

No. 614,192.

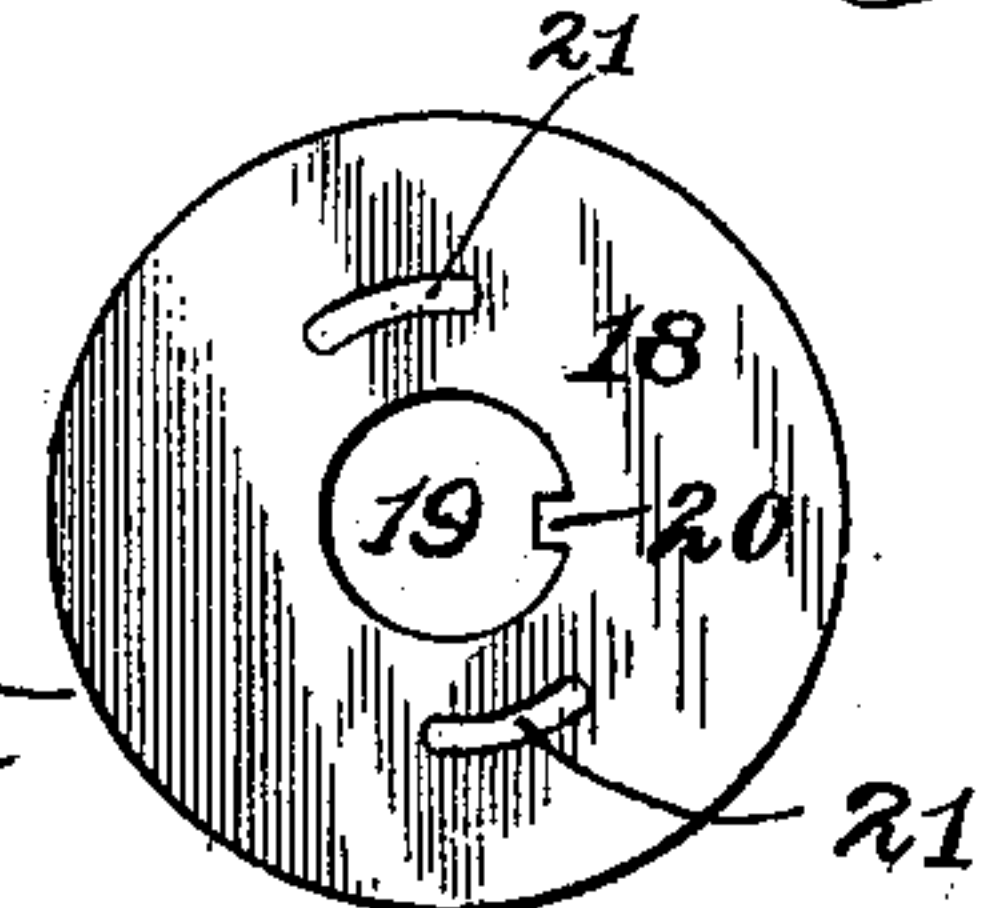
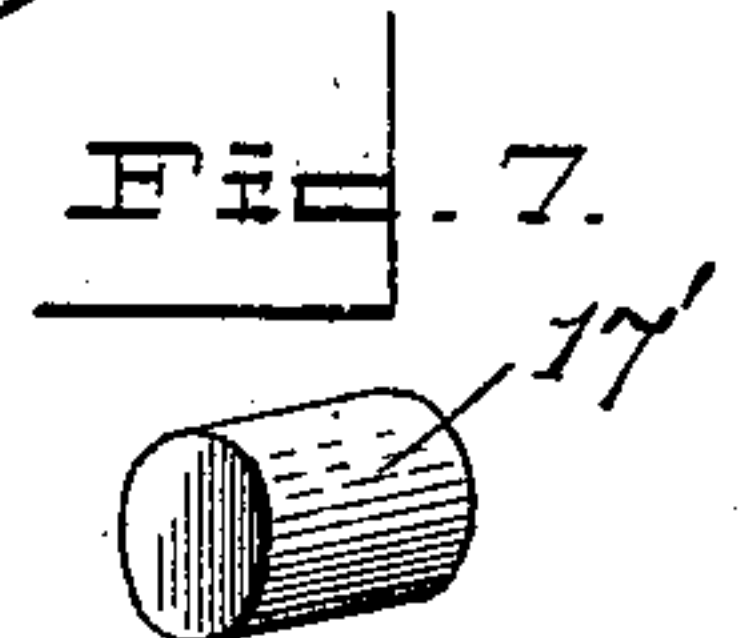
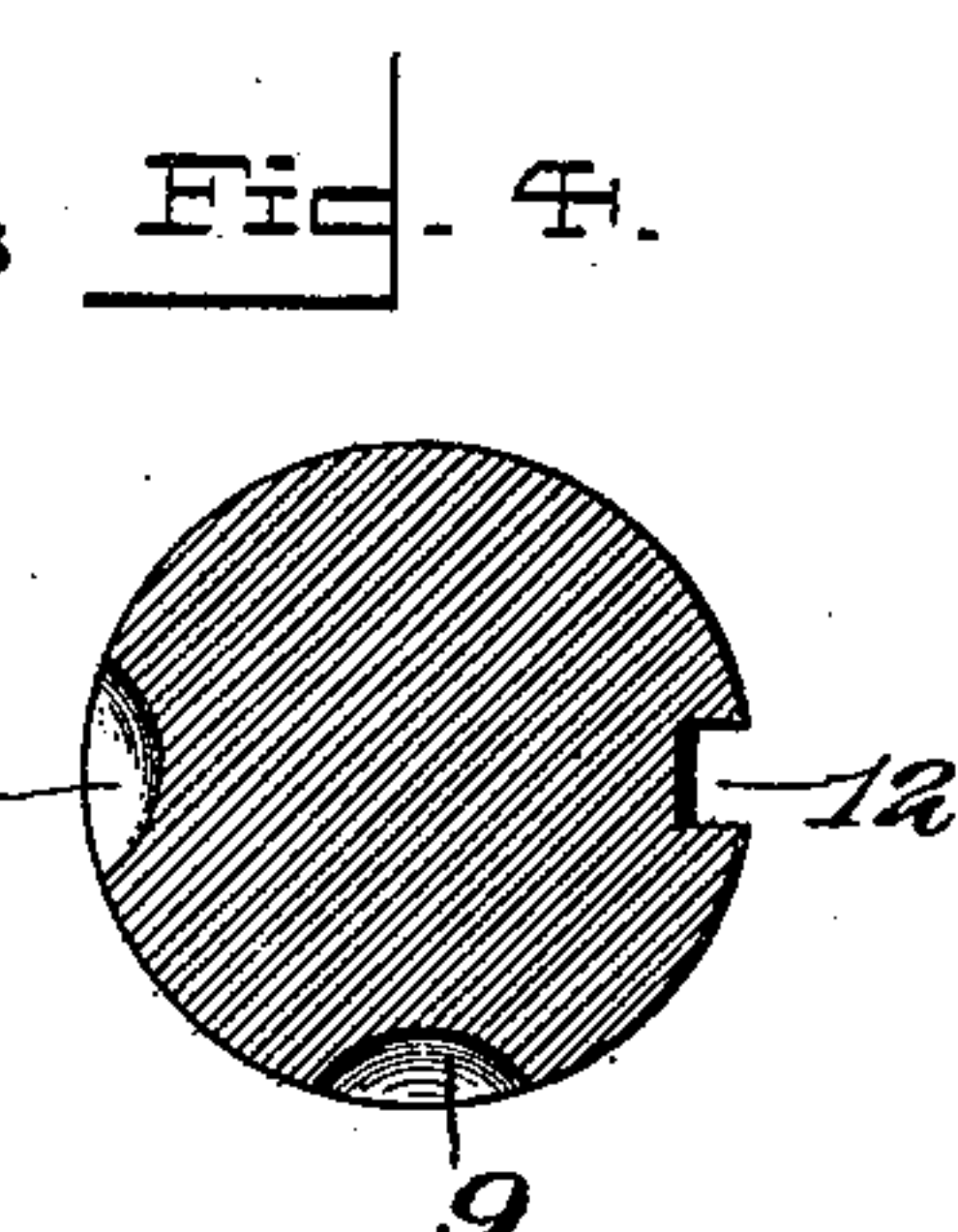
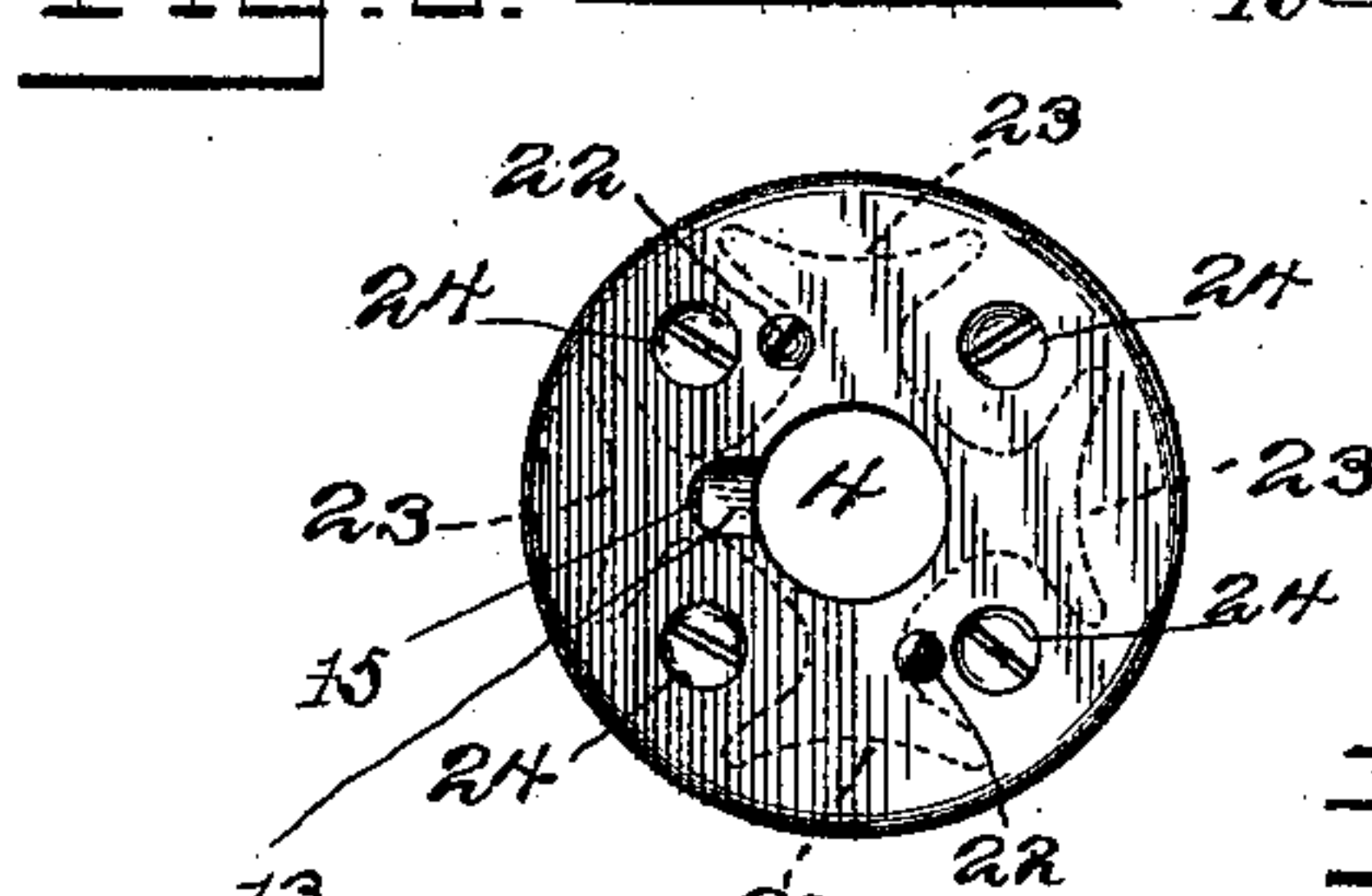
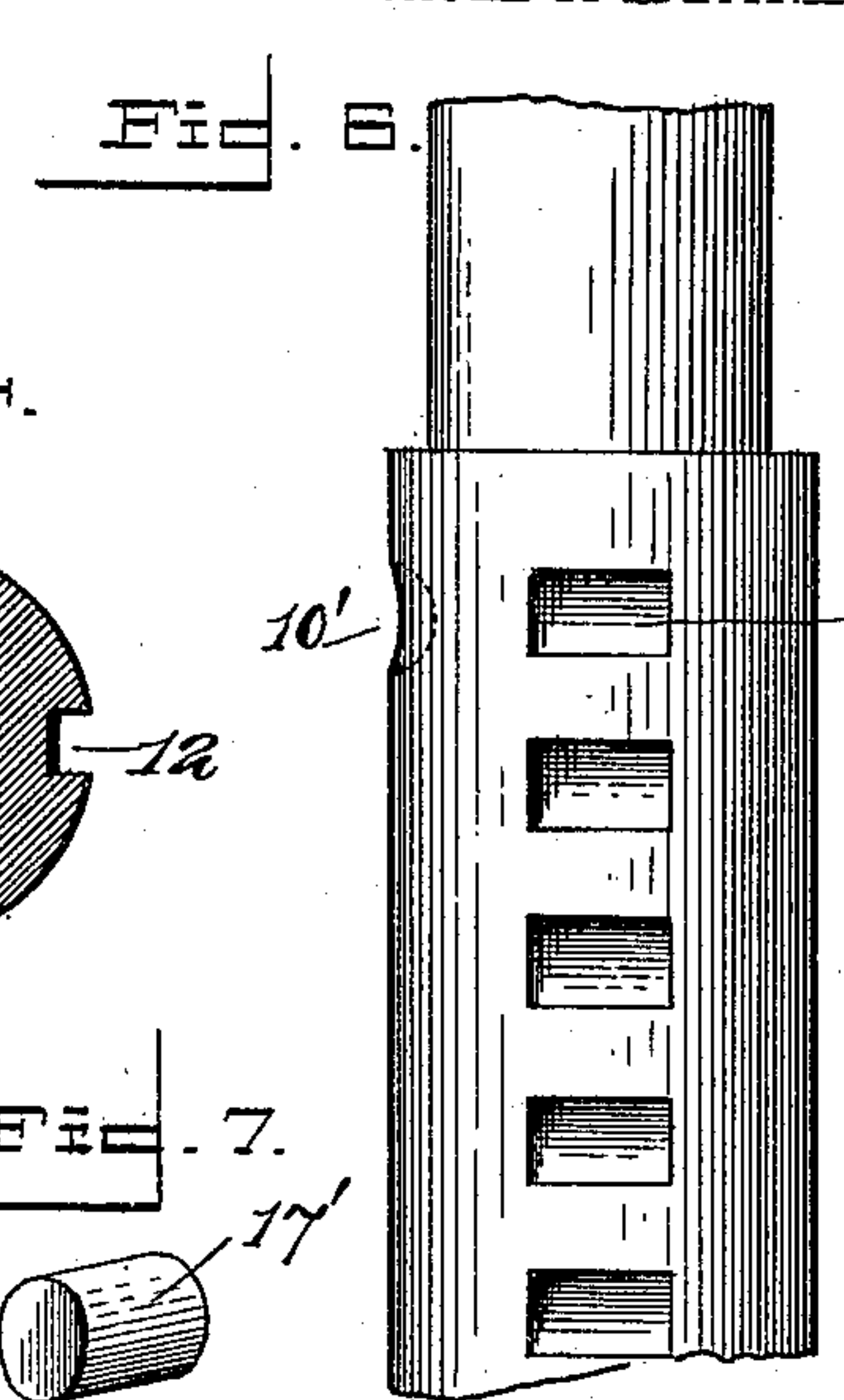
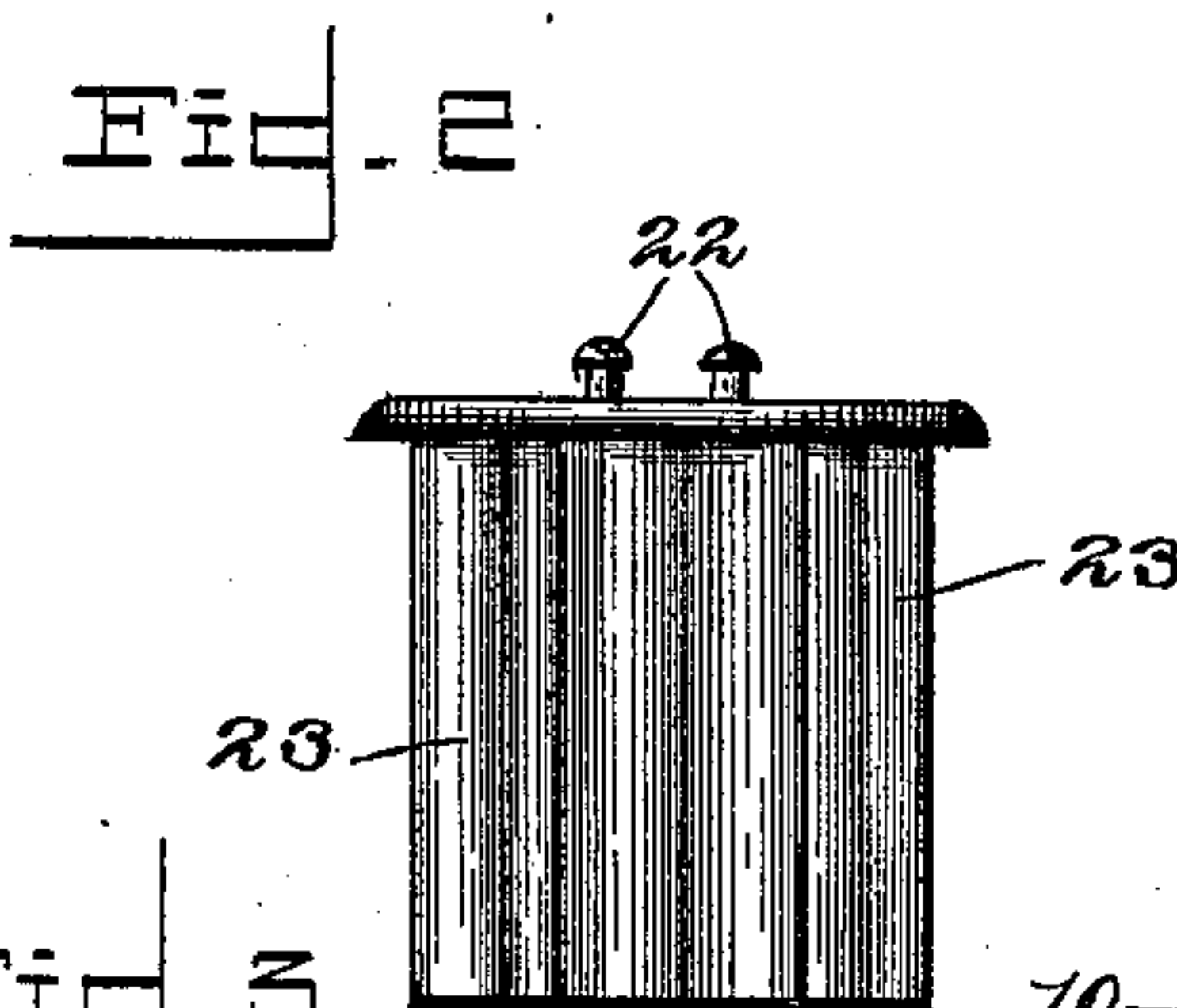
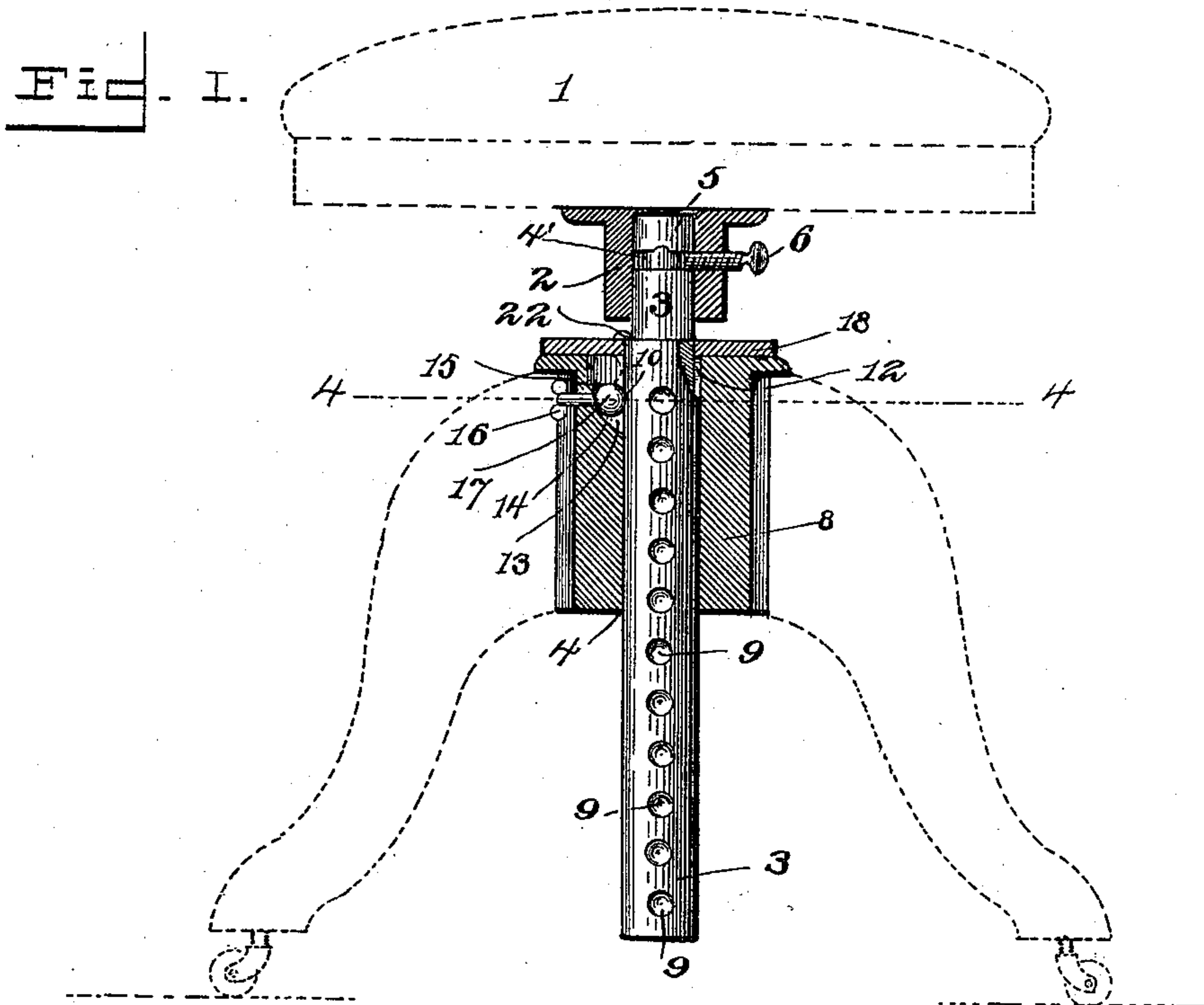
Patented Nov. 15, 1898.

H. W. WELLES.

AUTOMATIC LOCKING DEVICE FOR CHAIRS.

(Application filed Sept. 22, 1897.)

(No Model.)



Witnesses:
Fenton S. Belt,
L. Parker Farrington

Inventor:
Howard Welles
By *Irving E. King* Attorney

UNITED STATES PATENT OFFICE.

HOWARD W. WELLES, OF POUGHKEEPSIE, NEW YORK.

AUTOMATIC LOCKING DEVICE FOR CHAIRS.

SPECIFICATION forming part of Letters Patent No. 614,192, dated November 15, 1898.

Application filed September 22, 1897. Serial No. 652,528. (No model.)

To all whom it may concern:

Be it known that I, HOWARD W. WELLES, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Automatic Locking Devices for Chairs, &c.; 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 a novel form of music-stool, office-chair, or the like; and the object is to provide a simple, inexpensive, and effective means whereby the seat may be raised or lowered in a simple and convenient manner.

To this end the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same reference characters indicate the same parts of the invention.

Figure 1 is a vertical section of a piano-stool embodying my invention. Fig. 2 is a side elevation of the socket or hub. Fig. 3 is a top plan view of the same with the parallel ribs shown in dotted lines. Fig. 4 is a transverse section of the vertically-adjustable cylindrical rod on the line 4-4 of Fig. 1. Fig. 5 is a plan view of the limit or check plate. Fig. 6 is another form of the rod, and Fig. 7 is a perspective view of the locking-roller used in connection with the form of rod shown in Fig. 6.

1 represents the seat, which is provided with a bearing 2 to receive the upper end of the cylindrical rod 3, on which the seat freely rotates. This end of the rod is provided with an annular groove 4', the upper wall of which is formed with a series of notches 5, and 6 represents a thumb-screw mounted in the bearing 2 and arranged to project into the annular groove 4' to retain the seat in place and at the same time not interfere with its free rotation on the rod. When, however, it becomes necessary to raise or lower the rod for the purpose to be hereinafter explained, the seat is turned to the right or left and raised at the same time, so that the projecting

end of the thumb-screw 6 will engage one of the notches 5, which locks the seat to the rod to turn therewith. This rod 3 snugly fits the vertical orifice 4 in the hub or socket 8 in such a manner as to admit of a free rotary and vertical movement therein. The perimeter of the rod is provided with a longitudinal series of aligned recesses 9, a single recess 10, arranged at a right angle to and in the same horizontal plane with the uppermost one of the recesses 9, and a longitudinal keyway 12. The hub or socket 8 is provided with a pocket 13, communicating with the orifice 4, and the lower wall of said pocket is formed with an inclined face 14, the upper end of which terminates in a shoulder 15. 16 represents a thumb-screw projecting through said hub, with its inner end extending through the inclined face 14 of the pocket and in the path of a movable lock or detent in the form of a metal ball or sphere 17, located in said pocket.

18 represents a check or limit plate provided with a central orifice 19 to receive the rod 3, and it is also provided with a radial teat 20, which projects into said orifice and engages the keyway 12 in the rod, which permits the rod to slide vertically through said plate and at the same time causes the rod to rotate the plate when the former is rotated on its axis. This plate is provided with oppositely-disposed concentric slots 21, 21, through which the screws 22, 22 pass to secure it in place on the socket, and from this construction it will be understood that when the rod is rotated it carries this washer with it, and the slots serve to limit the movement of the washer and rod. When the washer and rod are at one end of their movement, the series of aligned recesses 9 are in line with the ball 17 in the pocket 18, and when at the other end of its stroke the single recess 10 is vertically aligned with said ball, the use of this recess being to limit the downward movement of the rod.

The hub or socket is provided with a series of four dovetail flanges 23, into which the upper portions of the legs are fitted or driven, and 24 represents a series of countersunk orifices to receive the usual wood-screws to assist in fixing the legs in place.

The operation of the device is as follows:

In its normal position, as represented in Fig. 1, the seat is shown adjusted to its minimum height, the rod being held in this position by the ball engaging the recess 10. When it is desired to elevate the chair, the seat 1 is turned on the rod until the thumb-screw 6 engages one of the notches 5, which locks the seat to the rod. The seat and rod are then raised to carry the ball above the shoulder 15 and the seat turned to the right until the plane face of the rod is in line with the pocket, the ball in the meantime being supported by the plane face of the rod, holding it against the horizontal face of the shoulder. As soon as the seat has been raised the proper distance the seat and rod are turned to the right to their full limit, which brings the row of recesses 9 in line with the ball, which drops into the appropriate recess and away from the shoulder 15. The seat and rod are then lowered until the ball rests on the inclined face of the pocket and in contact with one of the recesses 9 and the vertical face of the shoulder 15, which effectually locks the rod against any further downward movement, as well as against any lateral or rotary movement, while the seat is permitted to freely revolve, as heretofore described. When the seat has been adjusted to a position where it is desirable to retain it for an indefinite period of time, the set-screw 16 is then brought into play to force the ball into its recess in the rod, and thus effectually lock the rod in the hub against accidental displacement.

In the form shown in Fig. 6 the recesses 9' 10' in the rod are semicylindrical instead of semicircular, and instead of the ball or sphere 17 a solid cylindrical roller 17', as shown in Fig. 7, is employed. Otherwise the construction and operation are the same.

While I have for convenience described my invention as applied to a music-stool, it is of course equally applicable to any form of revolving or office chair, tables, and like articles of furniture, and although I have specifically described the construction and relative arrangement of the several elements of my invention I do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

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

The combination with the hub 8, provided with the vertical orifice 4 and the communicating pocket 13 formed with the inclined face 14, and shoulder 15, of a lock or detent located in said pocket, the rod 3, provided with aligned recesses, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD W. WELLES.

Witnesses:

E. M. MEEKS,
IRVING ELTING.