent an improper rotative movement of the blocks toward the front edge of the case 10. A key-hole 27 is formed oppositely in each side of the lock case parallel with and near to the upright member of the locking block 22, so that a key 28 may be introduced within the lock case. When the lock is provided with three blocks such as 21, 22, 23, the key 28 has a single bit 28^a laterally formed on it, at such a distance from the collar 28^b, that is circumferentially produced on the key shank, as will locate the bit directly opposite the center or locking block 22, which said bit equals in thickness, this location of the bit being produced if the key 28 is introduced from either side of the lock case 10.

It will be seen that when the parts of the lock are in a locked condition, the locking block 22 will hang directly above the ear 17^c, and requires the use of the key 28 having a

bit 28^a of exact proportions to enable the operator to remove the center locking block and avoid swinging either of the guard blocks 21 or 23 toward the ear 17^c, as such a movement even of slight degree, will locate the depending toe *i* of each or either block above the ear 17^c, which will prevent the tumbler bar 17 from elevation to release it from the stud 18^b, but if the bit of the key 28 is thin enough to escape lateral contact with the guard blocks 21, 23, the tumbler bar 17 may be readily actuated by the main key, after the other key has been manipulated to remove the intermediate block 22, from above the ear 17^c.

It will be evident that the number of pendent and peculiarly formed blocks which are essential features of the present invention may be increased, or be reduced to two blocks, an increased number resulting in greater security if two locking blocks are introduced between three guard blocks in a manner similar to the arrangement of such parts as is shown and as has been described.

It is claimed for the additional improvements, that the guard blocks and key to move the intermediate locking block of the set, greatly increase the security of the lock mechanism embodied in Patent No. 497,588, without materially adding to the cost of producing the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a lock case, a pendent vibratile latch bolt therein, and a sliding tumbler bar adapted to impinge the latch bolt, of two guard blocks and an intermediate locking block arranged to pendently hang near each other above a projection on the tumbler bar from a single pintle, one or more of the said guard blocks being adapted to normally check the elevation of the bar for a release of the bolt, until the intermediate block is moved by a suitable key, substantially as described.

2. The combination with a lock case, a pendent vibratile L-shaped latch bolt hung in a slot at the front edge of the case, and a hasp plate adapted to engage the projecting latch bolt, of a tumbler bar arranged to slide in the case, and impinge the upright member of the latch bolt, a stud on the case interlocking with a notch on the lower edge of the tumbler bar, a key to move the tumbler bar, a series of Z-shaped guard blocks adapted to prevent the elevation of the tumbler bar if forwardly swung, one or more L-shaped locking blocks hanging above a projection of the tumbling bar on the same pintle with the guard blocks and intermediately of said blocks, and a suitable key to move said L-shaped block, substantially as described.

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Witnesses:

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