

J. C. CROSWELL.
LOCK.

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937,286.

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Fig. 1.

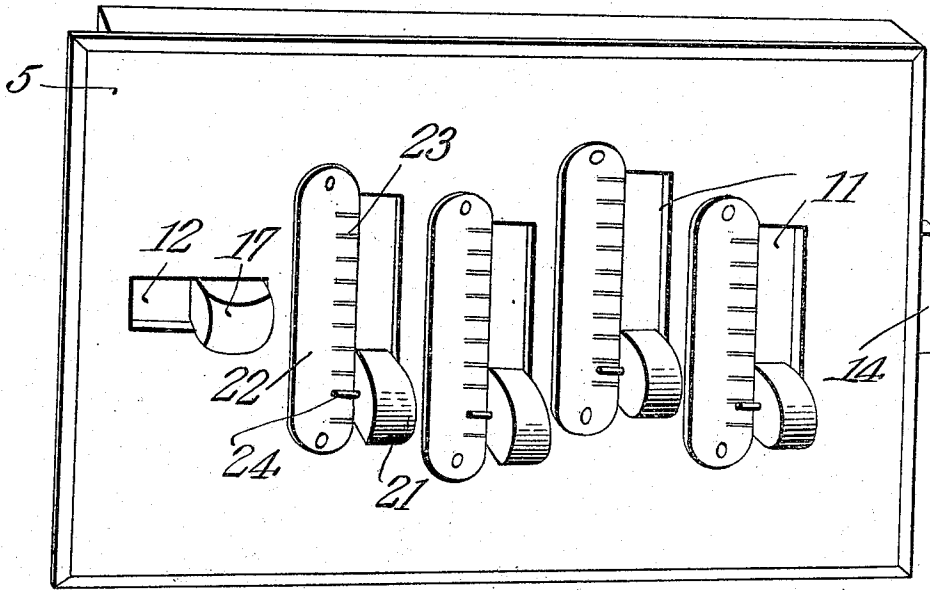


Fig. 3.

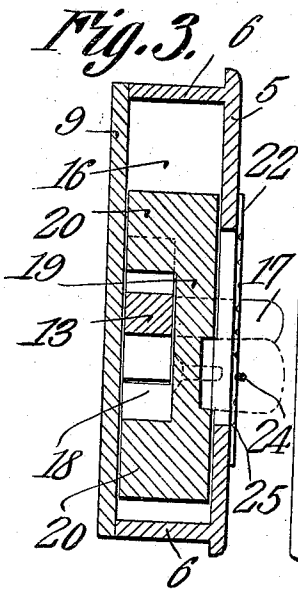
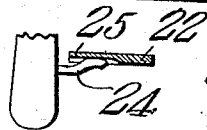
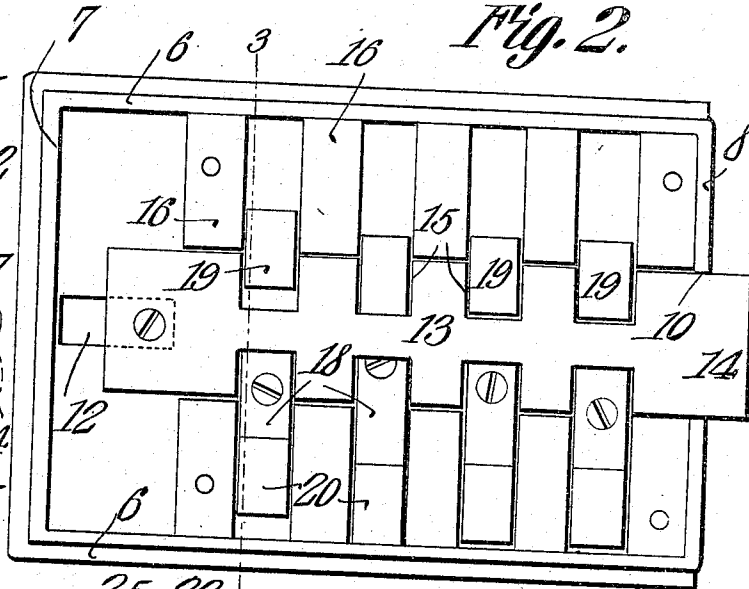


Fig. 2.



Inventor
James C. Crosswell.

By
C. A. Snow & Co.
Attorneys

Witnesses
J. E. Smith.

UNITED STATES PATENT OFFICE.

JAMES C. CROSWELL, OF HILLSBORO, ARKANSAS.

LOCK.

937,286.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES C. CROSWELL, a citizen of the United States, residing at Hillsboro, in the county of Union and State of Arkansas, have invented a new and useful Lock, of which the following is a specification.

It is the object of the present invention to provide an improved construction of lock of the permutation type and the invention aims more specifically speaking to provide a lock of this class which will be well adapted for use upon corn crib, barn, stable, and other similar doors where a substantial and simple construction of lock is to be preferred to one of delicate construction.

Among other objects, the invention has to provide a lock of the type mentioned in which the tumblers are provided with finger pieces which are so arranged as to permit of simultaneous manipulation and further to provide the bolt of the lock with a finger piece so arranged with respect to the finger pieces of the tumblers as to permit of the four fingers of one hand being employed in manipulating the tumblers at the same time the thumb of the hand is employed in sliding back the bolt.

With such a construction of lock, as will be readily appreciated, one accustomed to using the same can readily withdraw the bolt from locking position without the need of a light although a person not accustomed to the lock having that particular combination would find it a tedious operation and one requiring considerable time owing to the fact that one hand must necessarily be employed, in such instance, in withdrawing or tending to withdraw the bolt from locking position while the other hand is being employed in manipulating the tumblers. There is also contemplated a slight modification of the invention in which means is provided for not only indicating, to a person familiar with the combination of the lock, the proper position at which the tumblers are to be set, but also for holding the tumblers in this position so that during the day the tumblers may be set in such positions and the door may be opened and closed at will without the necessity of manipulating the tumblers each time, the bolt, when the tumblers are so positioned and held, serving

merely as a latch for holding the door against swinging open.

In the accompanying drawings, Figure 1 is a perspective view of a lock constructed in accordance with the present invention. Fig. 2 is a view in elevation of the same with one side of the casing removed. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2, and Fig. 4 is detail horizontal sectional view showing the means for holding the tumblers in position to permit of free sliding of the bolt in the lock casing.

In the drawings, the latch casing is illustrated as comprised of a face plate 5 having integral top and bottom walls 6, an end wall 7 and an end wall 8, there being a back plate 9 disposed against the edges of the walls 6, 7 and 8 and secured in such position through any suitable means. For a purpose to be presently explained, the end wall 8 of the casing is formed with a slot 10 which opens through the edge thereof and is of a depth equal to the width of the said wall and the face plate 5 of the casing is formed with a plurality of vertically extending slots 11 which are parallel but which are relatively displaced as is clearly shown in Fig. 1 of the drawings, and with a slot 12 which extends at right angles to the slots 11 and is located to one side of the series of such slots 11.

The bolt of the lock is illustrated as comprised of a shank 13 having at one end a head 14 which projects, when the bolt is in locking position, through the slot 10 in the end wall 8 of the casing and the shank of the bolt is formed in its upper and lower edges with notches 15 which are arranged in a series of pairs. In other words, the notches in the lower edge of the bolt are formed at points corresponding to the points of location of the notches in the upper edge of the bolt shank and are equal in number thereto. The bolt is illustrated, in Fig. 2 of the drawings, as being slidably mounted between the edges of the slot 10 (the wall 8 being of considerable thickness) and between the opposing ends of guide bosses 16 formed upon the inner face of the face plate 5 of the lock casing. At its inner end, the bolt shank 13 is provided with a finger or thumb piece 17 which projects through the slot 12 in the face plate 5 of the lock casing in posi-

tion to be readily engaged by the thumb whereby the bolt may be slid into or out of locking position.

The guide bosses 16 above mentioned are equal in number to the notches in the upper and lower edges of the shank 13 of the bolt of the lock and it is between these guide bosses that the tumblers of the lock are slidably disposed, each tumbler being in the form of an oblong block formed in one edge with a recess 18 and these recesses in the tumblers receive those portions of the shank of the bolt which lie between the notches in the upper and lower edges thereof as is clearly illustrated in Fig. 2 of the drawings. The formation of the recesses 18 in the tumbler blocks 19 results in each block having at each end a lug 20 and when the lock bolt is in the position shown in Fig. 2 of the drawings, the tumblers, being gravity actuated, will drop into position with their upper lugs 20 in engagement with the notches 15 in the upper edge of the bolt shank whereby withdrawal of the bolt from locking position will be prevented. Furthermore, the lugs 20 are spaced apart a distance equal to the width of the bolt shank so that the bolt may only be withdrawn from locking position when the tumblers are all so positioned as to bring the opposing ends of their lugs 20, at their upper and lower ends, in alinement and in registration with the corresponding edges of the bolt shank, upward movement of any of the tumblers beyond this position serving to lock the bolt against withdrawal from locking position as effectually as when the tumblers rest by gravity with their upper lugs 20 in engagement with the notches in the upper edge of the bolt shank. Each of the tumblers 19 carries a finger piece 21 which projects through one of the slots 11 in the face plate 5 of the lock casing and as heretofore stated, in manipulating the tumblers to bring them to a position to permit of withdrawal of the bolt of the lock from locking position, the four fingers of one hand may be engaged beneath the finger pieces 21 of the tumblers, the tumblers brought to the position stated, and the thumb engaged against the finger piece 17 of the bolt and moved back whereby to slide the bolt out of locking position or in other words to retract the bolt. In order that any one using the lock may know to just what position to set each tumbler for the purpose of permitting withdrawal of the bolt into the lock casing, the face plate 5 has strips or plates 22 secured upon the outer face thereof, which are formed with scale marks 23 with which register pins 24 carried one by each of the finger pieces 21.

Inasmuch, owing to the use to which the lock is to be put, as it will be desired at times to hold the tumblers in such position as to permit of ready sliding of the lock bolt, the

pins 24 are made resilient and are off-set to a slight degree in the direction of the face plate of the lock casing as is clearly shown in Fig. 4 of the drawings and the scale indications upon the plate 22 are in the nature of notches 25 cut in the said plate into which the pins 24 seat, interchangeably.

From the foregoing description of the invention, it will be seen that there is provided a lock which is particularly well adapted for use upon corn crib, barn, stable, and similar doors and that the lock may be made very substantial owing to the fact that it is extremely simple in its construction and further that it may be readily manipulated in the dark, by one accustomed to its use and familiar with the combination. Also it will be understood that but one hand is required in manipulating the tumblers and retracting the bolt of the lock and that further the tumblers may be so positioned as to permit of free sliding movement of the bolt in the lock casing whereby the lock may be employed during the day merely as a latch for the door upon which it is secured and repeated locking and unlocking of the door will therefore be rendered unnecessary. It will further be observed from an inspection of the drawings that the finger pieces 21 for the tumblers are positioned at non-corresponding points upon the tumblers which together with the feature of having the slots 11 relatively displaced, adds to the perplexity of a person unfamiliar with the lock, in attempting to manipulate the tumblers thereof.

What is claimed is:—

1. In a lock, a casing, a bolt slidably mounted in the casing, tumblers mounted in the casing for coöperation with the bolt, said tumblers having finger pieces projecting through one wall of the casing, pins carried by the finger pieces of the tumblers, and notched indicator plates upon the said wall of the casing in the notches of which plates the pins are adapted to seat.

2. In a lock, a casing, a bolt slidably mounted in the casing, tumblers mounted in the casing for coöperation with the bolt, said tumblers being of counterpart construction, finger pieces carried by the tumblers at non-corresponding points and projecting through one wall of the casing, pins carried by the finger pieces of the tumblers, and notched indicator plates upon the said wall of the casing in the notches of which plates the pins are adapted to seat.

3. In a lock, a casing formed through one wall with a plurality of relatively displaced slots, a bolt slidably mounted in the casing, tumblers mounted in the casing for coöperation with the bolt, said tumblers having finger pieces projecting through the slots in the said wall of the casing, a finger piece upon the bolt projecting also through the said wall

of the casing, pins carried by the finger
pieces of the tumblers, and notched indicator
plates upon the said wall of the casing in
the notches of which plates the pins are
5 adapted to seat.

4. In a lock, a casing, said casing being
formed with a plurality of slots which are
relatively displaced, a bolt slidably mounted
in the casing, tumblers mounted in the cas-
10 ing for coopération with the bolt, finger
pieces projecting from the tumblers at non-
corresponding points and through the said

slots in the casing, pins carried by the finger-
pieces of the tumblers, and notched indi-
cator plates upon the said wall of the casing 15
in the notches of which plates the pins are
adapted to seat.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature
in the presence of two witnesses.

JAMES C. CROSWELL.

Witnesses:

L. D. NEWTON,
H. F. MURRAY.