

No. 764,553.

PATENTED JULY 12, 1904.

J. C. BROOKS.
LOOM.

APPLICATION FILED JUNE 6, 1904.

NO MODEL.

Fig. 1.

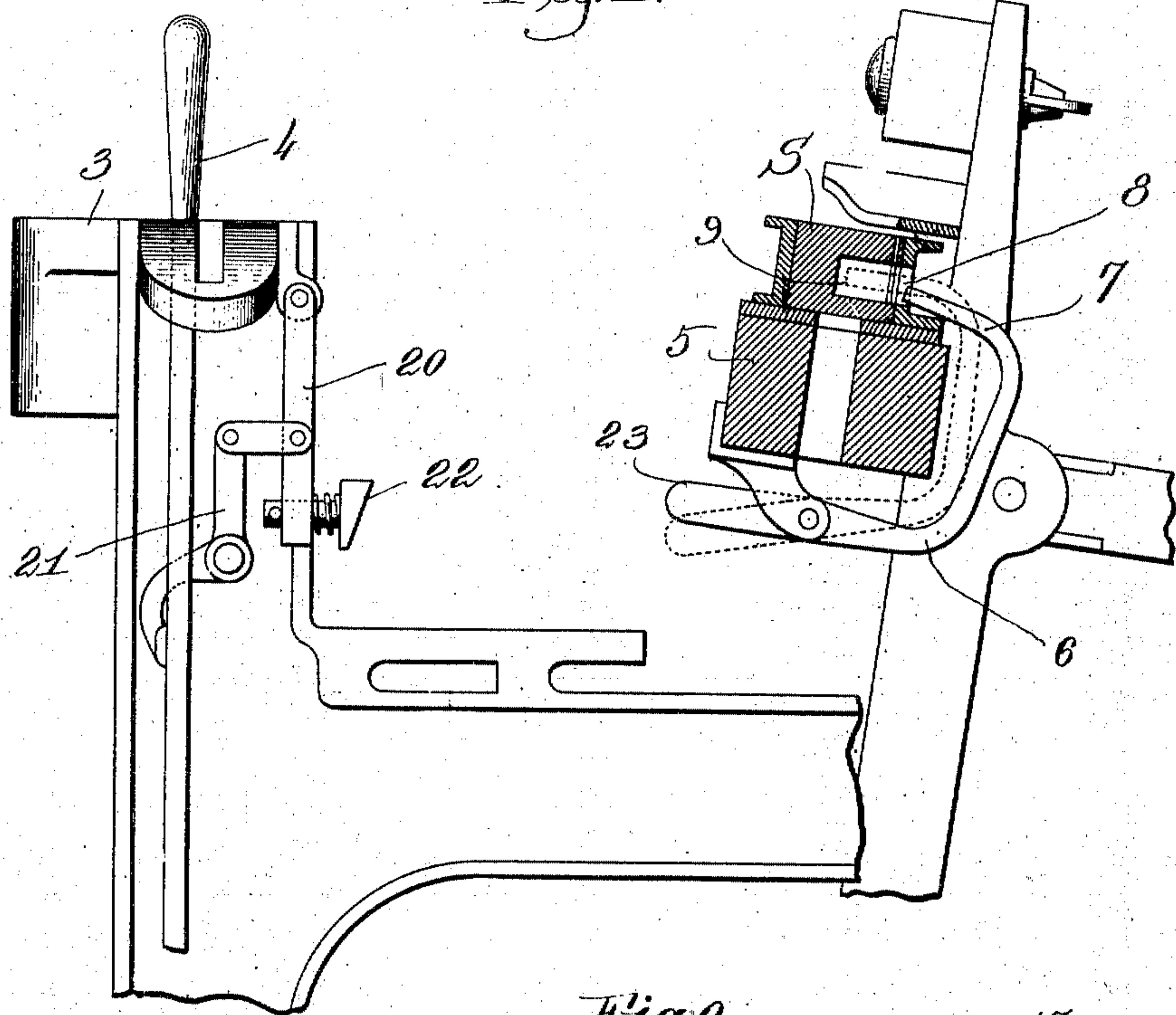


Fig. 2.

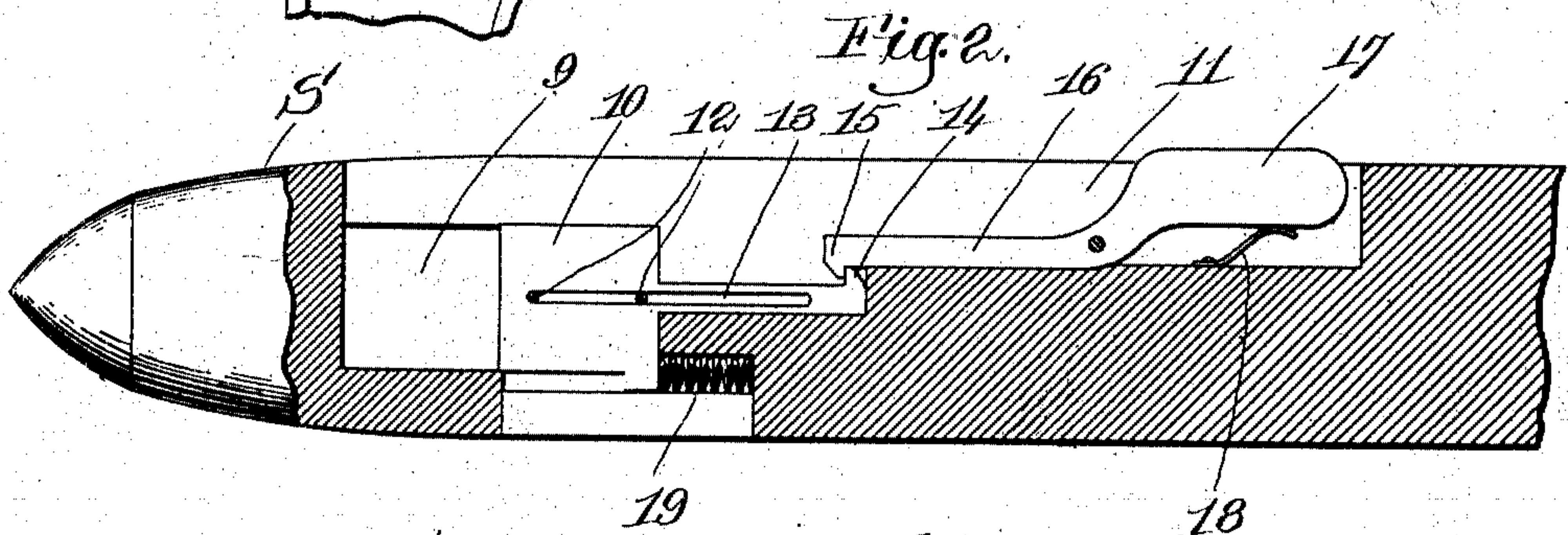
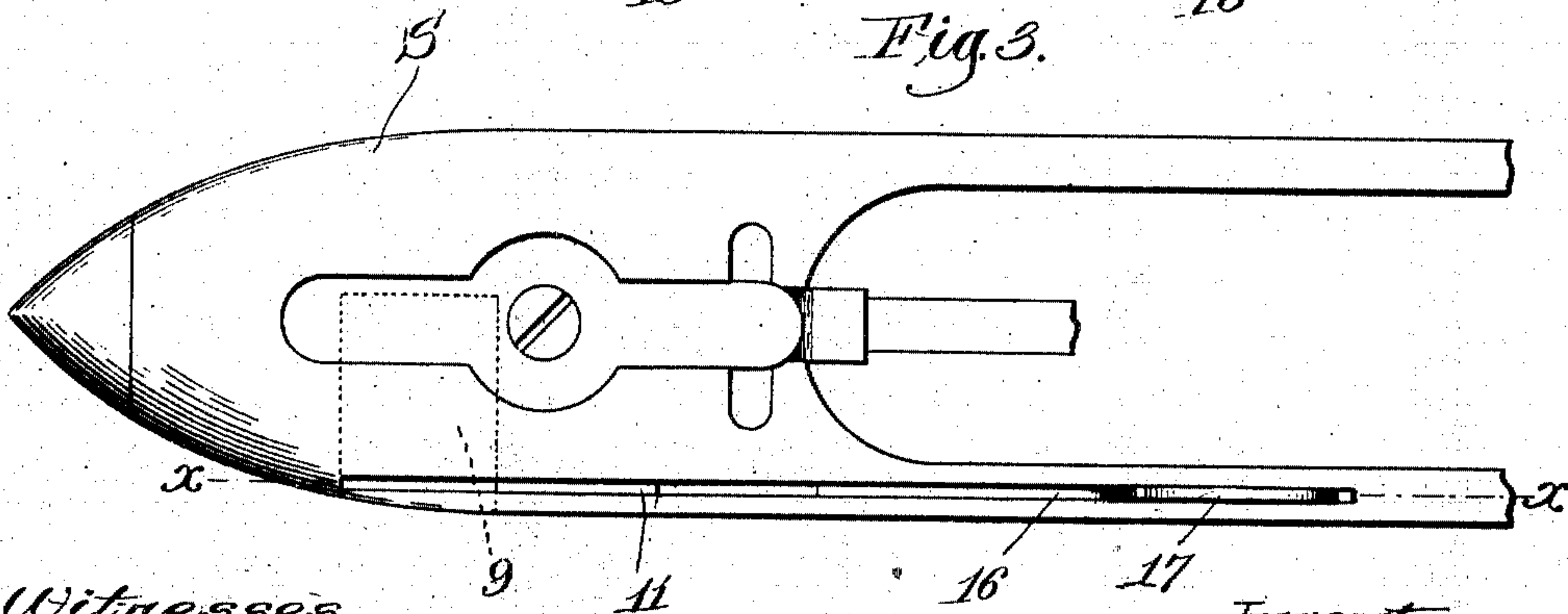


Fig. 3.



Witnesses.
Thomas Drummond.
Warren & Uwen.

Inventor
John C. Brooks,
by Lewis Gregory, atty.

UNITED STATES PATENT OFFICE.

JOHN C. BROOKS, OF PATERSON, NEW JERSEY, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

LOOM.

SPECIFICATION forming part of Letters Patent No. 764,553, dated July 12, 1904.

Application filed June 6, 1904. Serial No. 211,245. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BROOKS, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to looms, and especially to means for detecting the occurrence of a float in the warp and for immediately stopping the loom upon the occurrence of such a float, thus avoiding the necessity of "pick-outs," as they are termed.

In my present invention the stopping of the loom is accomplished by means of a feeler which coöperates with a feeler-controller carried by the shuttle to knock off the shipper-lever whenever a float occurs.

In the best form of my invention now known to me the feeler is pivoted to the lay, and the shuttle is provided with a recess or opening into and out of which one end of the feeler plays, said feeler being given its movement relative to the shuttle by or through the movement of the lay. Carried by the shuttle is a feeler-controller which is normally held in its inoperative position out of the path of the feeler by means of a float-detecting lever. Suitable automatically-operative means, such as springs, are employed to throw the feeler-controller into its operative position, which is in the path of the feeler, whenever the float-detecting lever releases said feeler-controller by or through the occurrence of a float. As soon as the feeler-controller is thus thrown into its operative position across the opening in the shuttle said feeler-controller coöperates with the feeler upon the forward beat of the lay to knock off the shipper, and thus stop the loom.

In the drawings, Figure 1 is a side view of a portion of the loom having my improvements applied thereto, the lay and shuttle being shown in section to better illustrate my invention. Fig. 2 is a section of a shuttle having my improvements applied thereto on

substantially the line *x x*, Fig. 3. Fig. 3 is a top plan view of Fig. 2.

The breast-beam of the loom 3, the shipper-lever 4, and the lay 5 are or may be of any suitable or usual construction. Pivoted to the lay is a feeler 6, which is properly shaped so that one end 7 thereof can move into and out of an opening 8 in the shuttle-box. The shuttle is designated by S and may be of any suitable or usual type, said shuttle having at one end an opening or recess 9, which comes in alinement with the opening 8 in the shuttle-box when said shuttle is properly boxed.

Mounted in a suitable recess in the side of the shuttle and arranged to be moved back and forth across the mouth of the recess 9 is a feeler-controller 10, which coöperates with the feeler upon the occurrence of a float to stop the loom. As herein illustrated, said feeler-controller comprises a sliding member mounted in a suitable recess 11 in the wall of the shuttle, said feeler-controller being guided in any suitable way, as by means of the pins 12, carried by the shuttle, which extend through the slot 13 in said feeler-controller. Said feeler-controller is provided with a shoulder 14, adapted to be engaged by the nose 15 of a float-detecting lever 16, said lever being pivoted in the recess 11 of the shuttle and having one end 17 thereof projecting above the shuttle-wall, as best seen in Fig. 2. The float-detecting lever is held in operative position, or that shown in Fig. 2, in any suitable way, as by a spring 18.

Suitable automatically-operative means, such as a spring 19, is employed to throw the feeler-controller into its operative position whenever it is released by the float-detecting lever.

The parts are normally in the position shown in Fig. 2—that is, the feeler-controller is withdrawn from across the recess 9 and is held in its retracted or inoperative position by the float-detecting lever 16.

Whenever a float occurs in the warp and the shuttle makes an overshoot, the warp-threads will by their engagement with the end 17 of the float-detecting lever depress said

end, and thus release the feeler-controller. Thereupon the spring 19 comes into play to throw said feeler-controller forward and over the opening 9 in the shuttle. When the feeler-controller is in this position, which is its operative position, it coöperates with the feeler to stop the loom, as will be presently described.

Pivoted to the loom-frame is a hanger 20, which is suitably connected to one arm of the knock-off lever 21. Said hanger 20 also carries a suitable buffer 22, which stands in the path of movement of the bunting end 23 of the feeler.

When the loom is running normally, the feeler-controller 10 is withdrawn from the opening 9 in the shuttle, as shown in Fig. 2, and as the shuttle is boxed it stops with said opening in alinement with the opening 8 in the shuttle-box. As the lay beats up and the feeler strikes the buffer 22 it is thrown from the full-line into the dotted-line position, the end 7 thereof being moved into the recess 9 in the shuttle. When, however, a float occurs, the feeler-controller is released, as above described, and is moved across the recess 9 by the action of the spring 19. When the lay makes the next forward movement and the feeler strikes the buffer 22, said feeler is prevented by its contact with the feeler-controller from swinging into the dotted-line position, and therefore becomes a rigid bunter, and as it strikes the buffer it forces the lever 20 back, and thereby knocks the shipper off, thus stopping the loom.

The buffer 22 is preferably yieldingly mounted, and its operative face is inclined, as shown, so that when the feeler is held by the feeler-controller in its operative position it will strike the thicker portion of the buffer.

While my improvements can be applied to any type of loom and can be used in connection with any type of shuttle, I have herein illustrated an ordinary spindle-shuttle. With suitable modifications, however, the invention can be applied to shuttles commonly used on looms in which the filling is automatically replenished when exhausted.

The particular form of knock-off device for the shipper-lever is not essential to my invention, and the arm 20 may be connected to any of the knock-off devices commonly employed in looms without in any way departing from my invention. It will be obvious, therefore, that many changes in the construction and arrangement of parts may be made without avoiding the invention.

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

1. In a loom, a shuttle, loom-stopping mech-

anism including a feeler, and means carried by the shuttle and coöperating with said feeler to stop the loom upon the occurrence of a float in the warp.

2. In a loom, a shuttle, loom-stopping mechanism including a feeler, a feeler-controller carried by the shuttle and coöperating with said feeler to stop the loom upon the occurrence of a float in the warp.

3. In a loom, a shuttle having a recess, loom-stopping mechanism comprising a feeler, means to move said feeler into and out of the recess in the shuttle by or through the movement of the lay, and means coöperating with the feeler to stop the loom upon the occurrence of a float in the warp.

4. In a loom, a shuttle having a recess, a feeler, means to move said feeler into said recess upon the forward movement of the lay, a feeler-controller, means to move the latter into its operative position across said recess and into the path of the feeler whenever a float occurs in the warp, and means coöperating with said feeler to stop the loom when the feeler-controller is in its operative position.

5. In a loom, a shuttle having a recess, a feeler pivoted to the lay, a buffer to engage the feeler as the lay beats up and cause the latter to enter the recess in the shuttle and a normally inoperative feeler-controller rendered operative by the occurrence of a float in the warp, said feeler-controller when operative coöperating with the feeler to stop the loom.

6. In a loom, a shuttle having a recess, loom-stopping mechanism comprising a feeler pivoted to the lay, means to rock said feeler by or through the movement of the lay, a normally inoperative feeler-controller carried by the shuttle, and means to render said controller operative upon the occurrence of a float in the warp, said controller when operative coöperating with the feeler to stop the loom.

7. In a loom, a shuttle provided with a recess, a feeler pivoted to the lay, a feeler-controller, a float-detecting lever to hold said feeler normally inoperative, automatically-operative means to throw the feeler-controller into operative position when the latter is released, and means coöperating with said feeler to stop the loom when the feeler-controller is in its operative position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. BROOKS.

Witnesses:

JOHN C. EDWARDS,
MARGARET A. DUNN.