

(Model.)

J. GWYNN.

LOCK.

No. 300,773.

Patented June 24, 1884.

Fig. 3.

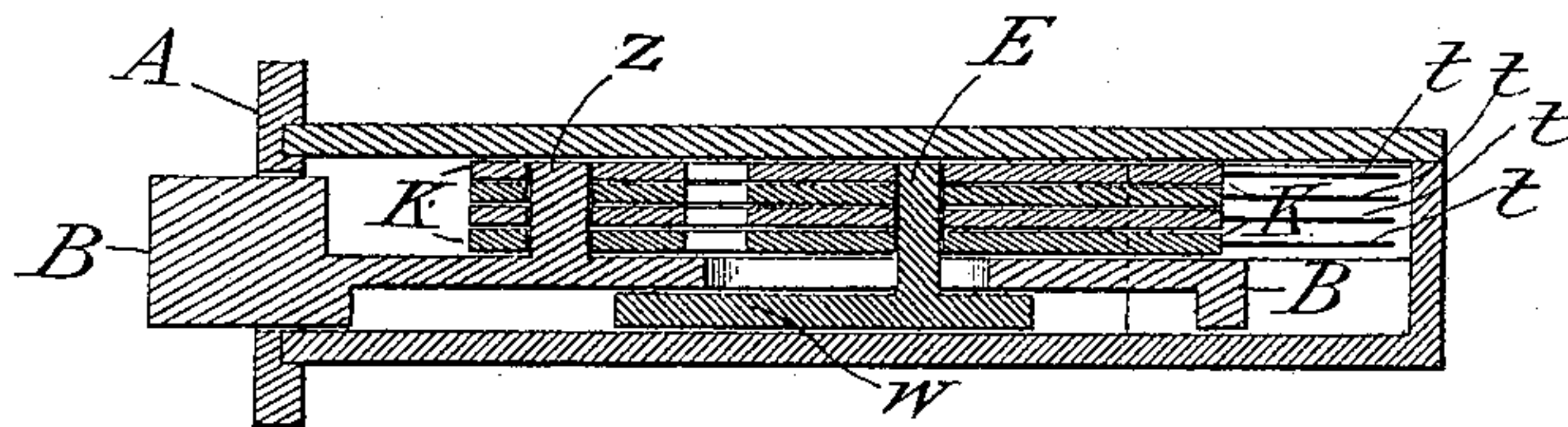


Fig. 2.

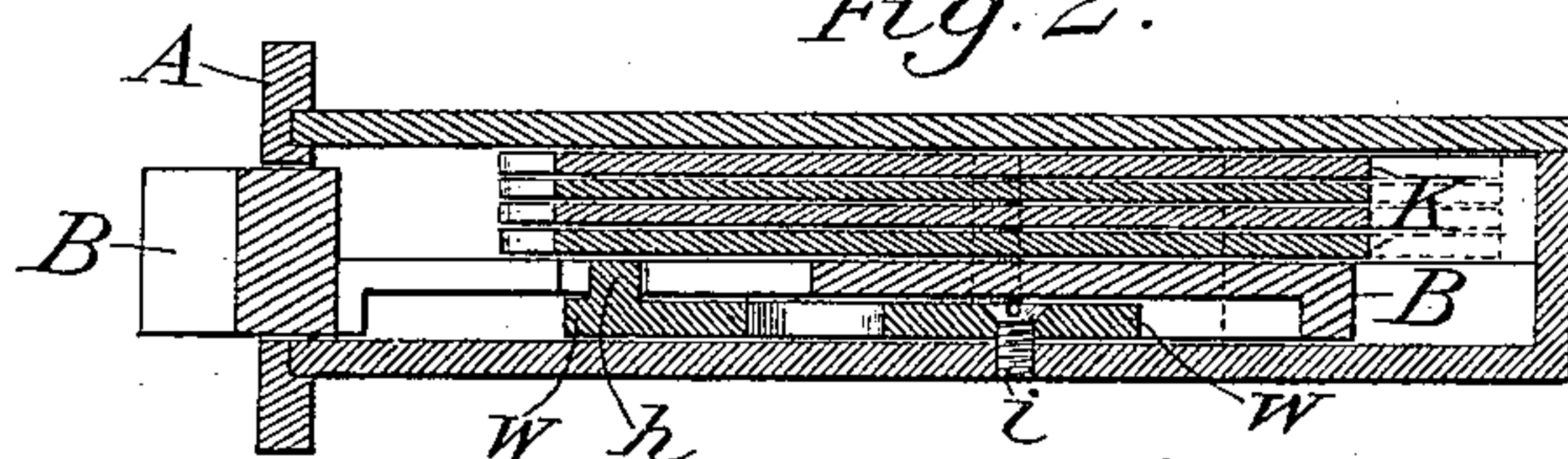


Fig. 1.

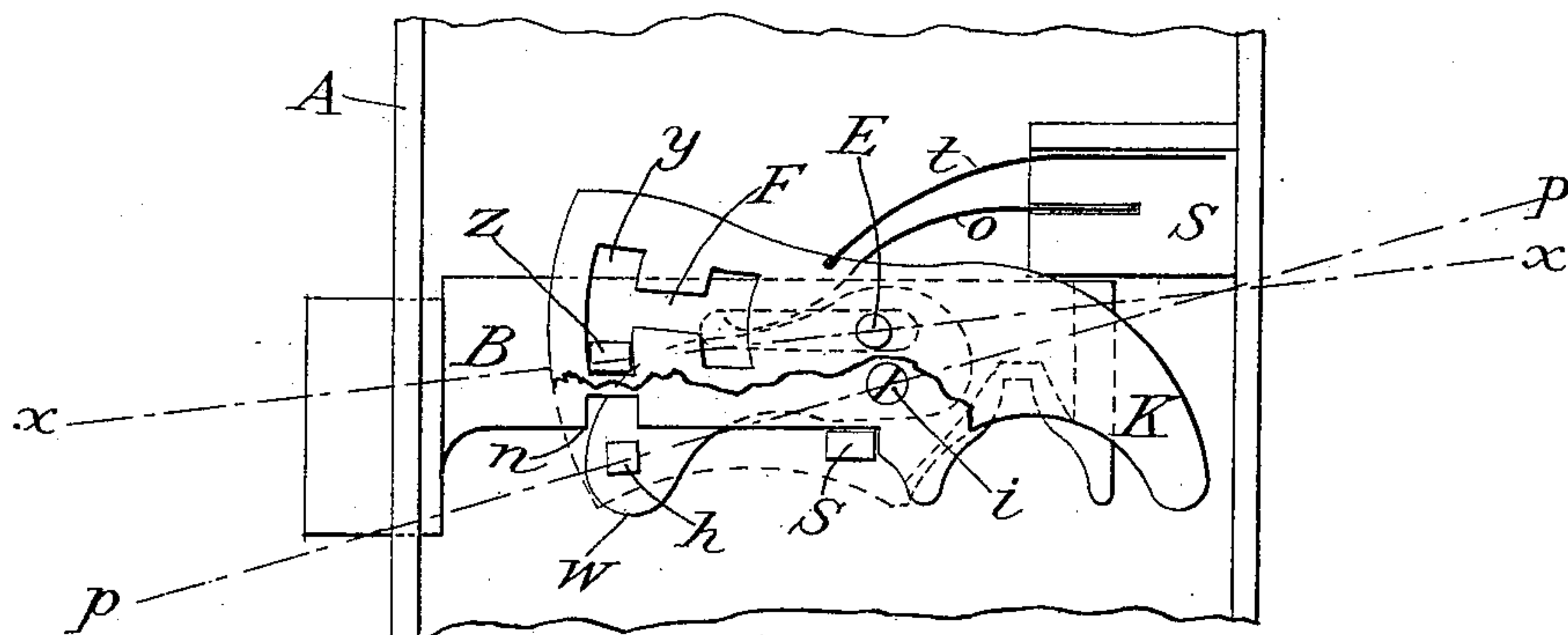
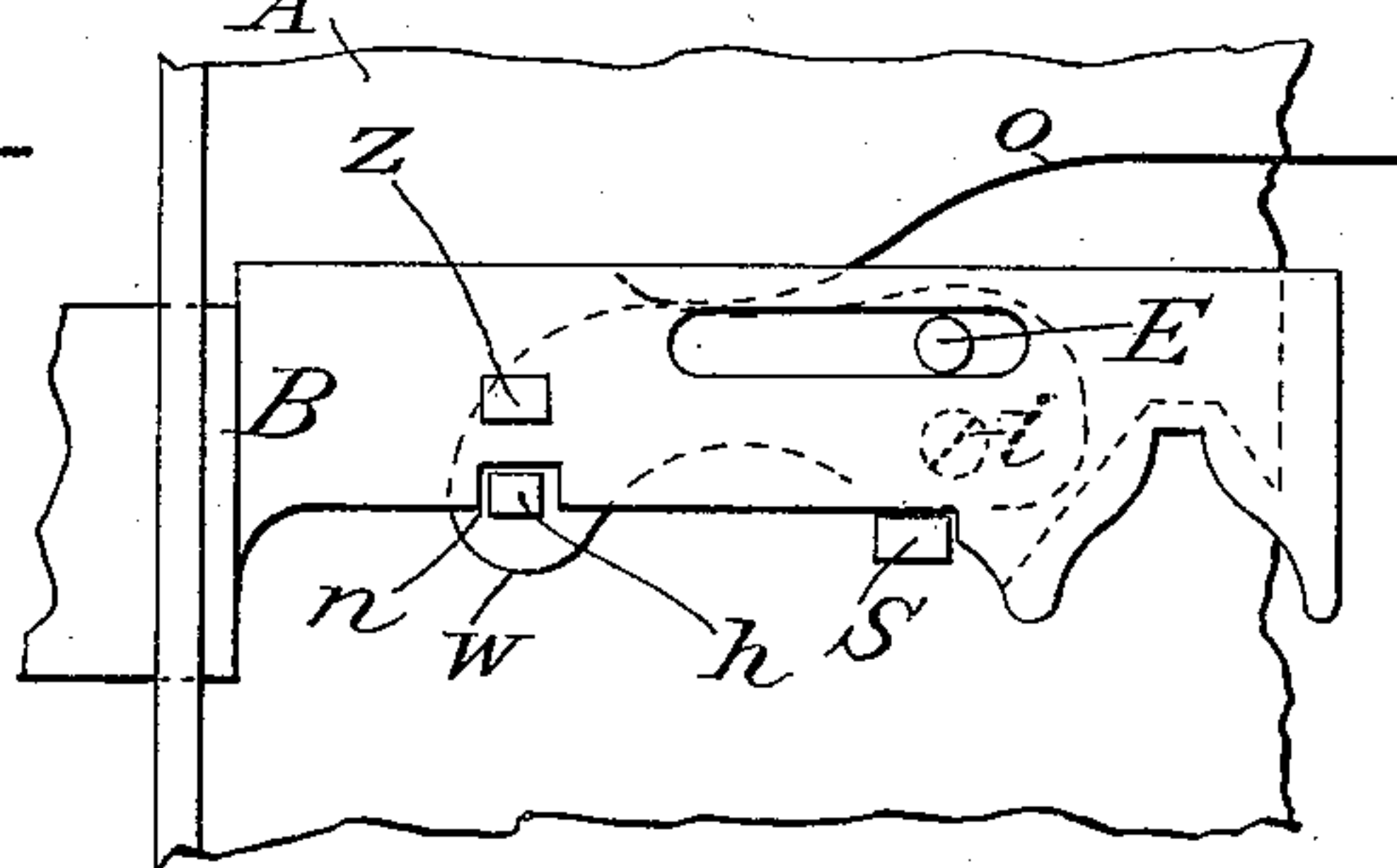
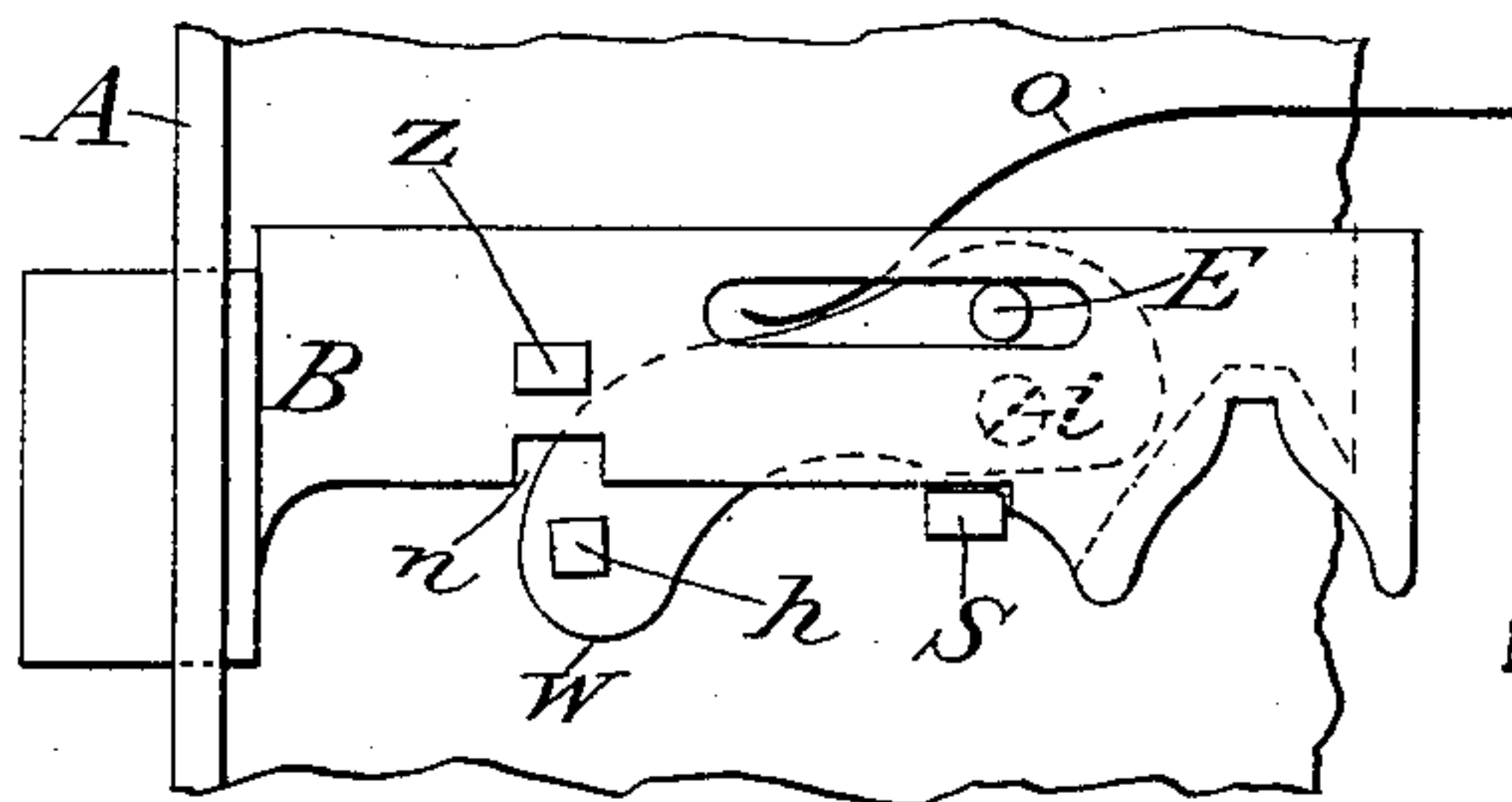


Fig. 4.

Fig. 5.



Witnesses:

John Robinson
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UNITED STATES PATENT OFFICE.

JAMES GWYNN, OF DETROIT, MICHIGAN.

LOCK.

SPECIFICATION forming part of Letters Patent No. 300,773, dated June 24, 1884.

Application filed February 2, 1884. (Model.)

To all whom it may concern:

Be it known that I, JAMES GWYNN, a subject of the Queen of Great Britain, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

My invention relates to that class of locks in which a series of pivoted tumblers must be brought into a certain position before the key can be turned and the bolt moved; and the nature of my invention consists, first, in a moving bearing, upon which a series of two or more tumblers turn, the said moving bearing being intended to move backward under pressure, and by its movement cause a stop-pin or its equivalent to engage with the bolt and hold it stationary until the said pressure ceases; and, second, in a plate of any suitable shape or size to form the device for communicating the pressure and stopping the bolt. The said plate is placed in a case of any desired shape or size, containing a bolt and a series of two or more tumblers, the case, bolt, and tumblers being of any suitable shape or size. The said plate is pivoted to the lock-case or in any other convenient position, and has two or more lateral pins, one of these pins (upon certain occasions) forming a moving bearing for the tumblers, and the other pin acting as a stop to prevent the bolt from being pressed back sufficiently to engage the bolt-pin in the wards of the tumbler.

Figure 1 is an interior view of a part of the lock, in which (for the purpose of clearly showing the plate) there is placed only one tumbler, and that is partly broken away. Fig. 2 is a transverse longitudinal section of the lock on the dotted line *pp*, Fig. 1. Fig. 3 is another similar section of the same on the dotted line *xx*, Fig. 1. Fig. 4 shows the position of the plate at rest. Fig. 5 represents the plate engaged with the bolt.

In the accompanying drawings, which form a part of this specification, A represents the case; B the bolt, and K the tumblers, all of the usual construction, except as hereinafter explained. W is a plate provided with pins *e* and *h*, and pivoted upon the stud or post *i*. O is a spring. The bolt B is guided by studs S or other suitable devices to compel it to move in a straight line in its reciprocation.

Projecting from the bolt is a pin, Z, at any desired point. This pin is designed to enter the slots F in the tumblers. At any convenient point in the bolt a slot or recess, *n*, is made to engage with the pin *h*. The pin *e* forms a moving bearing for the tumblers K. The pivot *i*, of any desired shape and size or position, forms a bearing upon which the plate W revolves.

In Fig. 1 I have shown the lock with the plate W in the position in which it will remain while the bolt B and the tumblers K are operated by their proper key. The plate W is brought into action by the bolt-pin Z pushing the tumblers K back when the horizontal slots F of the tumblers are not all opposite the said pin, or by any other force that presses the tumblers backward, as by that pressure the pin *e*, being compelled to make a retrograde motion, necessarily causes the plate W to revolve on its pivot *i*, and thereby the pin *h* is carried upward and forward until it is engaged or interlocked in the recess *n* in the bolt, which said interlocking will continue as long as the pressure exists. This engagement of the pin *h* with the bolt B must evidently (during the time it continues) prevent the bolt B from passing backward; but so soon as the pressure on the tumblers K ceases, the plate W, revolving backward on its pivot *i*, disengages the pin *h* and it comes to rest in its former position.

By the use of my invention there is another effect produced which is very important. The said effect arises partly from the peculiar arrangement of the pins and pivot of the plate, and partly from the motion of the tumblers dependent thereon. It is this: When the bolt B is pushed backward and the plate W revolves, its forward motion so effectually forces the pin *h* against the front of the recess *n* that the distance between the pin Z and the pin *e* becomes at once equal to the length of the corresponding part of the longest tumbler, with the immediate result that all the other tumblers can be moved freely without touching the pin Z, and the said longest tumbler touching the pin Z (slightly or otherwise) will, upon its being lifted, by its passage between the pins Z and *e*, press them asunder to the distance of its longest part that passes between them, whereby the pin *h* will be moved still farther upward

and forward into the recess *n* in the bolt, and the longest tumbler become (practically) free, so that the pressure of its spring will place it into its position of rest or into a close approximation thereto. It is evident that the freedom of movement of the tumblers thus obtained must make it very difficult, if not impossible, for a person trying to open the lock with picks to obtain (through the key-hole) any knowledge of the relative positions of the horizontal slots *F* to the pin *Z*, which result must add very greatly to the security of the lock.

It is also to be noted that in my lock as arranged the operation of shooting back the bolt with the proper key tends to disengage the pin *h* from the recess *n* in the bolt, thus rendering it possible to dispense with the spring *O* without interfering with the accurate working of the lock. The lock is so constructed as to prevent the plate *W* from being touched by picks from the key-hole or elsewhere, as may be deemed necessary.

The operation of my lock is as follows: To open it with the proper key it is only necessary to insert the key and turn it in the usual manner, whereby the tumblers *K* are first lifted into their proper positions. The bolt *B* is then shot, and the tumblers are allowed to fall into their state of rest. And as by the use of the said key no backward pressure is exerted until the horizontal slots *F* of all the tumblers are opposite to the bolt-pin *Z*, the plate *W* meanwhile remains stationary, or so nearly so as to allow the lock to be operated in the same manner as an ordinary tumbler-lock; but when an attempt is made to open the lock by the use of an improper key or by picks the effect is to push the bolt-pin *Z* against the tumblers *K*. They in their turn push back the bearing-pin *e*, which causes the plate *W* to revolve and the pin *h* to engage with the bolt *B*, with the results already stated.

I am well aware that moving bearings for tumblers which operate by two sets of slots upon two pins in bolt are not new, and that a patent therefor was granted to me on April 21, 1874.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. In a lock, a plate having a lateral projecting pin near each end thereof, and pivotally secured, one of such pins forming a moving bearing for tumblers, and the other designed to engage with the bolt, the pin forming a bearing for the tumblers being on a line approximately vertical to the pivot of the plate, the said plate being so arranged with relation to the tumblers and the bolt that, upon a backward pressure being applied to said bolt, the plate will engage with and lock the bolt in position irrespective of the resistance offered by the tumblers, substantially as described.

2. In a lock having a plate arranged and operating substantially as described, tumblers having a moving bearing upon one of the pins in said plate, and forming the means by which the backward pressure of the bolt actuates the plate, and thereby locks the bolt in position, substantially as specified.

3. In a lock, a plate having a lateral projecting pin near each end thereof, and pivotally secured, one of such pins forming a moving bearing for the tumblers, and the other designed to engage with the bolt, the pin forming the bearing for the tumblers being on a line approximately vertical to the pivot of the plate, whereby the tumblers are allowed to move freely under a backward pressure applied to said bolt, substantially as set forth.

JAMES GWYNN.

Witnesses:

JOHN ROBINSON,
ALONZO B. HAWLEY.