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Patented May 2, 1899.

H. G. VOIGHT.
CYLINDER LOCK.

(Application filed Aug. 1, 1898.)

(No Model.)

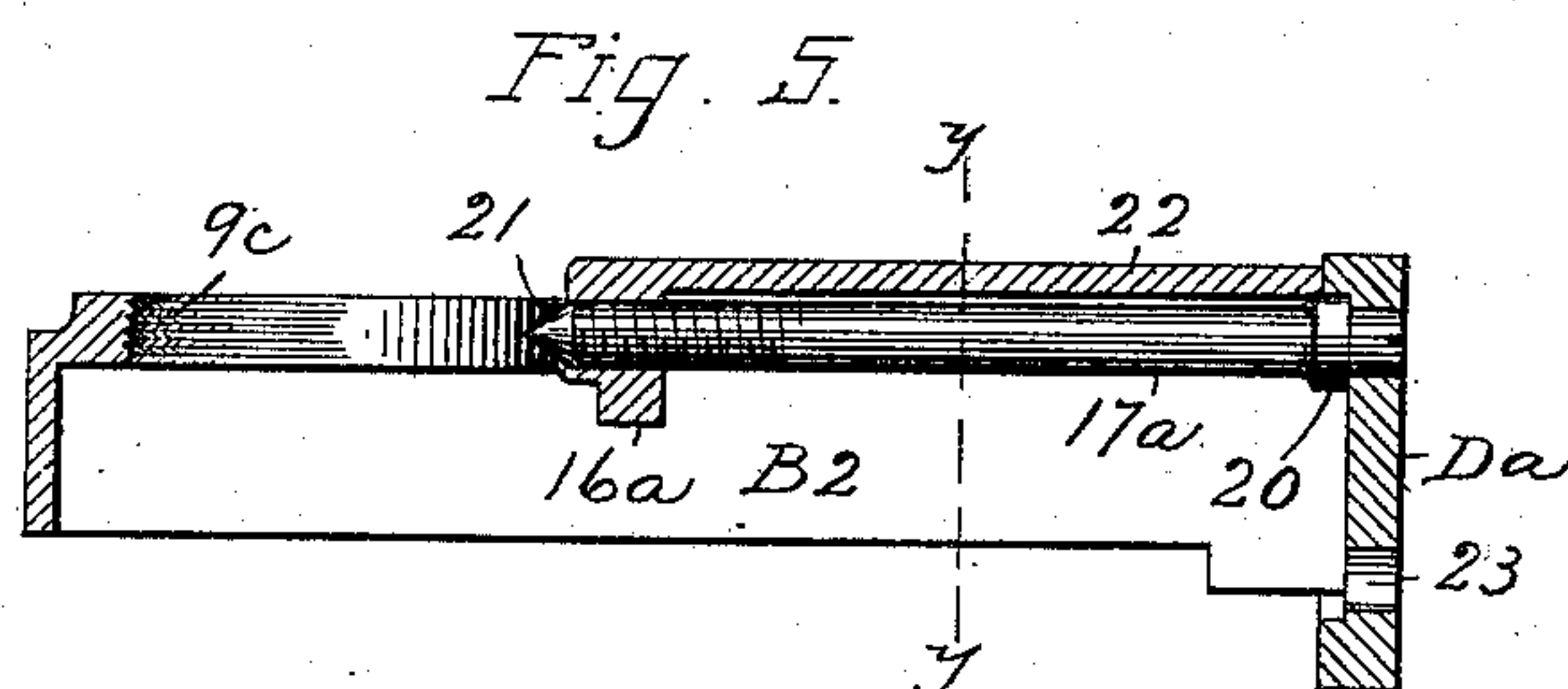
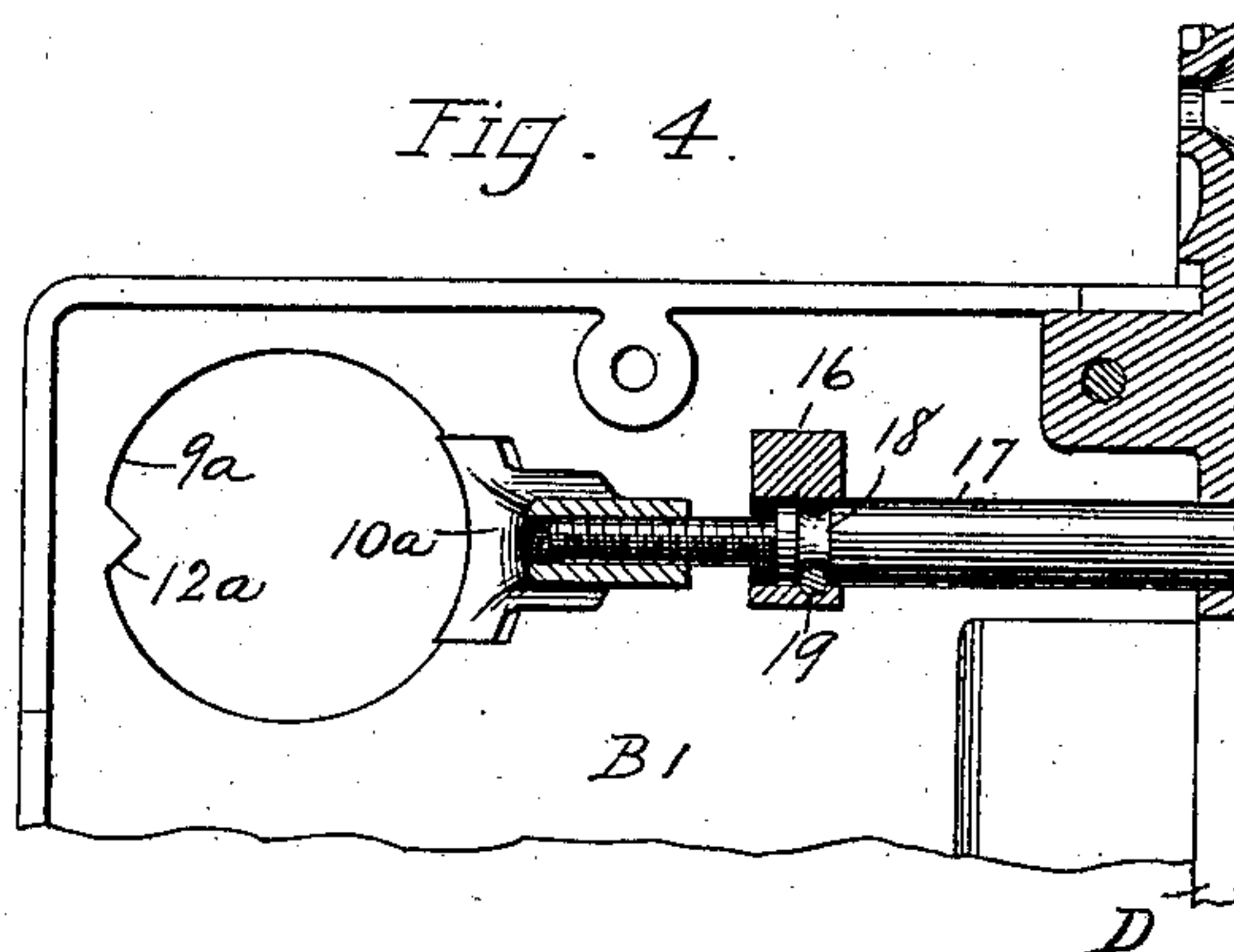
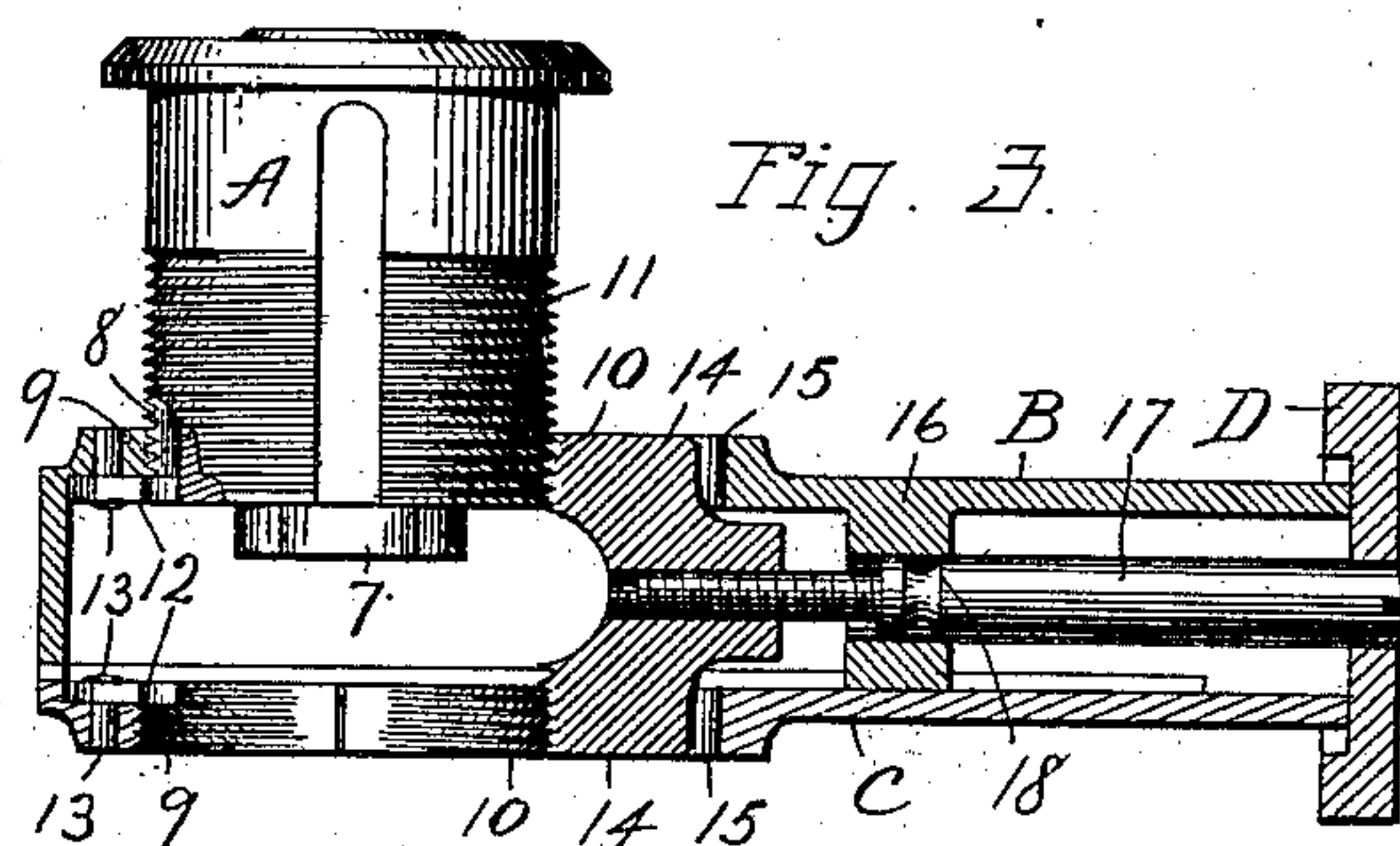
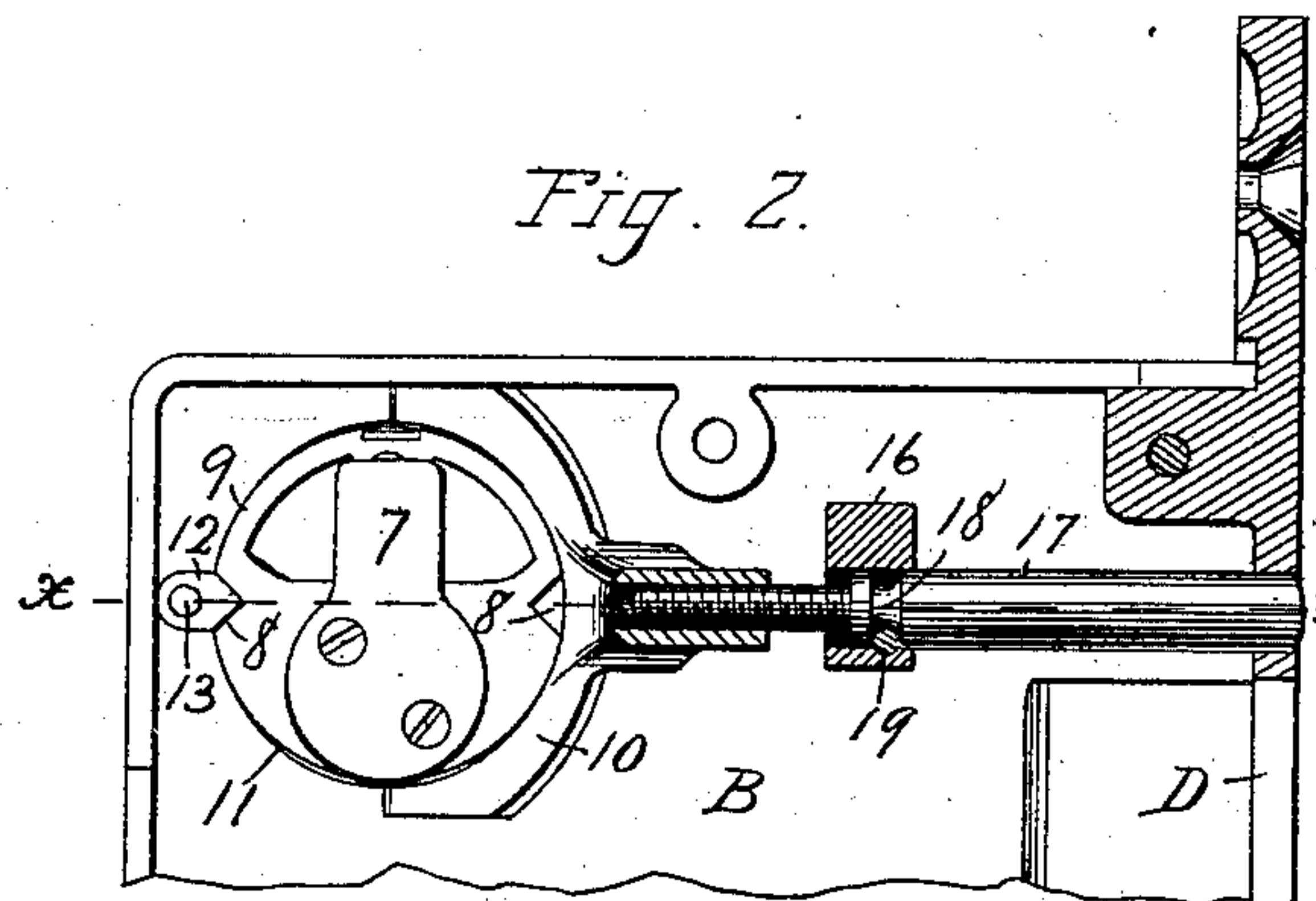
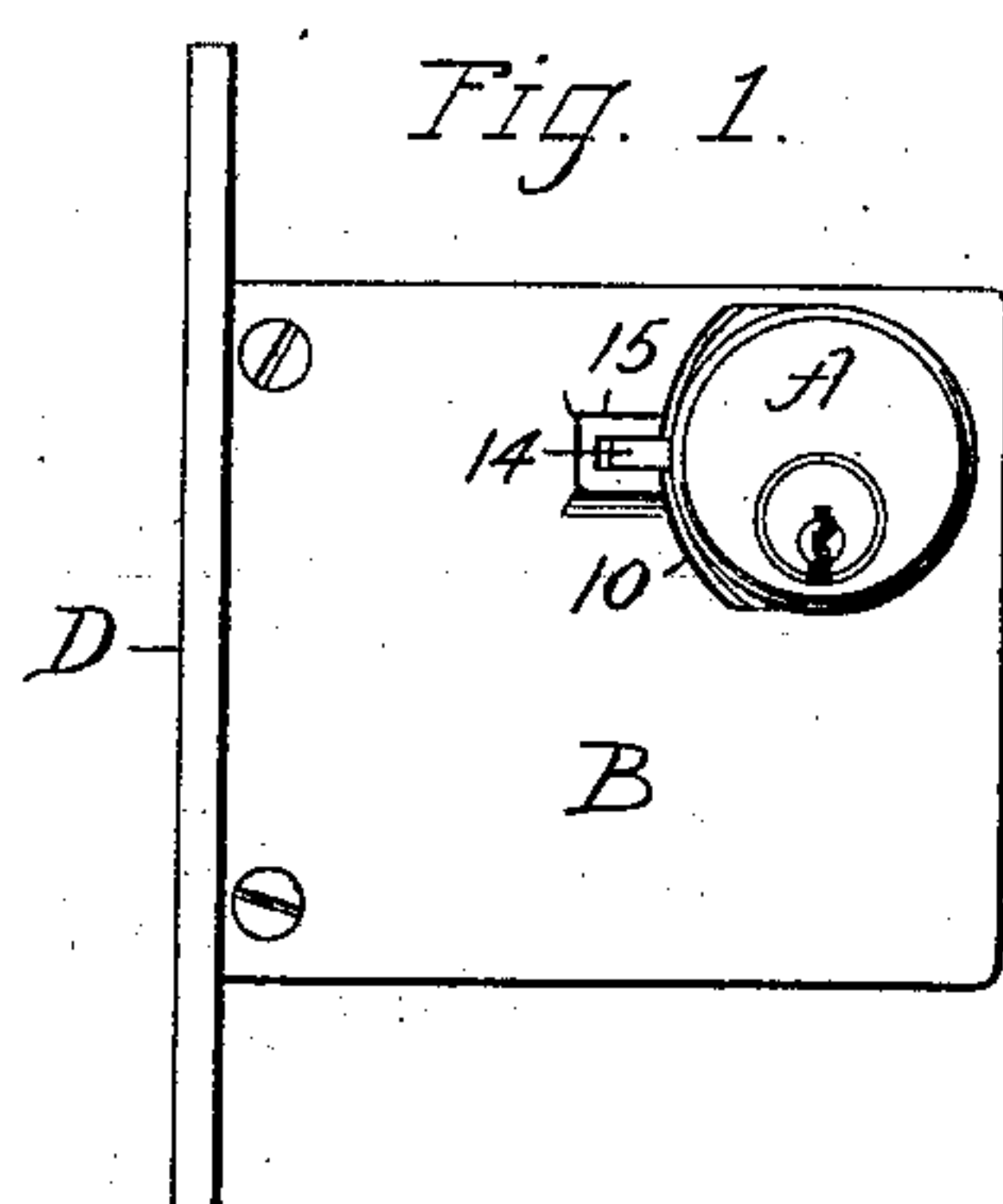
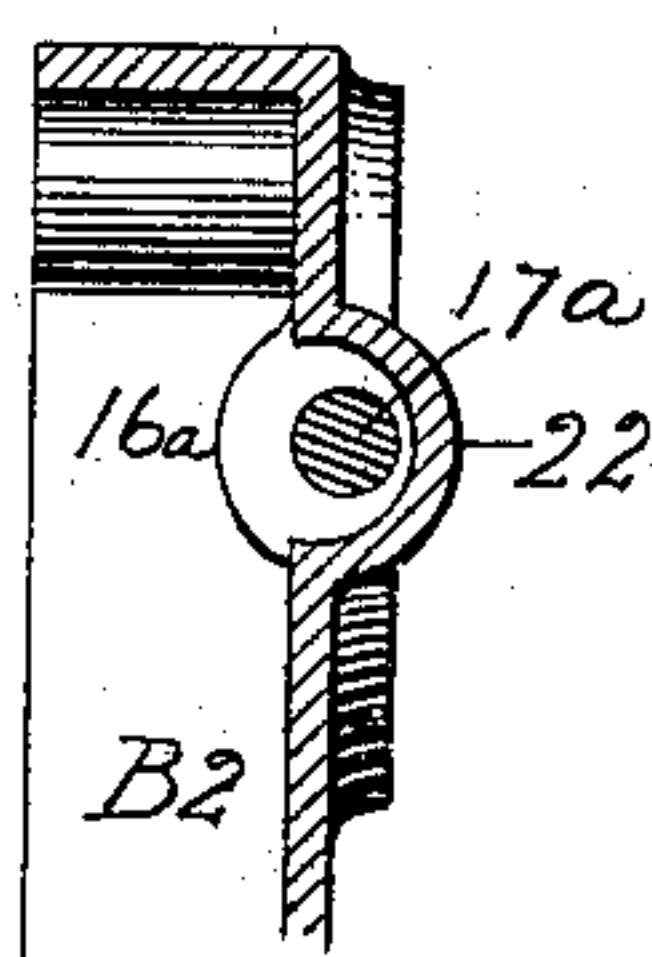


Fig. 6.



Witnesses
O. W. Stiper
P. J. Egan

Inventor
Henry G. Voight.
By James Shepard.
Atty.

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

CYLINDER-LOCK.

SPECIFICATION forming part of Letters Patent No. 624,411, dated May 2, 1899.

Application filed August 1, 1898. Serial No. 687,398. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Cylinder-Locks, of which the following is a specification.

My invention relates to improvements in cylinder-locks; and the main objects of my improvements are convenience and efficiency in securing the cylinder or pin-tumbler lock to the lock-case.

In the accompanying drawings, Figure 1 is a front elevation of my lock. Fig. 2 is a sectional rear elevation of a portion of the same on an enlarged scale, the cap-plate being removed. Fig. 3 is a horizontal section of my lock on the line *xx* of Fig. 2. Fig. 4 is view, corresponding to Fig. 2, of my lock-case in a modified form. Fig. 5 is a horizontal section of my lock-case in still another modified form, the cap-plate being removed; and Fig. 6 is a sectional view of the same on the line *yy* of Fig. 5.

A designates a cylinder or pin-tumbler lock of any ordinary construction, the same being provided with the usual wing 7 for throwing the ordinary lock-bolt. (Not shown.) I also provide said cylinder-lock with a longitudinal groove 8 for receiving a projection or lug to determine the position of the cylinder-lock case.

B designates the body, and C the cap-plate, of the lock-case to which the cylinder-lock is to be secured.

My present invention relates to the construction whereby the cylinder-lock is secured to the lock-case, and it is applicable both to reversible and non-reversible lock-cases. The receiving-socket in the body of the case or the cap, or both, consists of a fixed segmental wall 9 and a sliding segmental wall 10, both walls being concaved on their confronting faces to substantially fit the sides of the cylinder-lock A. I have shown said cylinder-lock as provided on its inner end with ribs in the form of screw-threads 11, and I prefer to form corresponding ribs or threads on the confronting walls 9 and 10 of the socket. It should be noted that the segmental walls 9 and 10 in Figs. 1, 2, and 3 and the wall 9^c in

Fig. 5 each extend over nearly half of the circumference of the cylinder-lock.

In order to avoid the necessity of moving the sliding wall of the socket over a great range to receive the cylinder-lock, I make the diameter of the complete socket at the junction of the fixed and sliding walls as large or a little larger than the greatest diameter of the threaded portion of the cylinder-lock, whereby when the sliding wall is drawn back a distance equal to the depth of the ribs on each side the said cylinder-lock may be readily passed endwise into the socket without rotating or screwing it in. In other words, the bottoms of the grooves in said walls are concentric and the tops of the grooves are eccentric, whereby the grooves are the deepest at the middle portion of each wall and become more shallow as they recede from the line of motion which passes through the axis of the socket.

Upon the fixed wall there is a projection or lug 12 for entering the longitudinal grooves 8 of the cylinder-lock, and for convenience of forming the threads or ribs on the fixed wall I form said lug 12 of a separate piece from the said wall and secure it in place by a rivet 13 or other mechanical fastening after the thread or ribs are formed on the said fixed wall 9. The sliding wall 10 of the socket is provided with a guide-lug 14, that is fitted in suitable ways 15 in the body of the lock-case. The body of the lock-case is also provided with a stud or post 16, in which a bearing for the screw 17 is formed. Said screw is provided with a peripheral groove 18, into which the pin 19 in the stud or post enters to secure the screw 17 against longitudinal movement, while it is free to rotate in the ordinary manner of securing freely-rotating parts against longitudinal movement. The said screw also has a bearing in the face-plate D, whereby it is accessible from the outside of the lock-case. Its inner end enters a threaded hole in the body of the sliding wall 10, whereby said sliding wall may be moved to and from the fixed wall by rotating the screw 17.

If desired, the construction hereinbefore described may extend to both sides or both plates of the lock by merely providing the cap-plate C with the fixed wall 9, lug 12, rivet

13, and ways 15, while the sliding wall 10 and its guide-lug 14 may be formed in duplication of those on the opposite broad side of the lock-case and extend from the same body, so as to be operated by the same screw 17, whereby the cylinder-lock may be attached to either broad side of the lock-case for use on a right or left hand door, as may be desired. When thus constructed, the cylinder-lock should be provided with two longitudinal grooves on diametrically opposite sides.

In securing the cylinder-lock A to the case the screw 17 is turned to draw the sliding wall 10 away from the fixed wall sufficiently to enable the cylinder-lock to be slipped endwise into the socket of the lock-case. The backward movement of the sliding wall 10 is limited by contact with the lock-case, so that in no event can the sliding wall be drawn back a distance from the inner end of the projection or lug 12 equal to the largest diameter of the threaded portion of the cylinder-lock, so that said lock can be inserted only when the lug 12 is received in the longitudinal groove 8 of the cylinder-lock, whereby said lock is always properly located in the case. After inserting the cylinder-lock as far as may be desired the screw 17 is turned to bind the cylinder-lock between the fixed and sliding walls 9 10 and to engage the threads of the said walls and cylinder-lock for firmly securing the said lock to the case.

In Fig. 4 I show a portion of a lock-case body B' which is similar to the body B in Figs. 1, 2, and 3; but the fixed wall 9^a of the socket is not threaded or ribbed, and consequently the lug or projection 12^a may be cast integral with the said body. The sliding wall 10^a is similar to that before described, but is of less extent, so that it does not embrace so much of the periphery of the cylinder-lock. The face-plate D, screw 17, and its bearings are the same as before described, and therefore are designated by the same reference letter and numerals. The operation is the same as that first described, excepting that the only engagement of the threads or ribs is between the cylinder-lock and the sliding wall 10^a, inasmuch as the sliding wall is the only portion of the socket that is ribbed or threaded.

In Figs. 5 and 6 the lock-case body B² is provided with a socket that is wholly surrounded by a fixed wall, the said socket being slightly oval when seen in side view and provided with a ribbed or threaded wall 9^c. I have shown said wall as provided with straight ribs instead of screw-threads, and the cylinder-lock for use therewith will be correspondingly ribbed. It is of course evident, as before implied, that screw-threads and straight ribs may be substituted the one for the other as equivalents in either of the constructions herein shown and described. The cylinder-lock for Figs. 5 and 6 is grooved longitudinally, as in both of the constructions before described. It is held within the socket and with its ribs engaging those of the wall 9^c by means of the

set-screw 17^a, the threaded portion of which screw is received in the threaded hole in the lug 16^a. The pointed end 21 of said screw serves the double purpose of a movable holding-wall and of a projection for entering a longitudinal groove in the cylinder-lock. The head or outer end of the screw 17^a has its bearing in the face-plate D^a, and said screw is provided with a shoulder 20, that engages the inner side of said face-plate and limits the movement of said screw, so that its pointed end 21 cannot be wholly withdrawn from the socket and cannot be drawn back sufficiently to permit the cylinder-lock to be revolved in the socket, because the said lock can only be inserted by having the pointed end 21 of the screw within one of the longitudinal grooves 8. In this construction the screw 17^a lies within a recessed extension 22 of the case, so that said screw is substantially outside the inner face of the body B² of the case. I have shown the face-plate D^a as provided with a second hole 23 for a bearing for another screw like 17^a, whereby, if desired, the cap may be provided with a wall 9^c, lug 16^a, recessed extension 22, and screw 17^a, and thus make the case adapted to receive a cylinder-lock on either side. Figs. 5 and 6 in this application are only to show generic features in common with the generic features of Figs. 1, 2, 3, and 4. The specific construction shown in Figs. 5 and 6 forms no part of the invention herein claimed.

In ordinary locks of this class the cylinder-lock is attached to the lock-case by screwing it into place and then binding with a set-screw, the pointed end of which enters a longitudinal groove in the cylinder-lock. I am also aware that a prior patent partially shows and partially describes a cylinder-lock or threaded tubular casing as secured to the back plate of the lock case by means of jaws one of which is stationary and the other movable, the movable jaw being guided in a slot in the back plate and provided with a nut engaged by a screw that is free to revolve, but held against longitudinal movement. The movable jaw is also shown as provided with a spur which enters a groove in the tubular casing. The said jaws in side view are shown as concentric, and the movable jaw and spur are shown as capable of being drawn back sufficiently to permit the cylinder-lock to revolve between the end of said spur and the fixed jaw. Aside from the spur before noted no threads, grooves, or ribs are either shown, described, or suggested for the holding-faces of the jaws.

In all of the constructions herein shown and described my lock differs from all the said prior art, among other things, in the fact that a projection always enters the longitudinal groove in the cylinder-lock while said lock is being inserted, so that the lock cannot be rotated at all.

It is apparent that some changes from the specific construction herein disclosed may be

made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. The combination of a cylinder-lock having peripheral ribs with a holding-socket having grooves upon the inner face of one of its holding sides adapted to engage the peripheral ribs upon the cylinder-lock, said grooves becoming more shallow as they recede from the line of motion which passes through the axis of the said socket, and means for forcing the ribs of said lock into engagement with said grooves, substantially as described.

2. The combination of the cylinder-lock A, having peripheral ribs and a longitudinal groove with the lock-case having a receiving-socket for said cylinder-lock large enough to receive said lock when passed endwise therein without rotation and provided with fixed and movable walls, and also with ribs and a projection for engaging the ribs and the longitudinal groove of the said cylinder-lock, and means for preventing the said socket from being opened far enough to permit the disengagement of the said projection and longitudinal groove, substantially as described.

HENRY G. VOIGHT.

Witnesses:

M. S. WIARD,
P. M. BRONSON.