N. B. HURD.

LOCK CONSTRUCTION.

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1,232,035.

Patented July 3, 1917.

Fig 1

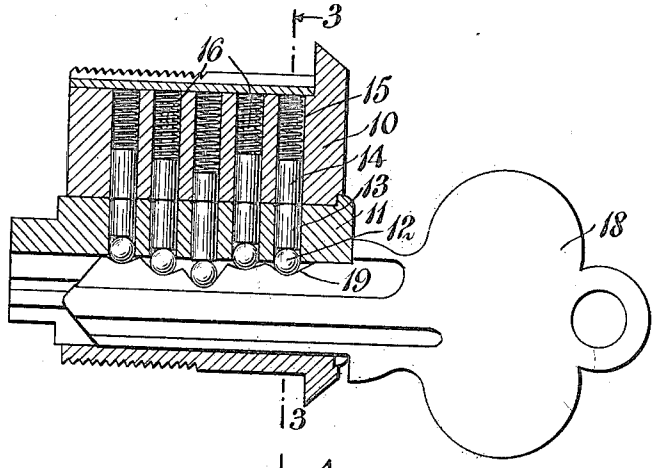


Fig 2

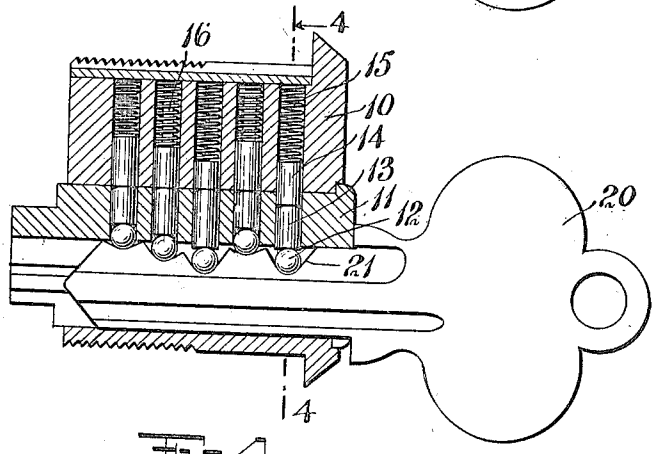


Fig 3

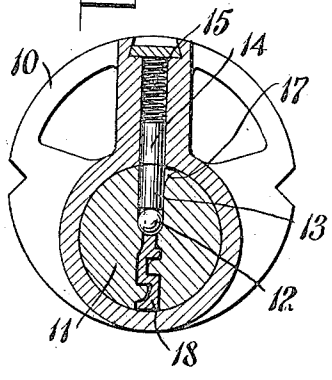


Fig 4

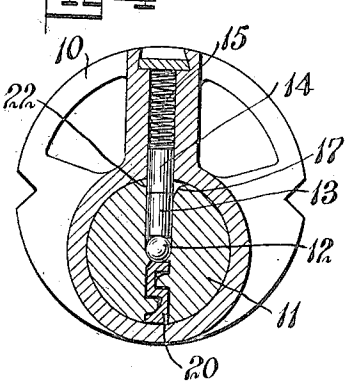
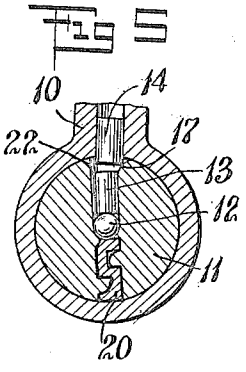


Fig 5



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LOCK CONSTRUCTION.

1,232,035. Specification of Letters Patent. Patented July 3, 1917.

Application filed March 6, 1917. Serial No. 152,505.

To all whom it may concern:

Be it known that I, NORMAN B. HURD, a citizen of the United States of America, residing at New Britain, Connecticut, have invented a new and useful Lock Construction, of which the following is a specification.

My invention relates particularly to cylinder locks, and the main object is to provide a construction in which the ordinary change key can be used to operate the lock or latch bolt in one direction only, for instance, so as to lock the door, but the master key will operate the lock or latch in both directions. This is accomplished in a very simple manner by providing a cam surface adjacent the first set of pin tumblers. The cut in the change key which coacts with the first tumbler is deeper than the corresponding cut in the master key, so that when the change key is used the first tumbler is allowed to drop and the parting line is below the periphery of the plug. The beveled edge of the hole in the plug serves as a cam to lift the tumbler when the plug is turned in that direction, but the tumbler prevents the plug from rotating in the other direction. When the master key is inserted it breaks the tumbler on the parting line corresponding to the periphery of the plug so as to permit that key to be turned in both directions.

Figure 1 is a longitudinal sectional view of a cylinder showing a master key in place.

Fig. 2 is a similar view, showing a change key in place.

Fig. 3 is a transverse sectional view on the plane of the line 3—3 of Fig. 1 showing the master key in place.

Fig. 4 is a transverse sectional view on the plane of the line 4—4 of Fig. 2 showing the change key in place.

Fig. 5 is a transverse sectional view showing the operation of the lifting cam when the change key is in place and the plug is turned in an anti-clockwise direction.

The cylinder 10 is of the usual construction, and has the plug 11 for operating any suitable form of latch. Any number of tumblers may be provided. They are preferably of the ball bearing spring pressed type, consisting of the ball 12, the plug pin 13, cylinder pin 14 and the spring 15. One or more of the tumblers may be provided with a safety stop 16.

One side of one of the tumbler holes in the plug is beveled as at 17 to form a cam surface leading away from the tumbler. The master key 18 has the notch 19 which corresponds with the tumbler in the hole adjacent cam 17 of sufficient height to hold the tumbler in position with the line of parting between the inner and outer parts of the pin corresponding with the periphery of the plug, as shown in Figs. 1 and 3, so that when the master key is in place the plug can be turned in either direction.

The change key 20, however, has its notch 21 deeper than the notch 19 so that the tumbler drops farther into the plug as shown in Figs. 2 and 4. The wall of the plug at 22 opposite the cam face 17 is not cut away, but is left in the form of a shoulder to coact with the tumbler 14 when an attempt is made to turn the plug in a clockwise direction. From this it will be seen that the plug can not be turned in a clockwise direction (as viewed in Fig. 4) on account of the fact that the part 14 of the tumbler extends across the line of parting between the plug and the cylinder. The plug can, however, be turned in an anticlockwise direction in which event the cam 17 forces the part 14 outward into the cylinder. This action is indicated in Fig. 5.

By this construction, a door may be locked with the change key by a person leaving the room or building, but it will be necessary to obtain the master key from the janitor or other person in charge in order to open the door to the room or building.

I claim:

In a lock construction, a cylinder, a plug rotatable therein in both directions, a single set of tumblers controlling said plug, one of the tumblers of said single set of tumblers being made in two parts, a master key for lifting said tumbler parts to bring the line of parting thereof into register with the periphery of the plug, whereby said plug may be freely completely rotated by said master key in both directions and a change key en-

gageable with the same set of tumblers for lifting the two part tumbler to a point where the outer part of said tumbler projects into the plug, said plug having a cam face at one side of said tumbler for lifting said outer part of said tumbler from the plug when said plug is rotated in one direction, and a shoulder at the opposite side of said tumbler from said cam face for preventing rotation of the plug in the opposite direction by said change key, whereby said plug may be freely completely rotated by said change key in the first mentioned direction only.

NORMAN BOLLER HURD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."