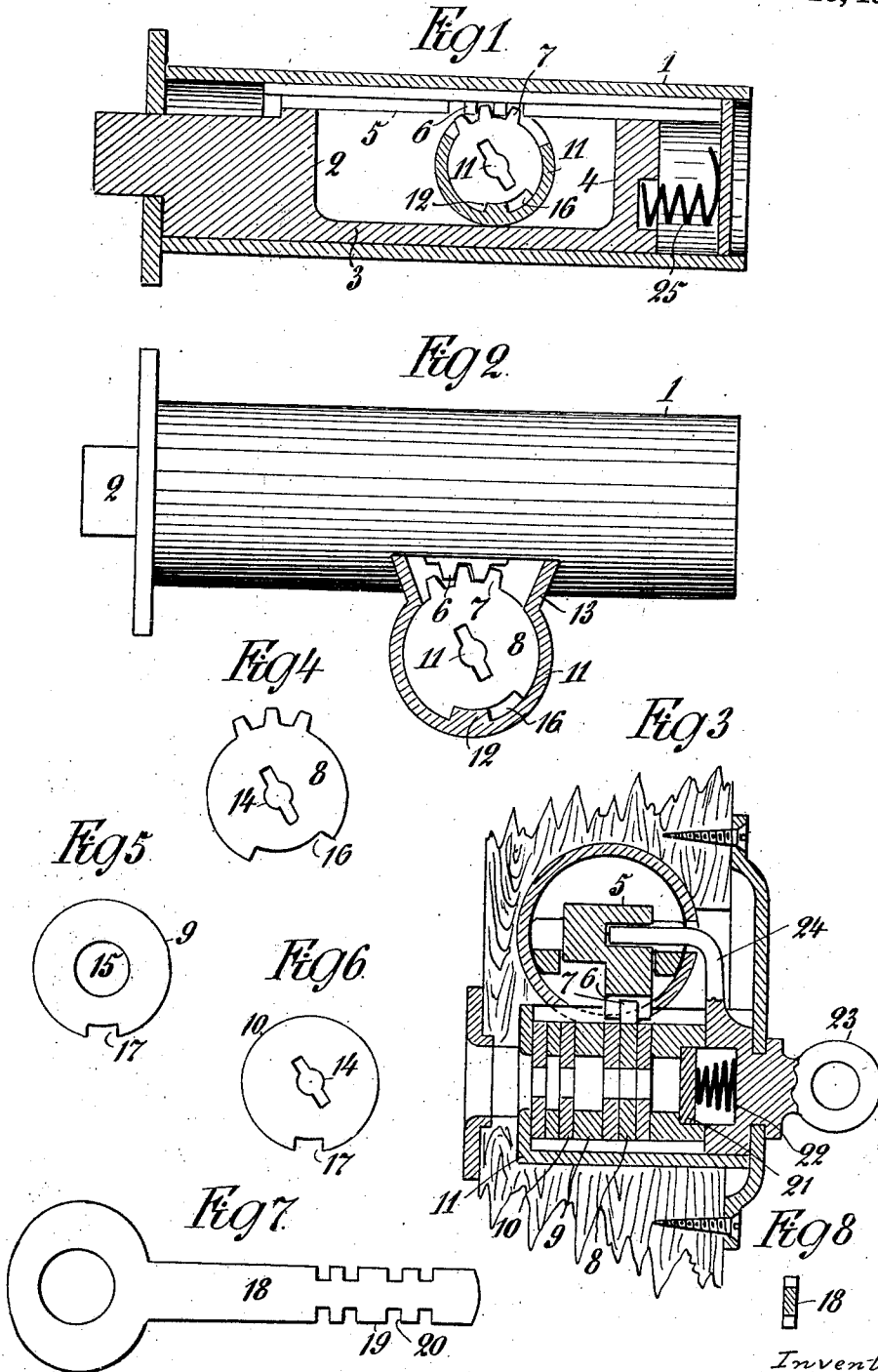


S. A. E. LARSEN.
CYLINDER LOCK.
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1,383,128.

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CYLINDER-LOCK.

1,383,128.

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To all whom it may concern:

Be it known that I, SOFUS ANDREW EMIL LARSEN, subject of the Kingdom of Denmark, residing at Vesterbrogade No. 126, Copenhagen, Denmark, have invented certain new and useful Improvements in Cylinder-Locks, of which the following is a specification.

The present invention relates to a lock for doors and the like, and consists of a cylindrical case, applied in the lock, which case contains the ward plates, formed in a special manner, as also the parts serving to move the bolt.

I will describe my invention by the aid of the accompanying drawings in which:

Figure 1 is a longitudinal section of the lock with a cross section of the cylindrical case.

Fig. 2 shows a lock with another cylindrical case in cross section.

Fig. 3 is a cross section of the lock represented in Fig. 2 applied in the door.

Figs. 4, 5 and 6 show some details of the locking mechanism.

Figs. 7 and 8 show a side view and a cross section of a key.

In the lock case 1, which is shown cylindrical, but which has no relation to the invention, and may be of any form and construction, is applied the bolt 2, which has a narrow, rod-like central portion 3 and a back piece 4, which latter is recessed to receive one end of a spring 25. To the upper portion of the bolt there is rigidly connected in some suitable manner a longitudinal rod 5 provided at its center with rack teeth 6, which mesh with teeth 7, that are cut in a circular plate 8.

This plate, together with other circular plates or wards 9 and 10, is arranged in a cylindrical case 11, which has inside a boss 12 in the longitudinal direction of the case. In Fig. 1 the case 11 is inserted through the middle of the lock casing 1, while in Figs. 2 and 3 it is engaged in an opening in the edge of the casing and held secured to it by flanges 13.

In the case 11 is arranged the cog wheel 8, which moves the rack 5 and thereby the bolt 2. The ward plates 9 and 10 are also applied in the case.

The cog wheel 8 has a notch 16, in which is loosely engaged the boss 12 in the case 11, such construction enabling said wheel to be

turned a certain angle. The ward plates 9 and 10 have short notches 17, which fit around the boss 12, thus being prevented from turning in the case 11.

The key 18 has bits 19 and spaces 20 which, when the key is properly inserted through the keyhole 11' in the ward case 11, are disposed in the holes 15 and 14 in the ward plates 9 and 10 respectively, and may therefore be turned in said holes, while one of the bits of the key is disposed in the hole 14' of the cog wheel 8, moving the wheel as well as the locking bolt when turned. For opening the door from the inside there may, as shown in Fig. 3 be applied a handle 23, which bears a rod 24, which may move or release the bolt 2.

In the case 11 there may, as shown in Fig. 3, be arranged a plate 21, which is normally held in engagement with the innermost ward plate by a spring 22, but by a pressure from the key in its longitudinal direction may be pushed out of such engagement in order to allow a turning of the cog wheel 8 and the opening of the lock.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A cylinder lock, comprising a casing; a bolt slidable therein and having a longitudinally arranged rod rigidly connected to it, said rod being provided at its center with rack teeth; a ward cylinder having a portion in open communication with the interior of the casing directly opposite said teeth; a plurality of ward plates fitted in said cylinder and having alining holes to rotatably accommodate a key; means for holding said plates against rotation; and a toothed disk fitted in said cylinder directly opposite the open portion thereof and in mesh with said teeth, said disk having a hole wherein the key is operatively engageable to rotate the disk when the key is turned.

2. A cylinder lock, comprising a casing; a bolt slidable therein and having a rack rigidly connected to it; a ward cylinder having a portion in open communication with the interior of the casing directly opposite said rack; a longitudinal boss on the inner surface of the cylinder; a plurality of ward plates fitted in said cylinder and formed both with alining peripheral notches to con-

formably receive said boss and thereby be held against rotation, and with alining central holes to rotatably accommodate a key; and a toothed disk fitted in said cylinder
5 directly opposite the open portion thereof and in mesh with said rack, said disk having a peripheral notch wherein said boss is engaged with lateral play in opposite directions, and also having a central hole where-

in the key is operatively engageable to rotate the disk when the key is turned. 10

In testimony whereof I have affixed my signature.

SOFUS ANDREW EMIL LARSEN.

Witnesses:

AGNES HERDAM,
MARKIN JENSEN.