

(No Model.)

2 Sheets—Sheet 1.

C. P. MAYER & J. H. POMEROY.
GUARD FOR COIN CONTROLLED APPARATUS.

No. 604,407.

Patented May 24, 1898.

Fig. 1.

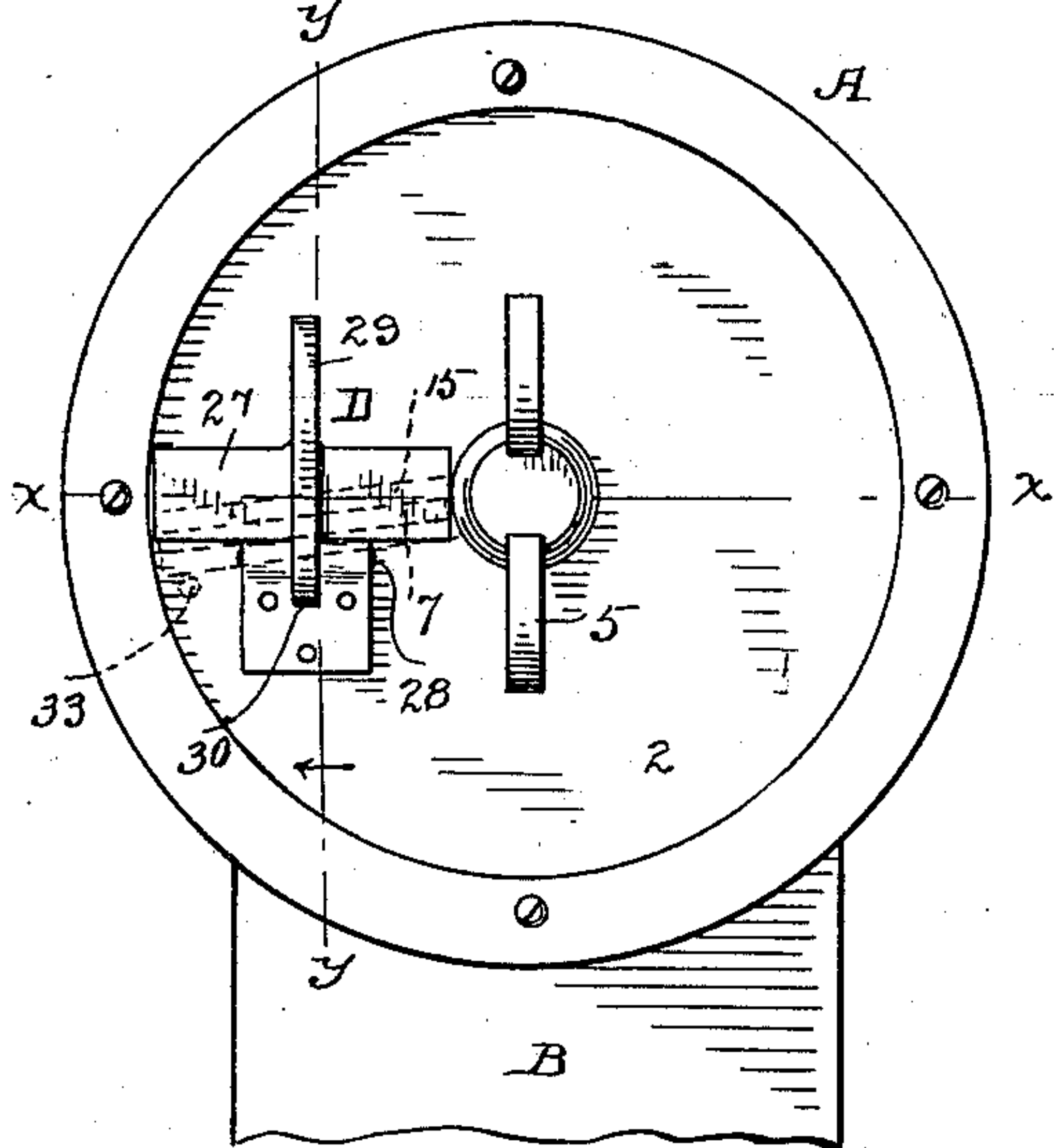


Fig. 2.

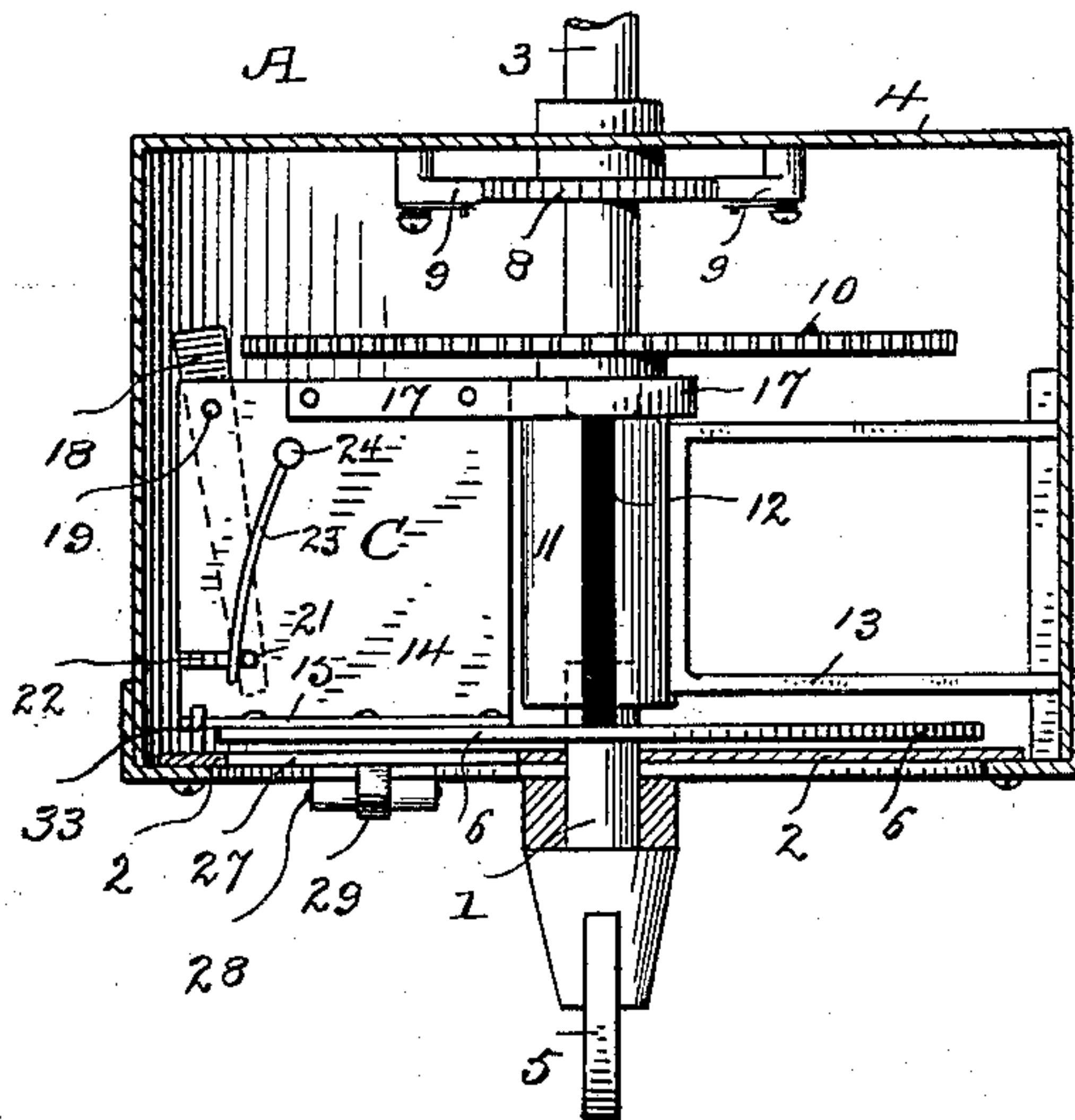


Fig. 3.

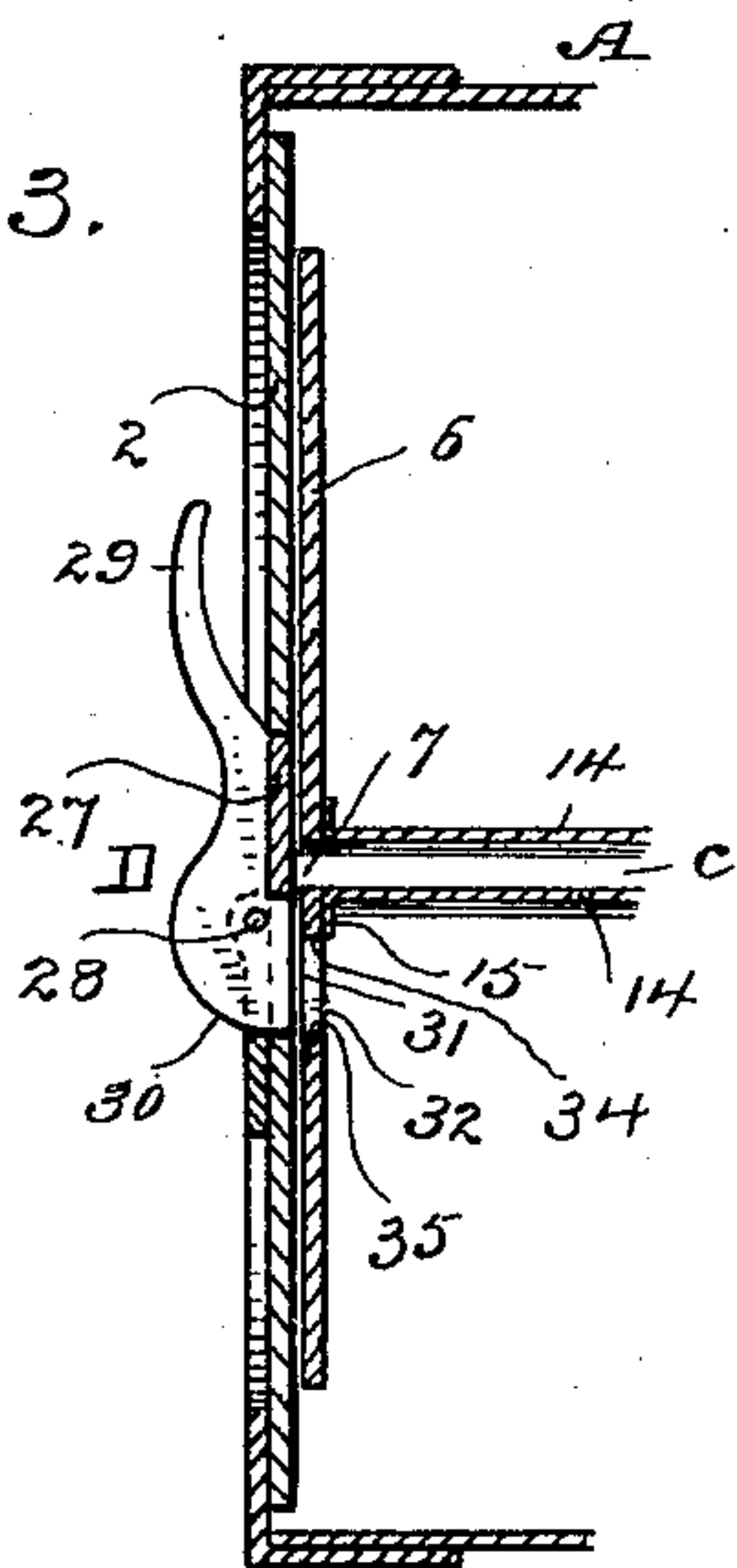


Fig. 4.

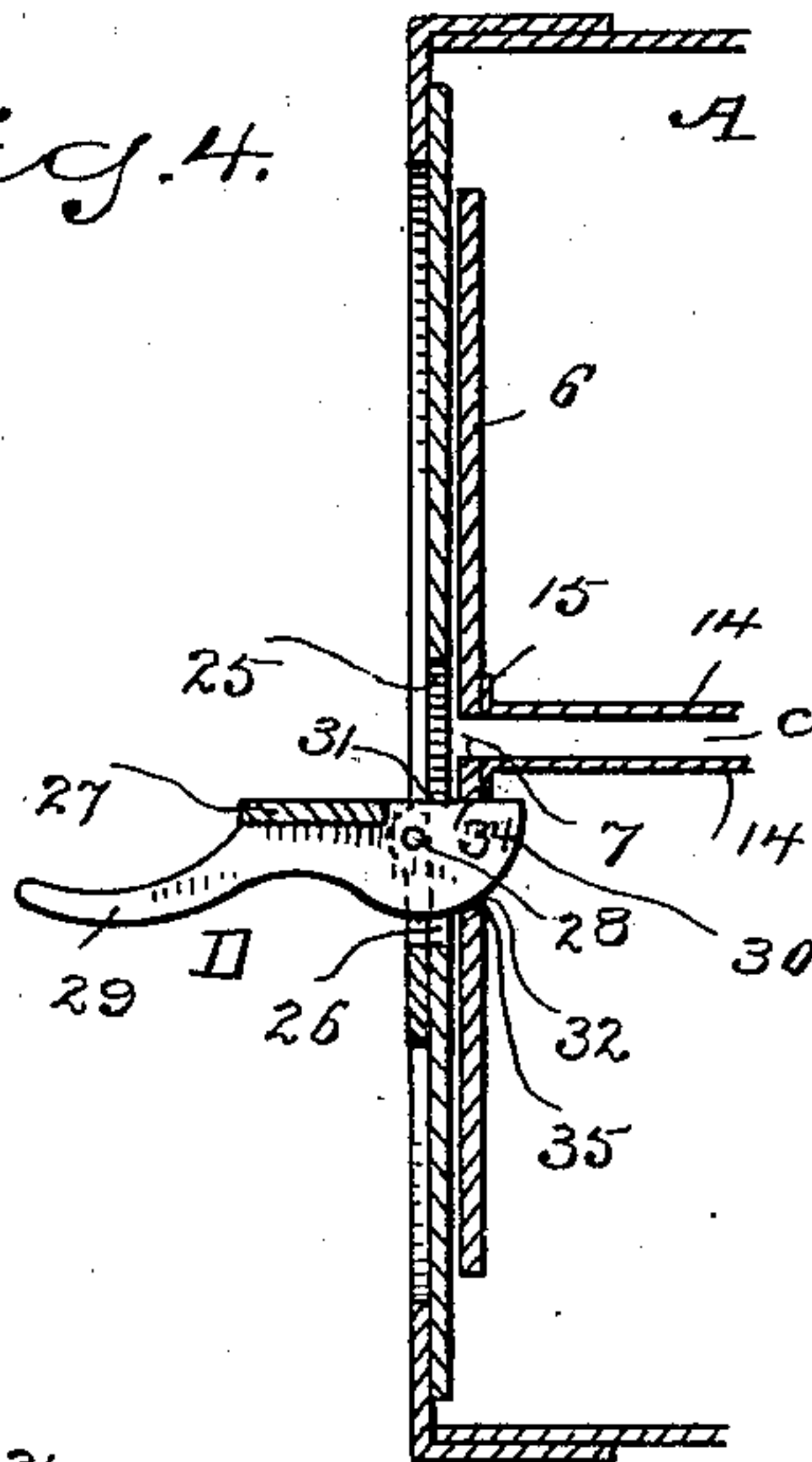
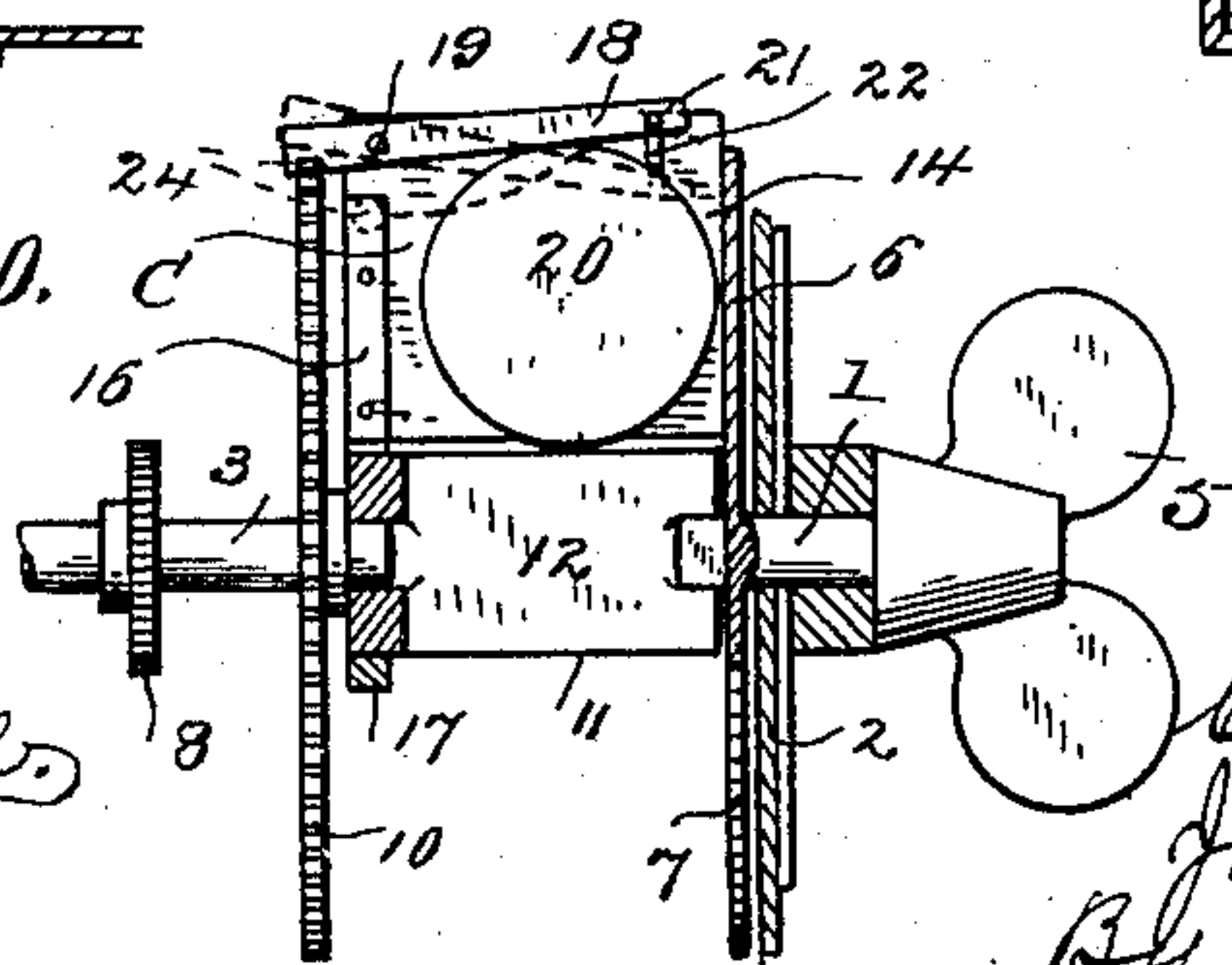


Fig. 10.



WITNESSES

H. A. Lamb
J. V. Hely

INVENTORS

Charles P. Mayer and
John H. Pomeroy
By A. M. Broster atty.

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Figg. 5.

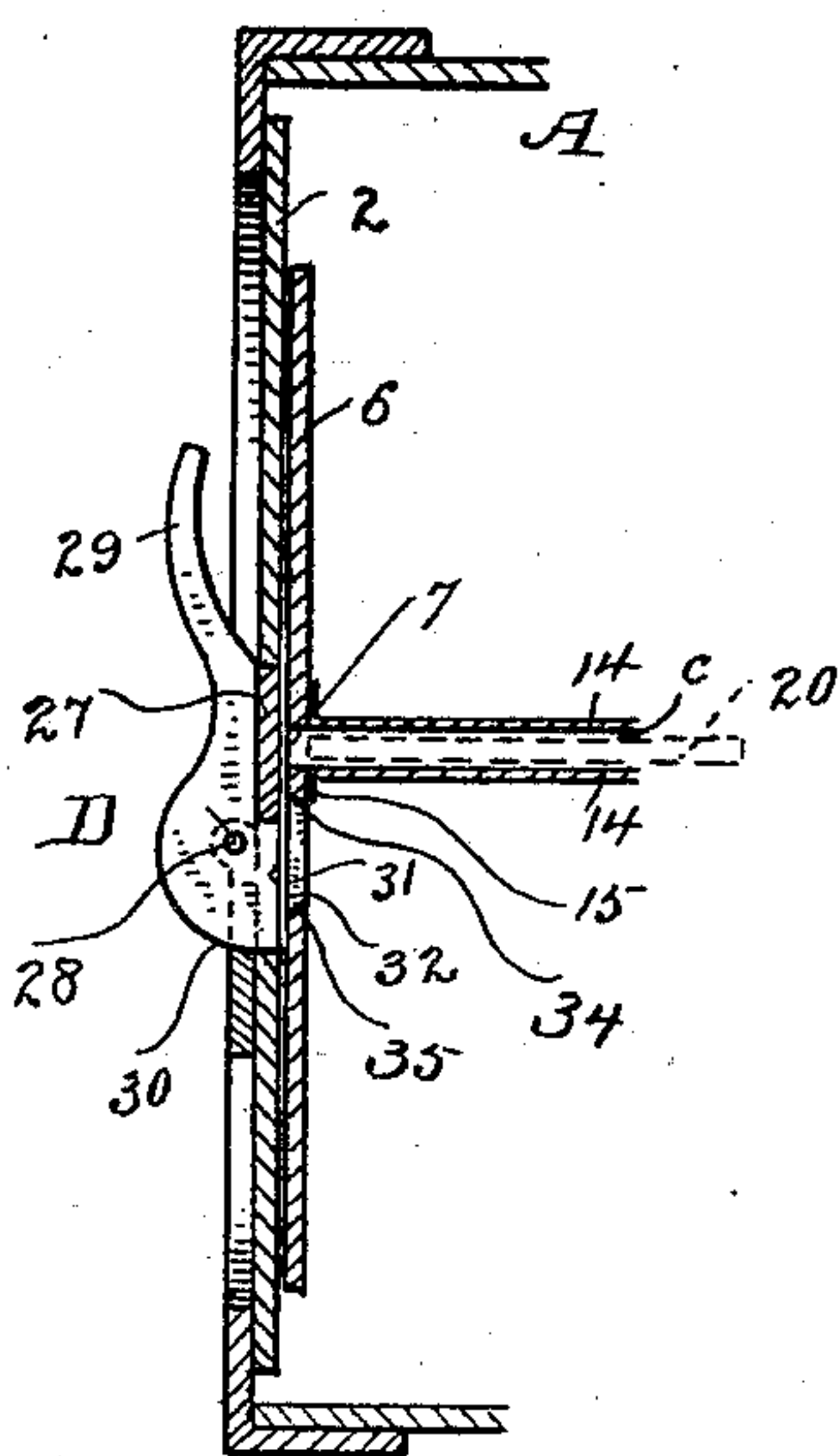


Fig. 6.

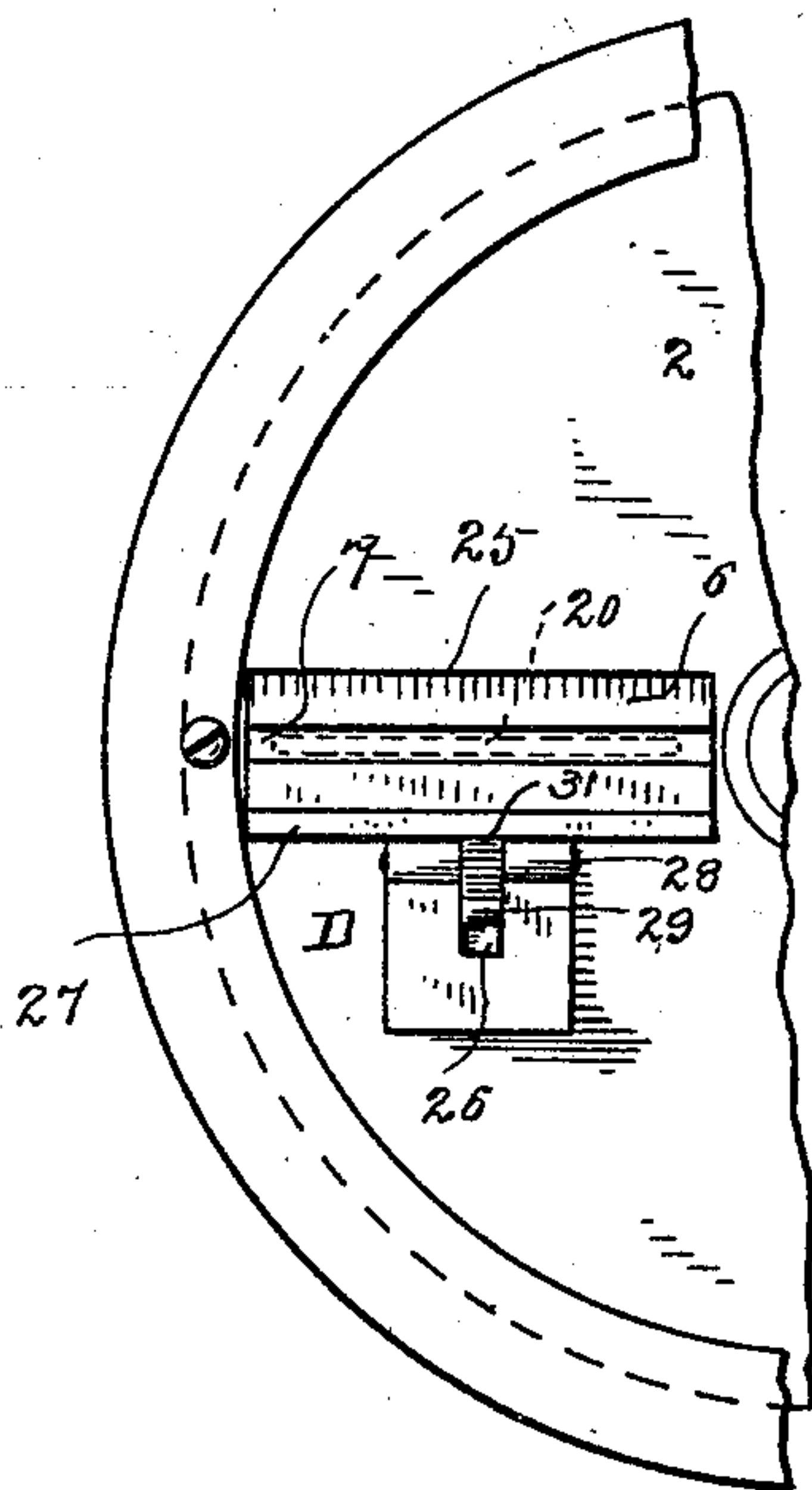


Fig. 7.



Fig. 8.

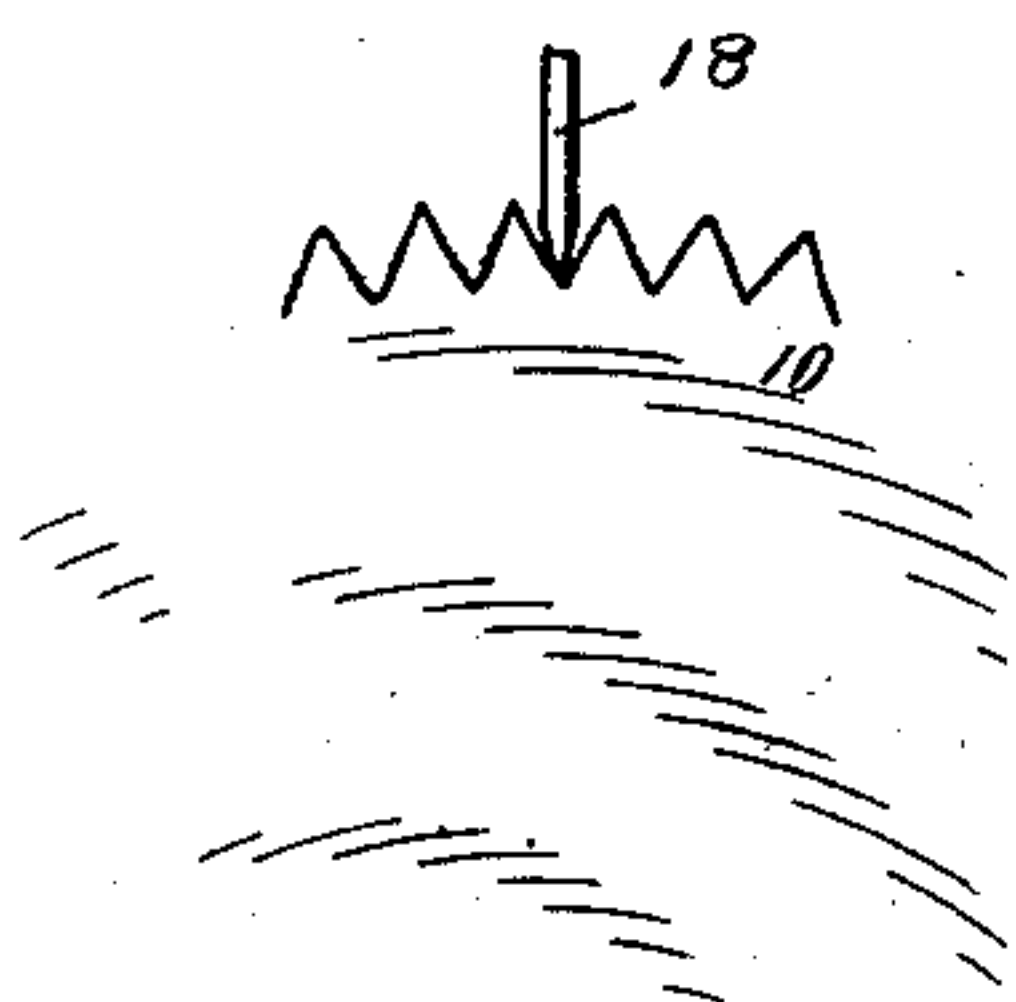
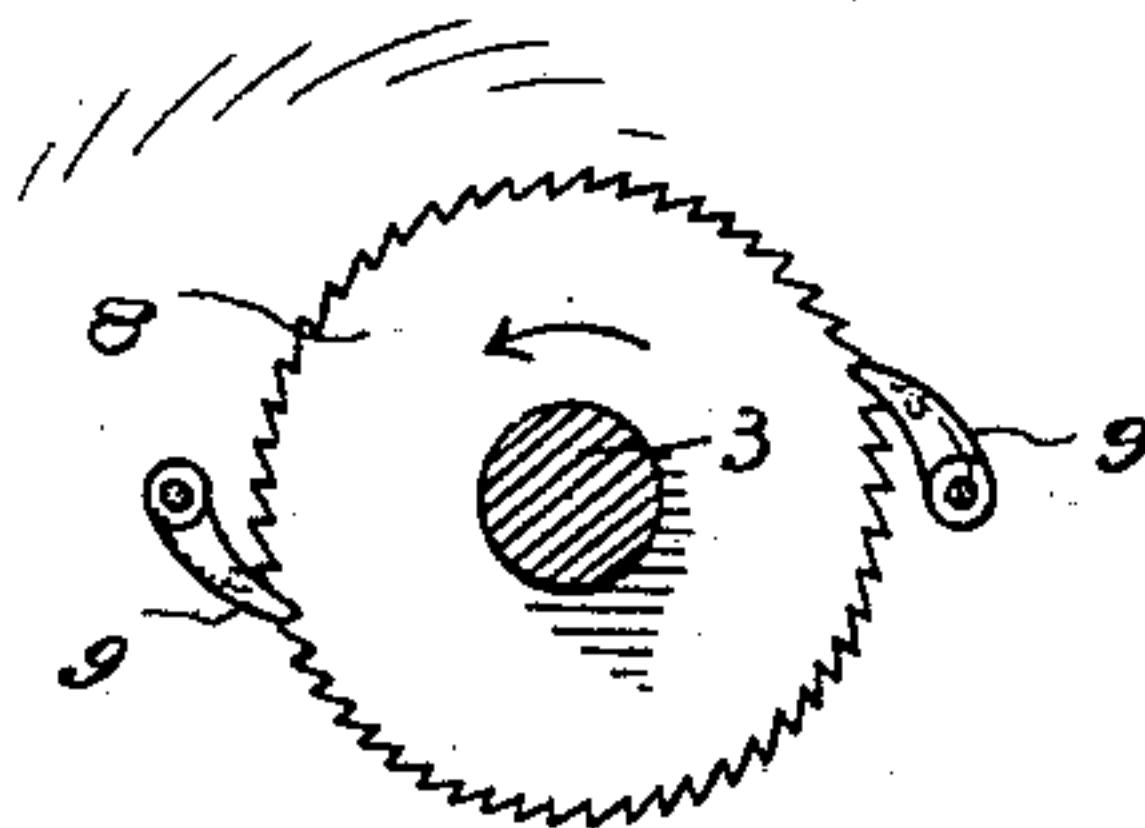
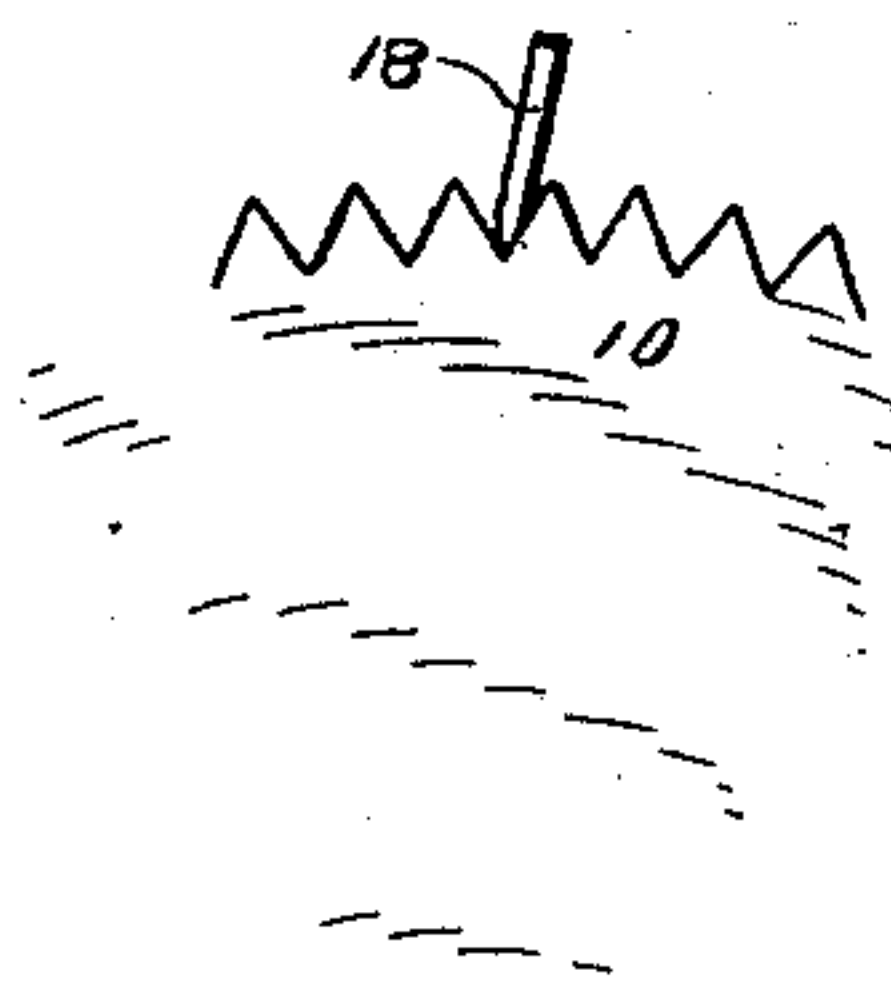


Fig. 9.



INVENTORS

H. A. Lamb.
S. V. Riley.

Charles P. Mayer and
John H. Pomeroy
By A. M. Wooster, atty.

UNITED STATES PATENT OFFICE.

CHARLES P. MAYER AND JOHN H. POMEROY, OF NEW HAVEN, CONNECTICUT.

GUARD FOR COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 604,407, dated May 24, 1898.

Application filed September 28, 1897. Serial No. 653,305. (No model.)

To all whom it may concern:

Be it known that we, CHARLES P. MAYER and JOHN H. POMEROY, citizens of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Guards for Coin-Controlled Apparatus; and we 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.

Our invention relates to coin-controlled apparatus generally, and has for its object to provide a slot cover or guard which normally covers the coin-receiver, which after the guard has been raised prevents the coin-receiver from being moved until the guard has been closed again and which after a coin has been inserted and the guard has been closed cannot be opened again until the coin has passed out from the coin-receiver.

With these ends in view we have devised the simple and novel construction which we will now describe, referring by letters and numbers to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation illustrating the application of our novel guard to the casing of a coin-receiver; Fig. 2, a section of the casing on the line $x x$ in Fig. 1, the mechanism within the casing appearing in elevation; Fig. 3, a section on an enlarged scale on the line $y y$ in Fig. 1, the position of the parts corresponding with Figs. 1 and 2—that is, the guard being in the closed position with no coin in the coin-receiver; Fig. 4, a similar view showing the guard in the open position and the coin-receiver in position to receive a coin; Fig. 5, a similar view showing the position of the parts after a coin has been inserted and the guard returned to its normal position, the coin (indicated by dotted lines) not having been expelled; Fig. 6, a partial elevation on an enlarged scale, the position of the parts corresponding with Fig. 4, a coin (indicated by dotted lines) having been inserted; Fig. 7, a diagrammatic view illustrating the normal position of the connecting-lever and the notched disk, the position of the parts not

shown corresponding with Figs. 1, 2, and 3; Fig. 8, a similar view, the position of the parts not shown corresponding with Fig. 10 and either Figs. 5 or 6—that is, showing the position of the connecting-lever and the notched disk after the lever has been placed in engagement with the disk by the insertion of a coin and either before or after the guard has been closed, said view also showing the ratchet and pawls; Fig. 9, a similar view, the ratchet and pawls being omitted, showing in exaggerated form the position of the connecting-lever and the notched disk after a coin has been inserted and while the parts of the mechanism which are held against backward movement by the ratchet and pawls are strained by the engagement of the cam with the plate on the operating-shaft while the guard is being closed—i. e., moved from the position shown in Fig. 4 to the position in Fig. 5; and Fig. 10, a view on a reduced scale, the barrel and coin-receiver being in section and the connecting-lever held in engagement with the notched disk by a coin and acting to connect the controlling-shaft with the operating-shaft, the position of the coin-receiver being substantially at right angles to the position in Fig. 1 and the coin in the position it occupies an instant before it is expelled.

A indicates a casing, and B a coin-holder below the casing.

1 denotes a shaft journaled in the front wall 2 of the casing, and 3 a shaft journaled in the back wall 4 of the casing. Shaft 1 is provided externally to the casing with a hand-piece 5 and within the casing with a plate 6, provided with a coin-slot 7. For convenience in description we will term shaft 1 the “operating-shaft” and shaft 3 the “controlling-shaft,” for the reason that it extends beyond the casing A and controls the operation of mechanism for vending or other purposes, which, however, forms no portion of our present invention and is not shown in the drawings. The controlling-shaft is provided with in the casing with a ratchet-wheel 8, which is held against backward movement by spring-controlled pawls 9. In practice this ratchet is made with a large number of very fine teeth, so as to hold the controlling-shaft at

all times against the slightest backward movement. This shaft also carries a notched disk 10, by means of which connection is made with the operating-shaft, as will be more fully explained.

11 denotes a barrel which is provided with a vertical or approximately vertical slot 12 and with recesses in its ends which receive the ends of the controlling and operating shafts, and is held concentric with said shafts by arms 13, secured to the casing.

C denotes the coin-receiver as a whole, which consists of two side plates 14, the outer ends of which are rigidly secured to plate 6, leaving a space *c* between them, said space being in alinement with coin-slot 7. Side plates 14 are shown as provided with flanges 15, which are riveted to plate 6. The inner ends of the side plates are held the required distance apart by a strip or block 16 and are riveted to the ends of metallic strap 17, the central portion of which incloses the barrel. (See Figs. 2 and 10.)

18 denotes a lever which we term the "connecting-lever" and which is pivoted between the side plates, as at 19. The rear or inner end of this lever is adapted to be placed in engagement with the notches of disk 10 by a coin 20, thereby connecting controlling-shaft 3 with operating-shaft 1.

21 denotes a cross-pin near the outer end of lever 18, the outer ends of which pass through slots 22 in the side plates and are engaged by springs 23, the other ends of said springs being secured to the side plates—in the present instance to studs 24. The normal action of these springs is to hold the outer end of the connecting-lever downward (see dotted lines, Fig. 10) partially in the path of a coin as it is passed into the coin-receiver and to hold the inner end of said lever in a tilted or raised position, in which it is out of engagement with the notched disk.

25 denotes an elongated opening in the front wall 2 of the casing, and 26 a slot which intersects said opening. 27 denotes a guard for opening 25, which closely fits and fills said opening, as indicated in the drawings. This guard is carried by a lever D, which is pivoted to the face-plate, as at 28. One arm of this lever serves as a finger-piece, which we have indicated by 29, and the other comprises cam-faces 30 and 31, and in the normal position of the parts wholly fills slot 26 in wall 2 of the casing (see Fig. 3) and in the receiving position enters slot 32 in plate 6.

The operation is as follows: The guard is shown at its normal position in Figs. 1, 2, and 3. The operating-shaft and with it the coin-receiver may be oscillated freely in either direction by means of the handpiece, there being no connection with the controlling-shaft. The guard, however, cannot be raised until plate 6 and the coin-receiver are in the position shown in Figs. 1, 2, and 3, for the reason that when plate 6 is in any other position than

that shown in said figures cam-face 31 of lever D will engage the face of plate 6, as indicated in Fig. 5, so that the guard cannot be raised. As soon, however, as plate 6 is turned to the position shown in Figs. 1, 2, and 3 the guard may be readily raised, for the reason that slot 32 in plate 6 will now register with slot 26 in wall 2 and will receive the end of lever D, having the cam-faces, when the lever is raised to lift the guard, as clearly shown in Fig. 4. 33 denotes a stop upon the inner side of front wall 2, which is engaged by the coin-receiver to stop the backward movement of plate 6 and the coin-receiver at just the position at which slot 32 registers with slot 26, so that the end of lever D can enter slot 32. Comparing Figs. 1 and 3 with Fig. 4 it will be noticed that in Figs. 1 and 3 coin-slot 7 in plate 6 does not register with elongated opening 25, but that said coin-slot lies obliquely to the horizontal plane of said opening and partly below said opening. It is an important feature of our invention that the coin-slot in disk 6 must be moved from its normal position to the receiving position, the purpose of which will presently be explained. The mode in which disk 6, and with it, of course, the coin-receiver, is moved from the normal to the receiving position is through the engagement of cam-face 31 with the end wall 34 of slot 32. The effect of this engagement is clearly illustrated in Fig. 4. Cam-face 31 comes in contact with end wall 34 while the parts are in the position illustrated in Fig. 3, (see also Fig. 1,) and the continuation of the movement of lever D until it reaches the position illustrated in Fig. 4 oscillates disk 6, and with it, of course, the coin-receiver, from the position illustrated in Figs. 1 and 3 to the position illustrated in Figs. 4 and 6, in which it will be seen that coin-slot 7 in plate 6 lies parallel with opening 25 in wall 2 and approximately at the center thereof. The parts remain locked in this position by the engagement of the end of lever D with slot 32 in disk 6 until the guard is returned to the closed position—i. e., lying within opening 25 in front wall 2. While the parts are in this position, a coin may be passed through opening 25 and coin-slot 7 into the coin-receiver, as indicated in Figs. 6 and 10. The coin as it is passed into the coin-receiver acts to tilt the forward end of the connecting-lever and places the inner or rear end of said lever in engagement with notched disk 10, thereby connecting the controlling-shaft with the operating-shaft. It will be noted that this lifting of the connecting-lever is against the power of the springs which hold it at its normal position, these springs now acting to hold the edge of the coin pressed firmly against the barrel. As already stated, however, the controlling-shaft cannot yet be operated, although it is connected to the operating-shaft, for the reason that the parts are still locked in what we have termed the "receiving" posi-

tion by the engagement of the end of lever D with slot 32 in plate 6 on the operating-shaft. The operator now closes the guard down into opening 25 in front wall 2 of the casing. In order to do this, however, it is necessary to oscillate plate 6 backward from the position shown in Fig. 4 to that shown in Fig. 5 before the end of lever D can pass out from slot 32. This backward oscillation of disk 6 is accomplished through the engagement of cam-face 30 on lever D with end wall 35 of slot 32. It should be borne in mind, however, that the operating-shaft, plate 6, and the coin-receiver are not free to oscillate, for the reason that the parts are still connected through the engagement of the connecting-lever with the notched disk on the controlling-shaft, as clearly shown in Fig. 10, and that the controlling-shaft is held against the slightest backward movement through the engagement of the pawls with ratchet 8. It follows, therefore, that the backward oscillation of plate 6 while the connecting-lever is in engagement with the notched disk can only be accomplished by straining the parts. This necessary strain is distributed between slot 32 in disk 6 and the pawls 9, which engage the ratchet-wheel, there being necessarily some torsion of the connecting-lever, which we have indicated in exaggerated form in Fig. 9. This torsion or strain of the parts continues until the end of lever D has passed entirely out of slot 32. The instant this torsion or strain is relieved, however, by the passing of the end of the lever out of slot 32 the parts will all spring back to their normal—i. e., their unstrained—position, the effect of which is to carry plate 6 from the position to which it was carried by the action of cam-face 30 on wall 35 (such position being practically the position in which said plate appears in Fig. 3) to the position illustrated in Fig. 5, in which it will be noted that it is now impossible to lift the guard or to move lever D, for the reason that the end of said lever will bear against the face of plate 6, slot 32 having passed upward out of alinement with the end of said lever. It results, therefore, owing to this special construction, that, having placed the coin in the coin-receiver, the operator cannot move the coin-receiver until he has closed the guard, and, having closed the guard, he cannot open it again until an additional operation has taken place, this operation being the expelling from the coin-receiver of the coin which has been placed there and the consequent disconnection of the operating-shaft from the controlling-shaft. As the guard fits down closely into the opening in front wall 2, which is much larger than the coin-slot, it is rendered absolutely impossible to tamper with the coin in the coin-holder in any way, either by inserting an instrument from the outside or by attaching a thread or fine wire to the coin before it is placed in the coin-receiver.

The operation of expelling the coin from

the coin-receiver forms no portion of our present invention, but will be briefly described in order that the operation of our novel guard may be clearly understood. The operation of the controlling-shaft, the expelling of the coin from the coin-holder, and the consequent disconnection of the controlling-shaft from the operating-shaft are, moreover, described at length in our pending application for patent for automatic gas-vending apparatus, Serial No. 652,811.

While the coin is still in the coin-holder and the controlling-shaft and operating-shaft are connected, the operator, by means of the hand-piece, may turn the operating-shaft and with it the controlling-shaft from the position indicated in Figs. 2 and 6 to the position indicated in Fig. 10. As soon as the coin-receiver, with the coin therein, has reached the position shown approximately in Fig. 10—that is, the position in which the space *c* in the coin-receiver registers with the slot in the barrel—the springs will act to throw the connecting-lever from the position shown in full lines in Fig. 10 to the position shown in dotted lines in said figure and will instantly expel the coin from the coin-receiver and project it through the slot in the barrel and into the coin-holder. The instant the coin begins to move downward toward the coin-holder the connecting-lever will be disengaged from the notched disk 10 on the controlling-shaft and the latter will thereby become disconnected from the operating-shaft, so that further movement of the operating-shaft in either direction will have no effect whatever on the controlling-shaft and the mechanism operated thereby. The only way in which the controlling-shaft can be again actuated is by returning the coin-receiver to the receiving position, raising the guard, inserting another coin in the coin-receiver, then closing the guard, and then operating the controlling-shaft by means of the operating-shaft while said shafts are held in connection by the connecting-lever and the coin in the coin-holder.

Having thus described our invention, we claim—

1. The combination with a controlling-shaft, means for holding said shaft against backward movement, an operating-shaft, a coin-receiver and a plate having a slot carried by the operating-shaft, and coin-operated means for connecting the controlling-shaft with the operating-shaft, of a casing having an opening with which the coin-receiver is adapted to register, and a lever carrying a guard adapted to fit said opening and having cam-faces 30 and 31 adapted to enter said slot, so that when the guard is raised cam-face 31 will engage one end of said slot and move the coin-receiver to the receiving position and after the shafts have been connected by the insertion of a coin in order to close the guard the parts must be strained by the engagement of cam-face 30 with the other end of said slot

until said cam-face passes out of the slot when
the parts will spring forward again throwing
the slot out of alinement with the lever and
rendering it impossible to open the guard
5 again until the shafts have been disconnected.

2. The lever D carrying guard 27 and having
cam-faces 30 and 31, substantially as
shown, for the purpose set forth.

In testimony whereof we affix our signatures
in presence of two witnesses.

CHARLES P. MAYER.
JOHN H. POMEROY.

Witnesses:

EMERSON R. SMITH,
THOMAS H. SAVARD.