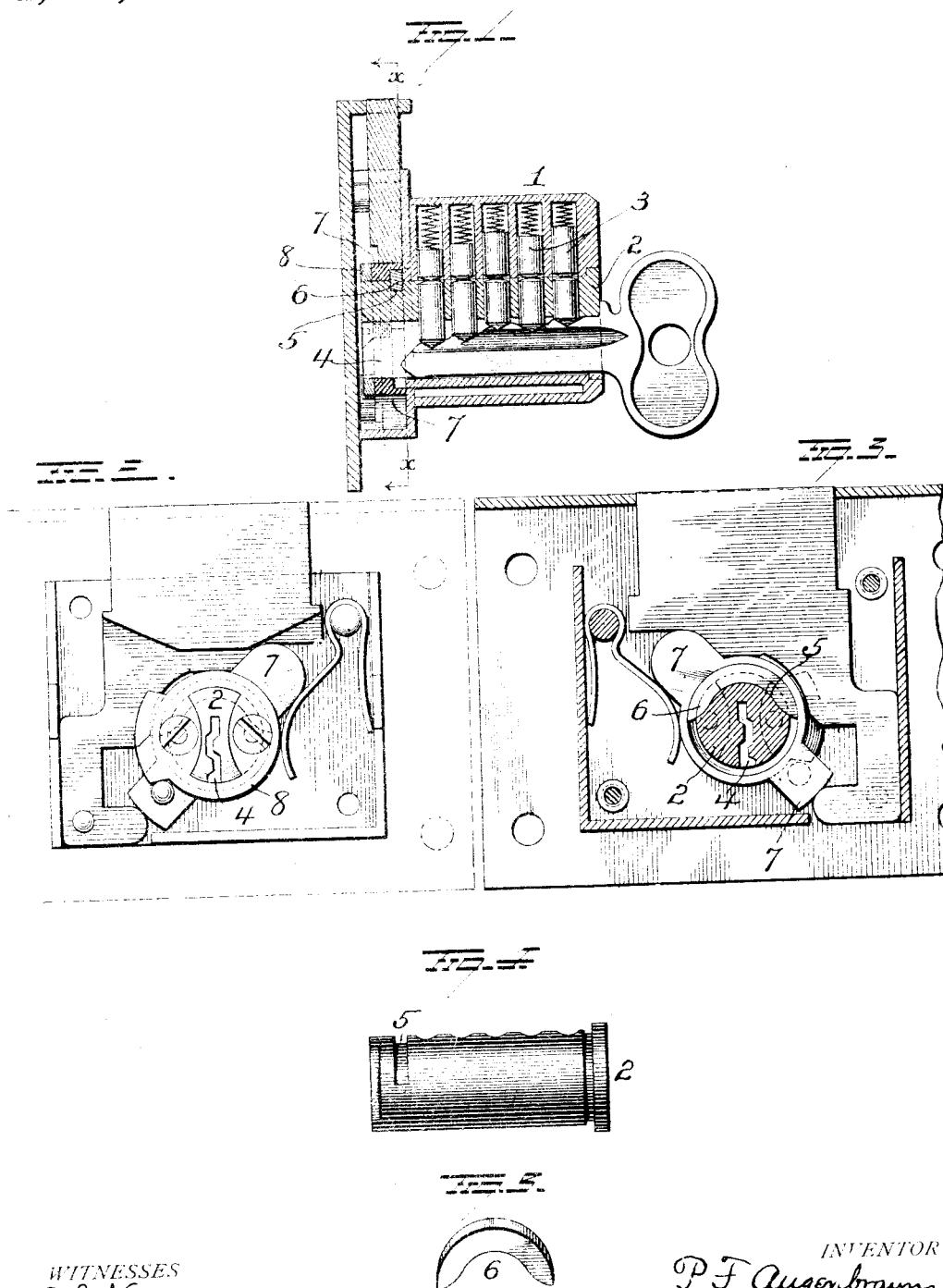


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PIN TUMBLER LOCK.
APPLICATION FILED JAN. 25, 1912.

1,047,482.

Patented Dec. 17, 1912.



WITNESSES
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UNITED STATES PATENT OFFICE.

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PIN-TUMBLER LOCK.

1,047,482.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed January 25, 1912. Serial No. 673,339.

To all whom it may concern:

Be it known that I, PETER F. AUGENBRAUN, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Pin-Tumbler Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in pin tumbler locks, and more particularly to an improvement on the construction disclosed in Patent No. 966,295, granted to me August 2nd, 1910.

In pin tumbler locks as ordinarily constructed, when the key is inserted in the plug and turned, the key is prevented from being withdrawn, by reason of the fact that the tumblers carried by the plug, are out of alinement with the tumbler holes in the cylinder, consequently they cannot be moved longitudinally by the bittings of the key, and as the tumblers engage the bittings of the key, the latter is held against withdrawal. The tumblers must have some play in their holes, and when a key is inserted and withdrawn the tumblers are pushed first against one side and then against the other side of the tumbler holes, which results in some wear and distortion both on the tumblers and holes and causes unsatisfactory action of the tumblers.

In the construction disclosed in my patent above referred to, I take the strain and the consequent wear from the tumblers and plug and transfer it to the cylinder and key, by means of a plate secured to the rear face of the cylinder, with one edge resting in a groove in the plug. While this patented construction is mechanically excellent, it involves in some instances the increasing of the depth of the lock, and the object of the present invention is to provide a simpler and less expensive means for locking the plug to the cylinder without increasing the depth of the lock.

With these objects in view my invention consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal section of my im-

proved lock. Fig. 2 is a view in elevation of the rear end of same, showing the bolt. Fig. 3 is a sectional view on the line $x-x$ of Fig. 1. Fig. 4 is a view of the plug detached and Fig. 5 is a view of the locking plate or segment.

1 represents a cylinder, provided with a cylindrical bore for the plug 2, and with holes or recesses arranged to aline with similar holes in the key plug, for the reception of the pin tumblers 3, which latter are of the well known construction, and are operated by the key in the usual manner. The plug 2 is cylindrical in shape, and is provided with a key way 4 extending throughout its length, and is provided at its inner end and at point just outside of the plane of the rear face of the cylinder with a groove 5, extending preferably not more than half way around the plug to receive the crescent shaped plug retaining or locking plate 6 which latter when in place, overlaps the rear face of the cylinder, and locks the plug in place against withdrawal, and also against any longitudinal movement, hence any longitudinal pull on the plug through the key is transmitted to the cylinder through the locking plate 6. The locking plate 6 fits snugly within the groove, and as the latter extends only part way around the plug, it follows that when the plug is rotated, the locking plate also rotates and operates at all times to hold the plug exactly in its proper position with relation to the cylinder, so that as the key is withdrawn there can be no movement of the plug within the cylinder, therefore insuring a smooth action of the tumblers.

The plug locking plate 6 is in the present instance held in position by the bolt actuating cam 7, which latter is counterbored on its front or inner face to cover the locking plate and hold it in place within its groove, and the bolt actuating cam 7 is held in place by the usual cam 8 which is secured by screws to the end of the plug. The bolt actuating cam is free to have a turning movement on the plug, and as before stated is held in place by the usual cam 8, and in locks when the cam 7 is not used, cam 8 would be counterbored to cover and inclose the locking plate 6. With this improvement the locking plate 6 is simply dropped into a slot in the plug and is retained there by the

bolt actuating cam or other part secured to the rear end of the plug, the said cam or other part being preferably counterbored to receive and house the locking plate.

5 With my present improvement the locking plate moves with the plug, and as the retaining cam or part is recessed to receive the plate, there is no increase whatever in the depth of the lock.

10 It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

15 Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

20 1. In a pin tumbler lock, the combination of a cylinder and its plug, the latter having a peripheral groove adjacent its rear end, a locking plate loosely seated in said groove and bearing against the rear face of the cylinder, and means secured to the plug for holding the locking plate in position.

25 2. In a pin tumbler lock, the combination of a cylinder and its key plug, the latter having a peripheral groove adjacent its rear end, a crescent shaped locking plate mounted

in said groove and overhanging the rear face of the cylinder, and means for locking the plate within the groove in said key plug, whereby the plate turns with the key plug 35 and locks the latter against endwise movement.

3. In a pin tumbler lock the combination of a cylinder and its plug, the latter having a peripheral groove adjacent its inner end, the said groove extending only partly 40 around the plug, a locking plate fitting said groove and overhanging the rear face of the cylinder and means carried by the plug for locking the plate within said groove. 45

4. In a pin tumbler lock, the combination with a cylinder and its plug, the latter having a peripheral groove adjacent its free end, the said groove extending only partly around said plug, a locking plate filling said 50 groove and having bearing against the rear face of the cylinder and a cam secured to the end of the plug and counterbored to cover and house the locking plate.

In testimony whereof, I have signed this 55 specification in the presence of two subscribing witnesses.

PETER F. AUGENBRAUN.

Witnesses:

SCHUYLER MERRITT,
CHARLES EDGAR VAIL.