

(No Model.)

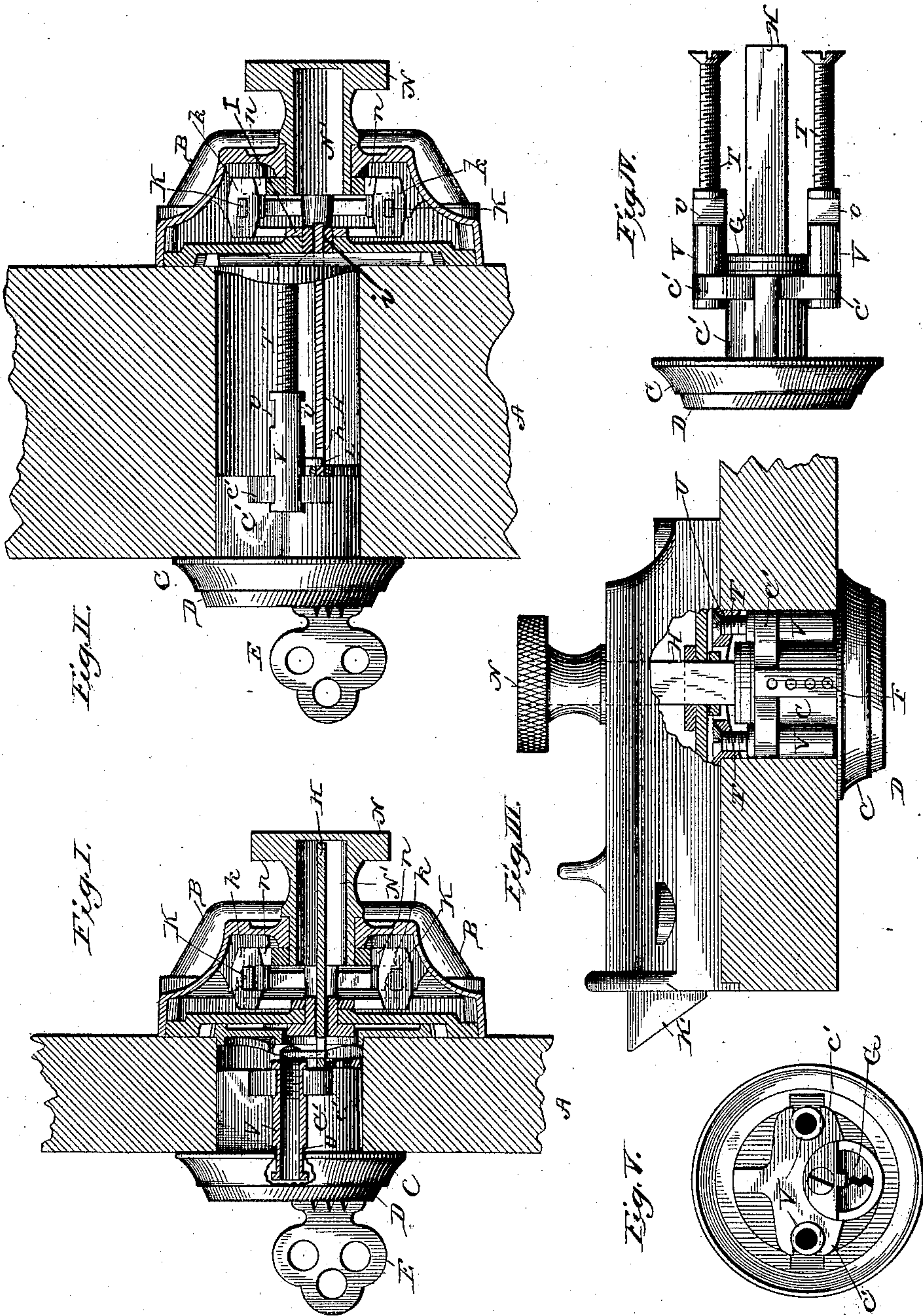
W. R. BALLOU.

2 Sheets—Sheet 1.

LOCK.

No. 474,281.

Patented May 3, 1892.



Witnesses:

Harry S. Pomeroy
Wm. E. Knight.

Inventor:
W. R. Ballou.

By Knight Bros.
Attorneys.

(No Model.)

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2 Sheets—Sheet 2.

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Fig. VI.

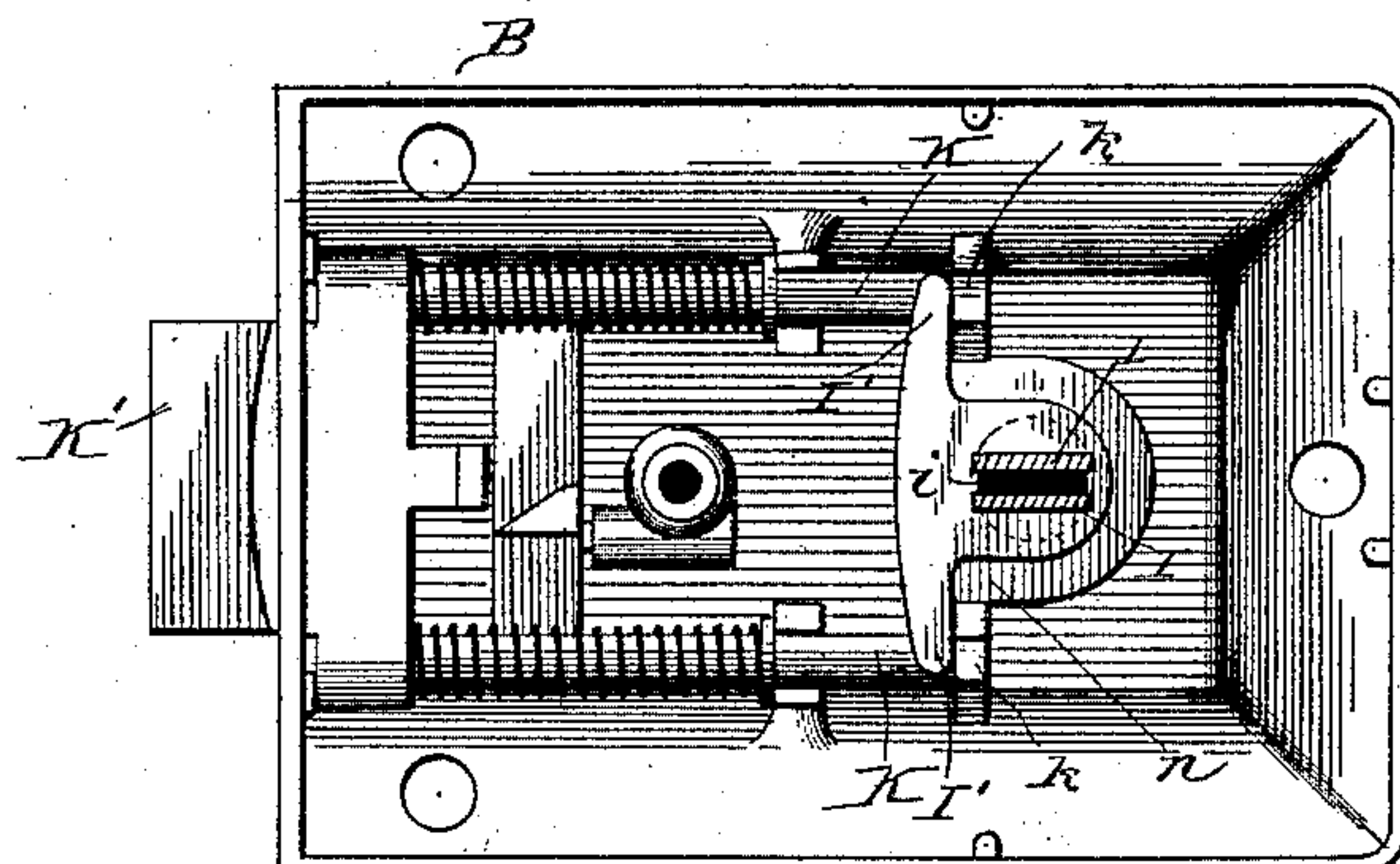
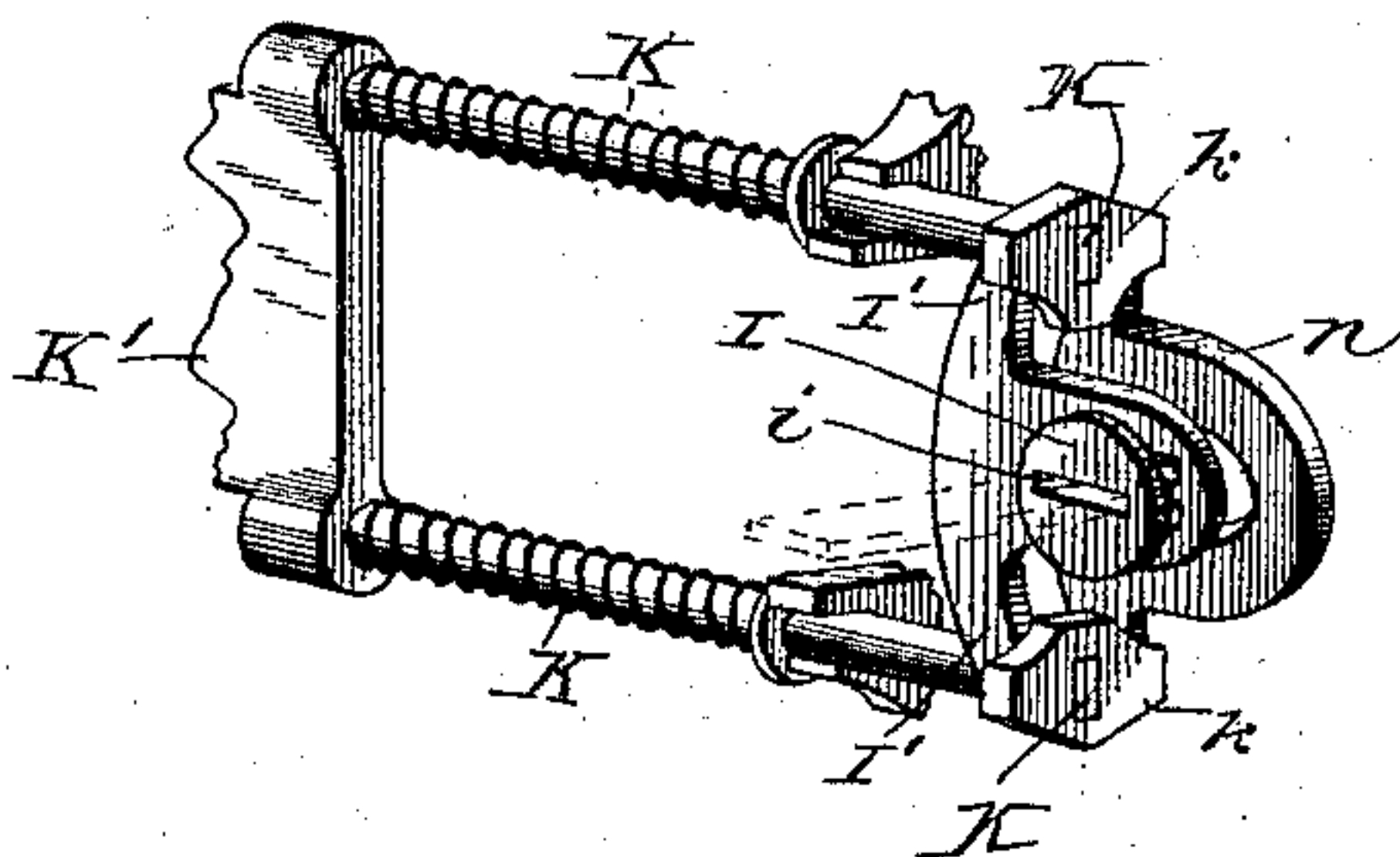


Fig. VII.



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UNITED STATES PATENT OFFICE.

WALDO R. BALLOU, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE
& TOWNE MANUFACTURING COMPANY, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 474,281, dated May 3, 1892.

Application filed January 13, 1892. Serial No. 417,945. (No model.)

To all whom it may concern:

Be it known that I, WALDO R. BALLOU, of Stamford, in the county of Fairfield, in the State of Connecticut, have invented certain
5 new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks which have independent escutcheons or tumbler-cases which are applied on the outside of doors, &c.,
10 and are connected to the latch-bolt-operating mechanism by a connecting-bar or similar device.

The general object of my improvements is to render such locks easier of application and
15 to make the adjustment and putting together of their parts by the mechanic in applying them to use more simple and to insure their correct and satisfactory operation without such nice and accurate fitting as has hereto-
20 fore been required. I am thus enabled to provide a lock of this description of the most improved and efficient construction which can readily be applied to doors of various thick-
25 nesses by a mechanic of ordinary skill.

One of the difficulties heretofore encountered in adjusting to a door or other object the parts of a lock of this class has been that the connecting-bar between the escutcheon and tumbler mechanism on the outside and
30 the latch mechanism on the inside was placed loosely into a slot in the end of the key-plug of the escutcheon and into a corresponding slot in the roll-back or cross-head, which operates the latch, and there held only by be-
35 ing fitted approximately in length to the space between these two slots. Such fitting of the connecting-bar has to be done with considerable nicety and is not easily accomplished with sufficient accuracy by the tools and skill
40 of the ordinary mechanic.

To overcome the difficulties above referred to, a plan has been devised by which the connecting-bar is positively connected at one end with the key-plug, which is operated by the
45 key from the outside, and passes through an aperture in the hub of the roll-back or cross-head, which operates the latch, so that it is securely prevented from escape without having to be fitted accurately between slots in
50 the respective parts which engage its opposite ends.

The improvement above referred to is set forth in Letters Patent No. 405,057, granted June 11, 1889, to the Yale & Towne Manufacturing Company upon the application of War-
55 ren H. Taylor, assignor to the said company.

In my improvement I adopt the same or a similar mode of positively connecting the connecting-bar to the key-plug of the tumbler mechanism, and I pass the said connecting-bar
60 through a slot in the roll-back of the latch-operating mechanism to any extent required by the thickness or thinness of the door. In order to provide a greater range of adjustment to suit a
65 reduced thickness of the door without the necessity of cutting off or reducing the length of the connecting-bar, as described in the Taylor patent, No. 405,057, above referred to,
I employ a thumb-knob for the inner side of the latch, excavated or hollowed out axially,
70 preferably as far as its length will permit, so that the end of the connecting-bar may, if necessary, extend within the said thumb-knob when required in applying the lock to a door
75 of small thickness. Another difficulty which has occurred in the adjustment and connection of the parts of a lock of this character which are applied to the opposite sides of a
80 door has resulted from the necessity of securing the external escutcheon and tumbler mechanism by inside fastenings which cannot be approached from the outside, and the result-
ing difficulty of adapting the length of the attaching-screws by which the escutcheon is
85 secured to the thickness of the particular door to which the lock is applied. In the patent of Warren H. Taylor, above referred to, this difficulty is overcome in a manner by the
employment of screws for holding the escutcheon, provided with a series of annular grooves,
90 so that the said escutcheon-holding screws might be broken off to approximately the required length. In my present improvement I provide a wider range of adjustment with-
95 out weakening the screws by the employment of screw-receiving pockets or sockets internally threaded for the reception of the screws and adapted to be adjusted longitudinally in the frame of the escutcheon or tumbler mechanism, so that the said screw-pockets may be
100 made to project to a greater or less extent within the opening through the door, accord-

ing to the thickness of the latter, as herein-
after described.

My invention particularly consists in the
provision of screw-threaded pockets longi-
tudinally adjustable for the reception of the
5 holding-screws, also in the construction of said
pockets with external transverse grooves or
notches engaging with lugs on the tumbler-
case, whereby they are secured adjustably;
10 and, further, in the combination of the adjust-
able screw-pockets and holding-screws, an op-
erating-bar attached to the rotary key-plug,
and an interior thumb-knob excavated longi-
tudinally to permit the passage of the operat-
15 ing-bar to an indefinite distance within the lock
and roll-backs rotated by the operating-bar
and thumb-knob, respectively, so as to retract
the latch by the key from the outside or by
the thumb-knob from within, the whole co-
20 operating, as herein described, to permit the
application and operation of the lock on doors
of various thicknesses, as described.

In order that my invention may be fully
understood, I will proceed to describe it in de-
tail with reference to the accompanying draw-
25 ings, in which—

Figure I is a vertical section of my improved
lock applied to a very thin door, the escutcheon
and tumbler-case being shown in eleva-
30 tion. Fig. II is a vertical section of the same,
showing it applied to a much thicker door.
Fig. III is a horizontal section of portions of
the lock, showing the lock-case and the es-
cutcheon and tumbler-case and their con-
35 necting-screws and screw-pockets in plan
view, the parts being applied to a thin door,
as shown in Fig. I. Fig. IV is a plan view of
the escutcheon, tumbler-case, connecting-bar,
screws, and screw-pockets detached, showing
40 them in the relative positions which they oc-
cupy when the lock is applied to a very thick
door, as illustrated in Fig. II. Fig. V is a
rear view of the escutcheon and tumbler-case
and the screw-pockets for the reception of
45 the screws by which this is fastened to the
door. Fig. VI is an elevation of the interior
of the lock with the face-plate removed. Fig.
VII is a perspective view of the latch-operat-
ing mechanism.

50 A may indicate a part of a door or other
object to which my improved lock is applied.

B represents the lock-case on the inside of
the door; C, the escutcheon or tumbler-case,
and D the annular escutcheon plate or collar
55 on the outside of the door.

E represents the key to operate the tum-
blers F and the plug G of usual construction
in this class of locks.

H represents a connecting-bar to connect
60 the plug G and the roll-back or T-head I,
which operates the spring latch or bolt K' of
usual construction. The key-plug G is pro-
vided at its inner end with a lug L and slot
for the reception of the end of the connect-
65 ing-bar H, which is provided with a trans-
verse slot h to receive the lug L on the key-
plug, thus connecting the end of the connect-

ing-bar to the key-plug, as described in the
patent of Warren H. Taylor, already referred
to, positively, but not rigidly—that is to say, 70
the said connecting-bar is secured against
endwise movement and is so confined to the
key-plug as to partake of the rotary move-
ment of the latter; but the free end of the
said connecting-bar is permitted to play lat- 75
erally in the aperture of the door, so as to fa-
cilitate the application on the inside of the
door of the latch-case, within which the inner
end of the said connecting-bar is received and
held. 80

The connecting-bar H is made of sufficient
length to extend through doors of maximum
thickness, and it is passed to an indefinite ex-
tent, regulated by the thickness of the door,
through a slot i in the roll-back I or T-head, 85
which receives the rotary movement trans-
mitted from the key-hub G by the connect-
ing-bar H, and by its arms I' acts upon the
cross-head or lugs k upon the ends of the
shank-rods K of the latch to retract the same 90
in the usual way.

The thumb-knob by which the latch K' is
operated from the inside is shown at N. This
is provided with the customary internal T-
head or lugs n, which operate on the lugs k 95
of the latch-rods K when the said thumb-knob
is turned in either direction, and the shank
of said thumb-knob being in line with the
connecting-bar H is excavated or formed with
a longitudinal cavity N', extending nearly 100
throughout its length, so that the said con-
necting-bar may extend and project within
the shank of the thumb-knob to an indefinite
extent when required by the application of
the lock to a thin door, as illustrated in Figs. 105
I and III.

As is usual with this class of locks the ex-
ternal escutcheon and tumbler-case C' and the
annular escutcheon plate or collar D are se-
cured to the door from the inside by connect- 110
ing-screws T, which pass through a holding-
plate U or lock-case on the inside of the door
and enter suitable screw-holes or threaded
sockets prepared for them in the escutcheon.
In my improved mode of securing the escutch- 115
eon and tumbler-case and connecting the
holding-screws T thereto I employ adjustable
pockets V, internally threaded to provide
sockets for the reception of the holding-screws
T and having paired transverse notches v in 120
their sides, two or more such pairs of notches
being provided at intervals so as to permit
the longitudinal adjustment of the said screw-
pockets V relatively to the escutcheon and
tumbler-case, the said screw-pockets being 125
applied to forked or notched lugs c', project-
ing laterally from the tumbler-case C', as
shown. It will thus appear that in applying
the lock to a thin door, as illustrated in Figs.
I and III, the screw-pockets V may be re- 130
tired almost completely within the thickness
of the tumbler-case, and thus any necessary
part of the length of the screws themselves
may be taken up within the thickness of the

tumbler-case, so as to bring the holding-plate U as close to the inner face of the tumbler-case as the thickness of the door may require. If the lock is to be applied to a slightly-thicker door, this can be accommodated within the limit of the length of the holding-screws without shifting the screw-pockets V; but for a much thicker door the screw-pockets are advanced to the position shown in Figs. II and IV, the projection of the said screw-pockets being supplemented by any necessary part of the length of the screws themselves. I thus provide a range of adjustment to suit variations in the thickness of doors nearly equal to the length of the holding-screws added to the distance between the notches on the screw-pockets. By this simple and ready means of adjustment I adapt the same lock and its attachments for application to a door of any thickness within usual limits—say from seven-eighths of an inch to two and one-fourth inches. It is manifest that screw-pockets of greater length and with more than two pairs of notches may be employed, if it be desired to adapt the lock for application to a door of excessive thickness, or longer screws or pockets may be provided in addition to those represented, which are proportioned to correspond nearly with the length of the tumbler-case, so that the holding-plate may be brought nearly in contact with the inner face of the tumbler-case, as shown in Figs. I and III, in applying the lock to a thin door.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A tumbler-case or escutcheon member for locks, provided with screw-threaded pockets longitudinally adjustable relatively to said tumbler-case for the reception of the holding-screws by which the said tumbler-case is

secured to a holding-plate on the opposite side of the door, as explained.

2. In combination with the escutcheon or tumbler-case and a holding-plate or internal lock-case and connecting-screws for securing the same to a door, the screw-pockets V, provided with notches *v*, and lugs *c'* on the tumbler-case for securing the screw-pockets adjus- tably to said tumbler-case, substantially as and for the purpose set forth.

3. The combination of an escutcheon or tumbler-case with longitudinally-adjustable screw-pockets, holding-screws engaging in said pockets to secure the escutcheon to a holding-plate on the interior of a door of any required thickness, a latch-bolt and slotted roll-back for actuating the same in the internal lock-case, a connecting-bar rotated by a key-plug in the escutcheon and passing to an indefinite distance through the slotted roll-back and transmitting rotary movement thereto, and a hollow thumb-knob permitting the projection of the connecting-bar within it, the whole co-operating to permit the adaptation and application of the attaching-screws and the operating-bar to doors of various thicknesses, as explained.

4. The combination of the tumbler-case C', rotating plug G, connecting-bar H, slotted roll-back or cross-head I, door-latch K', thumb-knob N, excavated longitudinally for the reception of the projecting end of the bar, connecting-screws T for securing the tumbler-case to the door, and the screw-pockets V, longitudinally adjustable relatively to the tumbler-case to permit the application of the lock to doors of different thicknesses, substantially as explained.

WALDO R. BALLOU.

Witnesses:

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