

No. 653,295.

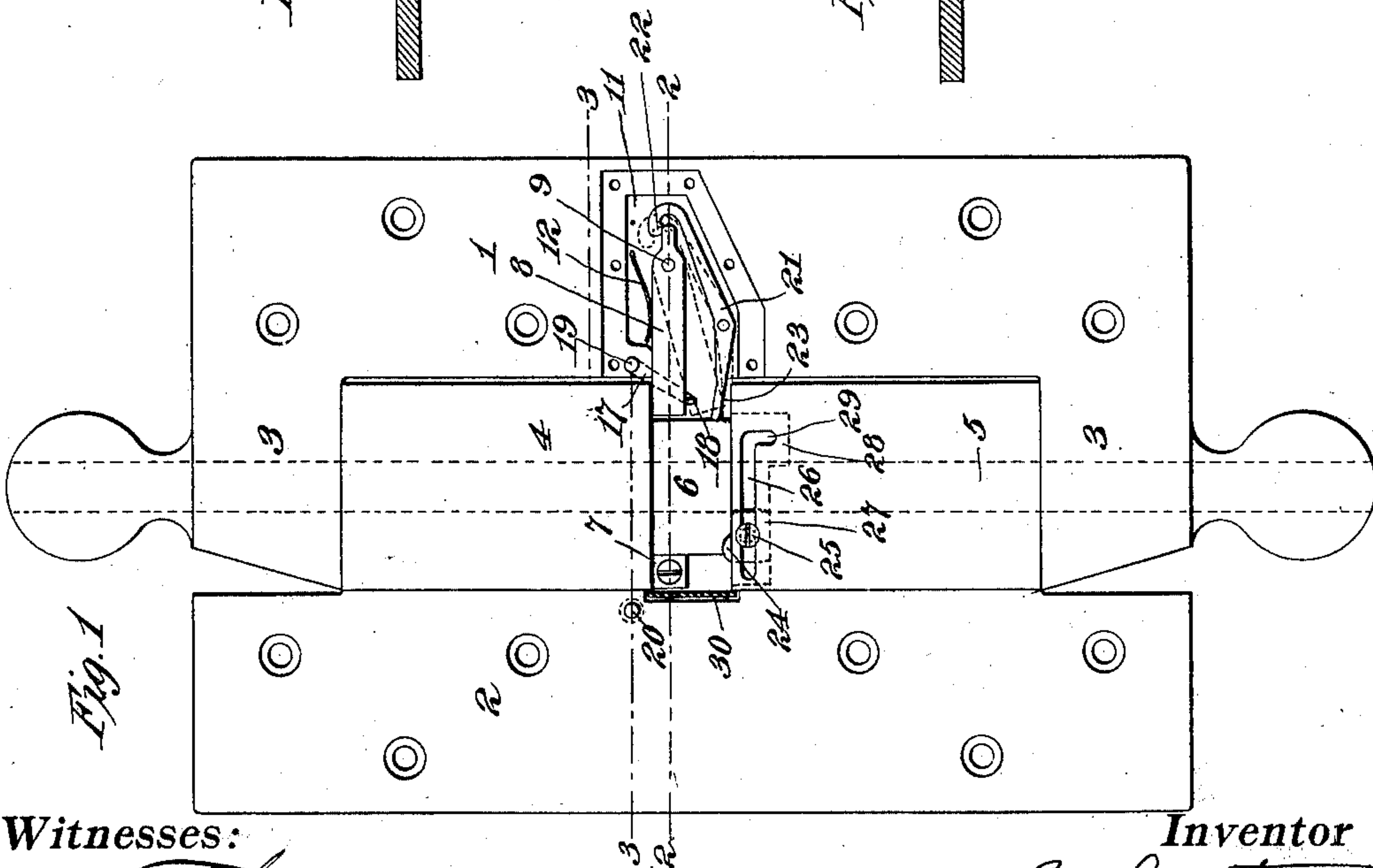
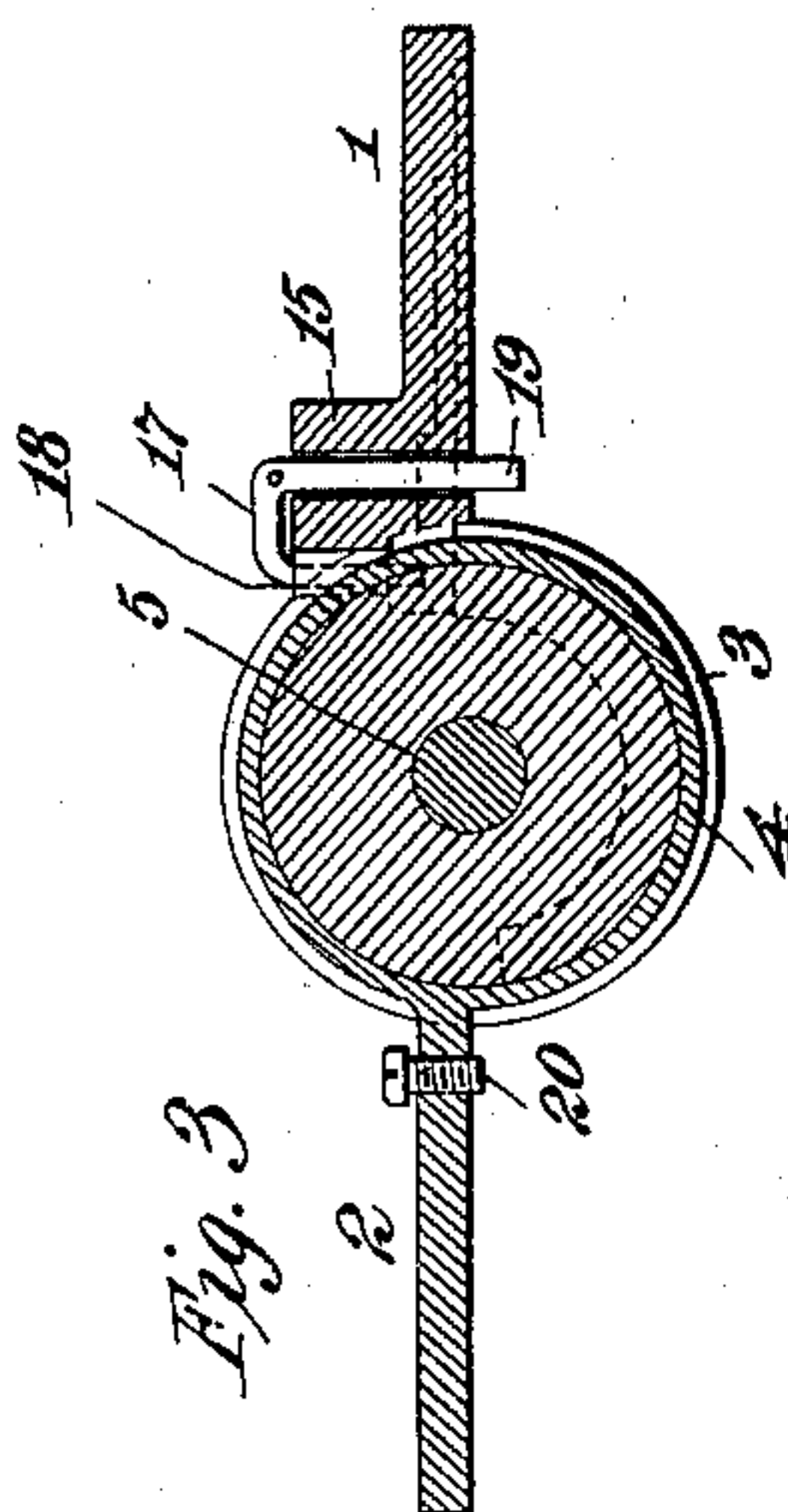
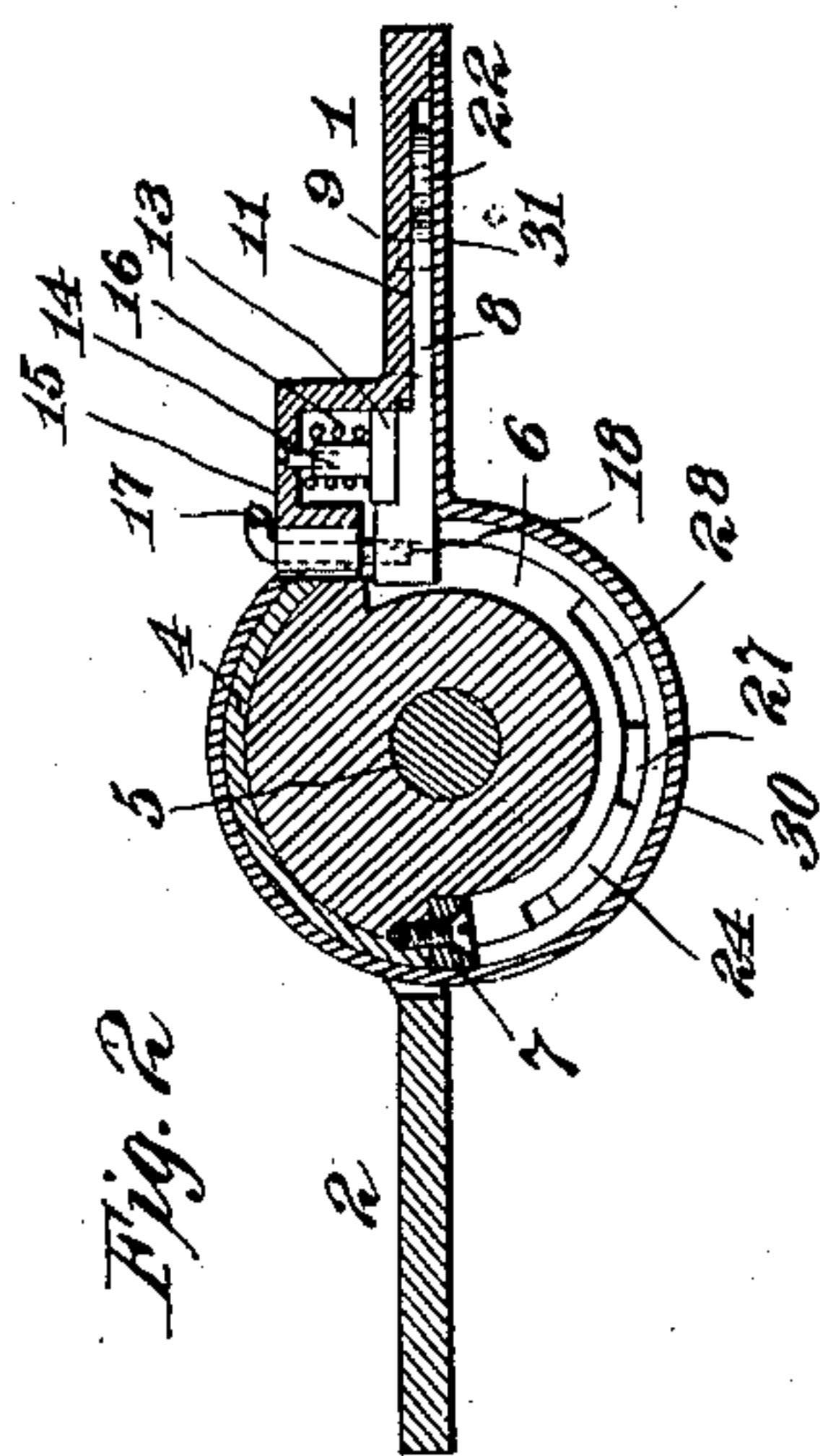
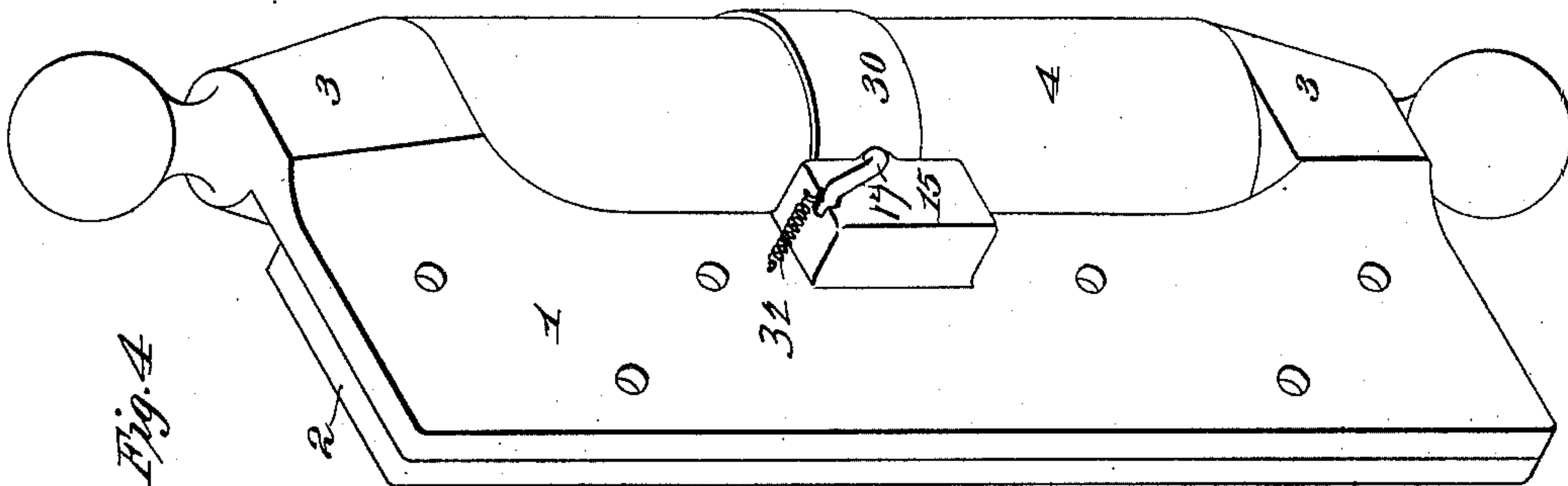
Patented July 10, 1900.

C. F. HANINGTON.

DOOR CHECK.

(Application filed Oct. 25, 1899.)

(No Model.)



Witnesses:

James F. Coleman
John R. Taylor

Inventor

Charles F. Hanington
by *Lyman Edmunds & Son*

Att'ys.

UNITED STATES PATENT OFFICE.

CHARLES F. HANINGTON, OF NEW YORK, N. Y., ASSIGNOR TO THE MECHANICAL DOOR HINGE CHECK COMPANY, OF SAME PLACE.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 653,295, dated July 10, 1900.

Application filed October 25, 1899. Serial No. 734,697. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. HANINGTON, a citizen of the United States, residing in the borough of Manhattan, in the city, county, and State of New York, have invented a certain new and useful Improvement in Door-Checks, of which the following is a description.

My invention relates to various new and useful improvements in door-checks of the type described by me in my Patent No. 601,830, dated April 5, 1898, wherein one of the hinge-leaves carries a pivoted bolt normally maintained in a plane adapted to engage a stationary abutment on the other leaf, a spring being employed to absorb the shock due to the engagement of these parts when the door has almost reached a closed position, mechanism being employed, actuated either at the moment of engagement between the parts or during the checking operation, to allow the said pivoted bolt to be moved out of its normal plane upon the rebound, whereby the door will be permitted to close, and mechanism being also employed which is brought into play upon the opening of the door to reset the said bolt in position to again perform a checking operation.

The object of my present invention is to produce a device of this general type which shall be very much simpler to construct and capable of better and more perfect operation than the prior devices.

In order that the invention may be better understood, attention is directed to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation showing the hinge-leaves in their open position, the operative parts being disclosed for the purpose of clearness; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1, and Fig. 4 a perspective view of the hinge in its closed position.

In all of the above views corresponding parts are represented by the same numerals of reference.

1 and 2 represent the two leaves, one being stationary and the other connected to the door. The leaf 1, which is ordinarily the stationary leaf, carries the two knuckles 3 3, and the other leaf carries the barrel 4, which turns

on a pintle 5, fast to the knuckles 3, as is common. The barrel 4 is provided with a groove 6, extending partly around the same, and mounted in said groove is a checking block or abutment 7, preferably made of hardened steel and removably secured in place by means of a screw, as shown. If desired, however, it will be understood that this block may be cast integrally with the barrel. The said block is mounted so as to leave a space beneath it in which the pivoted bolt may move in the closing operation. This bolt 8 is pivotally mounted on a stud 9 to the leaf 1, in a recess 11 therein, and is adapted to be forced downward by a spring 12 when the said bolt is released. Normally the inner end of the bolt travels in a plane coincident with the abutment 7, so that the bolt will engage with said abutment when the door has reached an almost-closed position to provide for a checking action. In order that this checking action may be elastic in character, the bolt 8 bears upon a plate 13, having a shank 14, which is carried within an offset 15, cast with the leaf 1, a heavy spiral spring 16 surrounding said shank, so as to permit of a slight inward movement of the plate 13 when the bolt 8 engages the abutment 7. In order to normally lock the bolt 8 in an elevated position and in the plane of the abutment 7, I provide a U-shaped latch 17, having two arms, as shown, working in suitable bearing-openings in the offset 15. One of these arms 18 engages beneath the bolt 8, as shown in Figs. 1 and 3, while the other arm 19 passes through the leaf 1 and is adapted to be engaged by a screw 20, carried by the other leaf, at the instant that the bolt 8 engages the abutment 7, or during the time that said bolt is in engagement with said abutment and the yielding of the spring 16 has permitted the leaf 2 to advance to a slightly-further extent toward the leaf 1. By adjusting the position of the screw 20 the moment of engagement between said screw and the arm 19 of the latch can be regulated within very close limits. In order to provide for the resetting of the bolt 8, I employ a resetting-lever 21, which is pivoted to the leaf 1 and which engages over the rear end of the bolt 8, as at 22, beyond the pivot 9 thereof. The forward end 23 of the resetting-lever 21 trav-

els within the groove 6, immediately above the bottom of said groove, and is adapted to engage with a resetting-cam 24, the position of which is adjustable by a screw 25 in a slot 26. By changing the position of the cam 24 the resetting of the bolt 8 can be made to take place at any part of the opening movement of the door. The resetting-cam 24 will, it is understood, be located in a recess 27, (shown in dotted lines, Fig. 1,) formed in the barrel below the lower face of the groove 6. Said recess is provided with a deep portion 28, which coincides with a downturned extension 29 of the slot 26. By loosening the screw 25 and shifting the resetting-cam 24 toward the portion 28 of the groove 27 the said resetting-cam can be depressed below the surface of the bottom of the groove 6 and held in that position by tightening the screw 25, whereby the resetting operation will not take place and the checking mechanism will be thrown out of operation, as will be explained. The groove 6 is normally covered by a shield or band 30, which is carried by the stationary leaf 1, while the bolt 8 and the resetting-lever 21 are concealed by a thin plate 31, which is secured over the recess 11.

Assuming the parts to be in the position shown in Fig. 1 with the door open, the operation will be as follows: The door being closed by the usual closing-spring will cause the leaf 2 to approach the leaf 1 until the abutment 7 engages the inner end of the bolt 8. This engagement effects a checking operation on the door and brings the door to a complete rest, the spring 16 allowing for the necessary elasticity and preventing any damage to the parts. In this movement the screw 20 will engage the arm 19 of the release-lever 17, and said lever will be withdrawn from beneath the bolt 8 against the tension of the small spiral spring 32, which is secured to said releasing-lever. Although the bolt 8 will now be released, the engagement between the bolt and the abutment 7 will prevent the spring 12 from moving the bolt downward until the rebound has taken place and those parts have separated. Upon the rebound the spring 12 will depress the bolt 8 to the position shown in dotted lines, Fig. 1, so that the inner end of the bolt will clear the abutment 7, whereupon the door will be permitted to close. Upon the opening of the door the inner end 23 of the resetting-lever 21 will engage the cam 24, depressing the outer end of the resetting-lever and elevating the bolt 8 to its normal position, whereupon said bolt will be again engaged by the locking-lever 17 and held in that position ready for another checking operation to be effected.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other

of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, substantially as set forth.

2. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever projecting through the leaf which carries the bolt, and a screw carried by the other leaf for engaging with said locking-lever, substantially as set forth.

3. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, and an elastic device with which said pivoted bolt engages during the checking operation, substantially as set forth.

4. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, and means for resetting said bolt upon the opening movement of the hinge members, substantially as set forth.

5. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever being carried by and projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, and a resetting-cam carried with or by the other leaf

for engagement with said resetting - lever during the opening movement of the hinge-leaves, substantially as set forth.

6. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a pivoted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, a resetting-cam carried with or by the other leaf for engagement with said resetting-lever during the opening movement of the hinge-leaves, and means for adjusting the position of said cam, substantially as set forth.

7. In a mechanical door-check, the combination of the two hinge-leaves, an abutment carried by or with one of said leaves, a piv-

oted checking-bolt carried by or with the other of said leaves and normally arranged in the same plane as said abutment, whereby the said bolt and abutment will engage together to perform a checking operation, a locking-lever for locking said bolt in its normal position, said lever projecting through the leaf which carries the bolt and adapted to be engaged by a part of the other leaf, a resetting-lever carried by the leaf to which said bolt is pivoted, a resetting-cam carried with or by the other leaf for engagement with said resetting-lever during the opening movement of the hinge-leaves, means for adjusting the position of said cam, and means for moving said cam out of the path of the resetting-lever, substantially as set forth.

This specification signed and witnessed this 24th day of October, 1899.

CHARLES F. HANINGTON.

Witnesses:

ARCHIBALD G. REESE,
JNO. R. TAYLOR.