

No. 681,621.

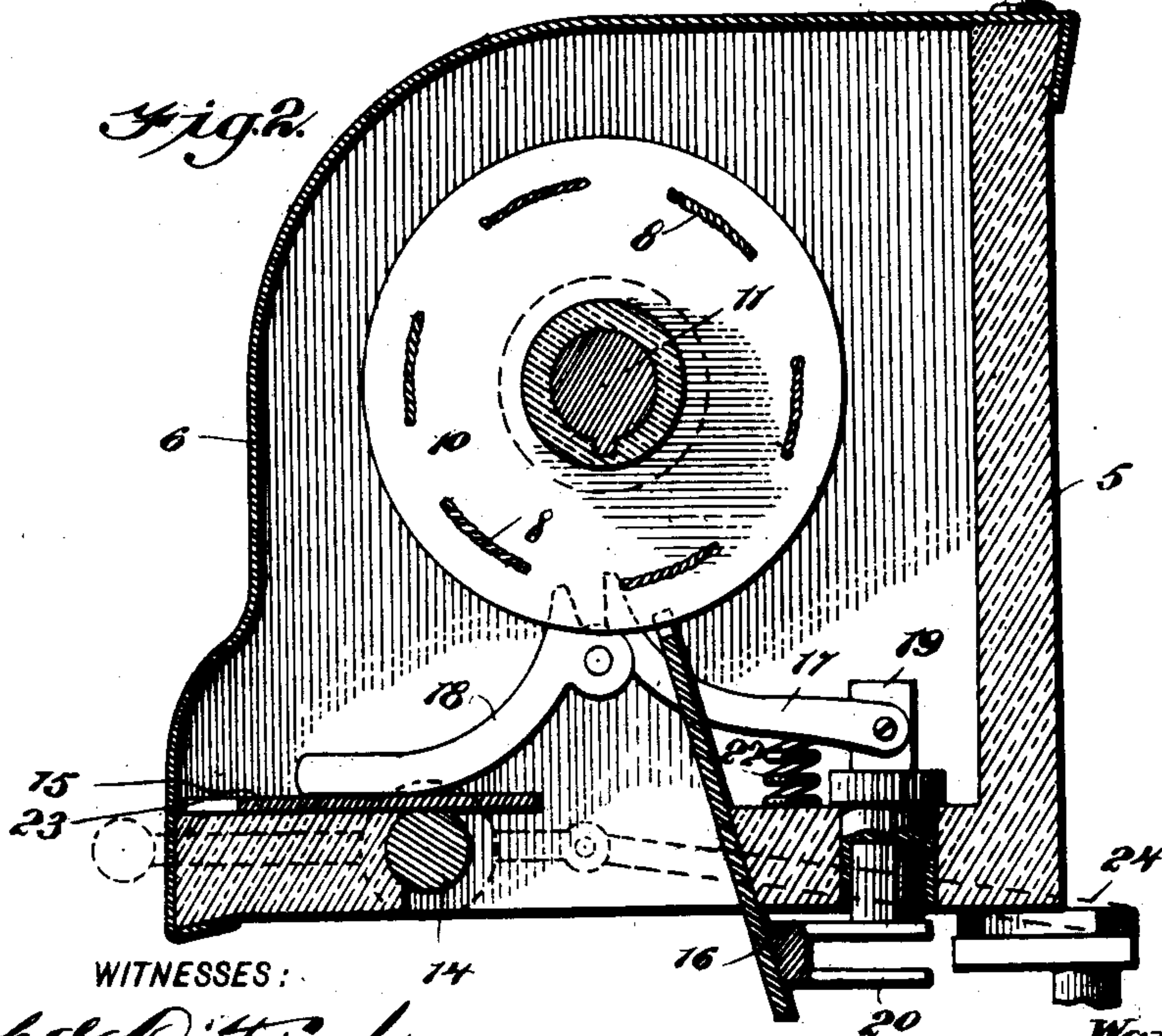
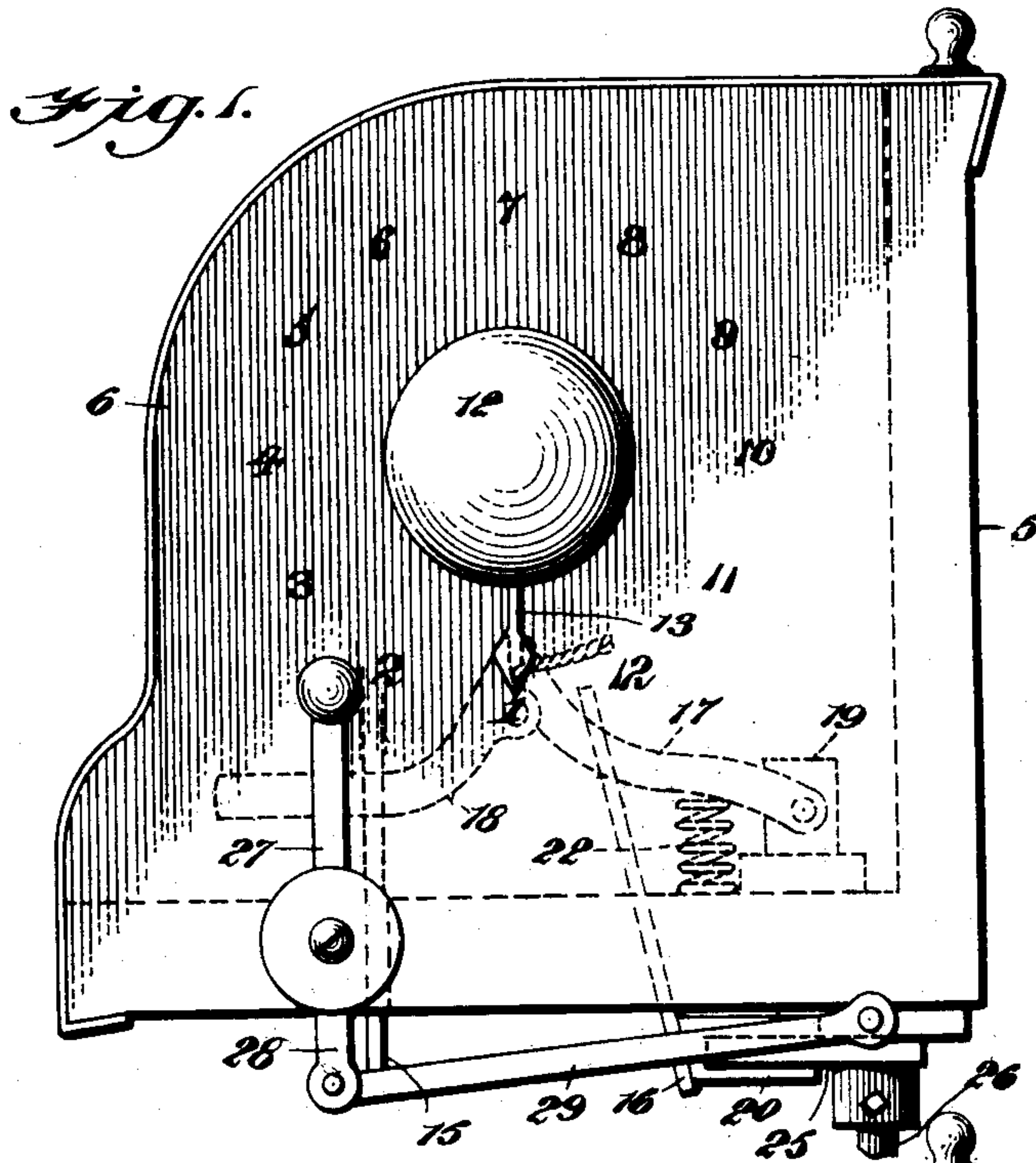
Patented Aug. 27, 1901.

W. R. COOK.  
FUSE HOLDER.

(Application filed Dec. 21, 1900.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

*H. E. Dieterich*  
*C. R. Ferguson*

INVENTOR

*Warren R. Cook*

BY

*Mumford*  
ATTORNEYS

No. 681,621.

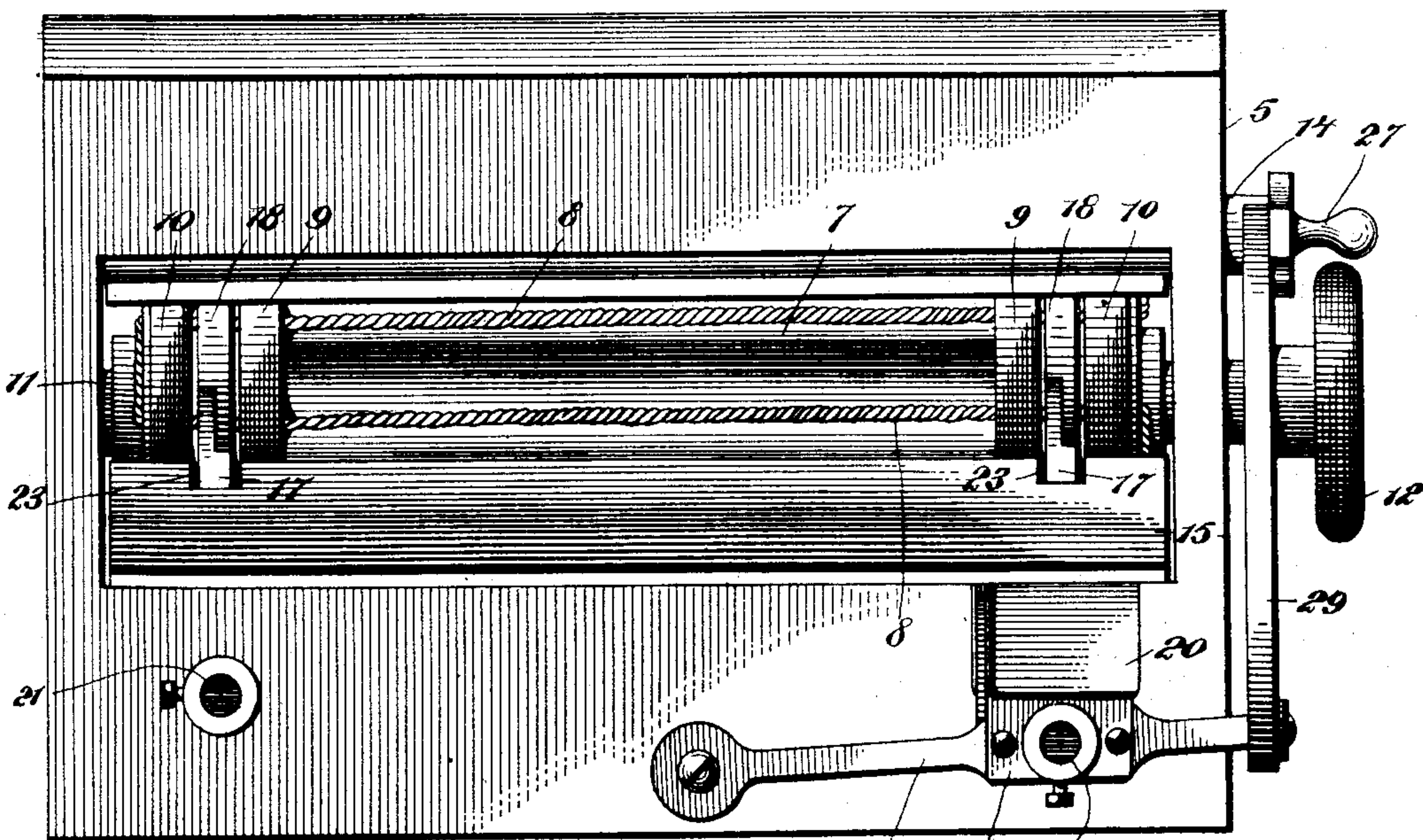
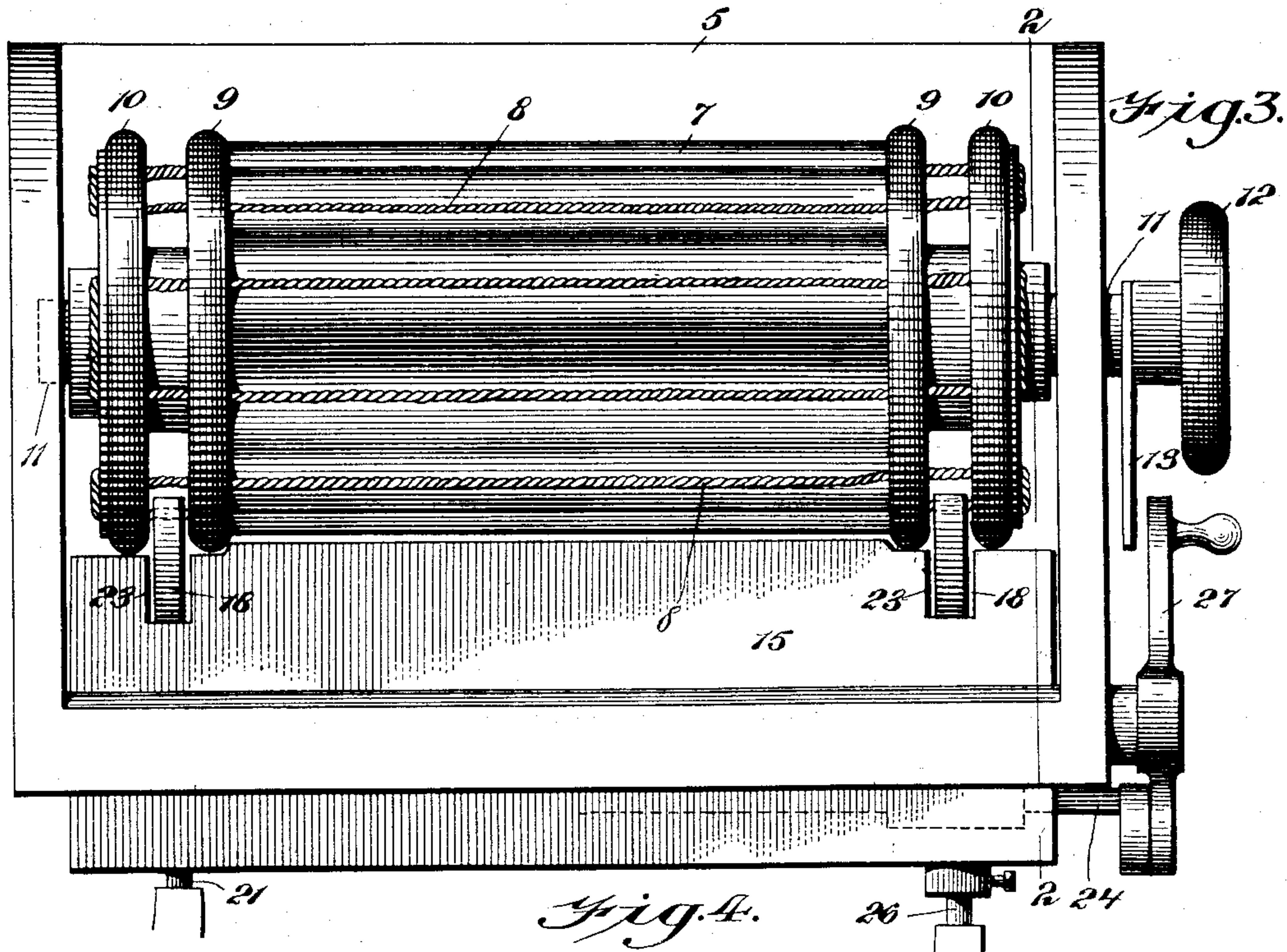
Patented Aug. 27, 1901.

W. R. COOK.  
FUSE HOLDER.

(Application filed Dec. 21, 1900.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES:

H. G. Dieterich  
C. R. Ferguson

24 25 26 INVENTOR  
Warren R. Cook  
BY *Mumford*  
ATTORNEYS



No. 681,621.

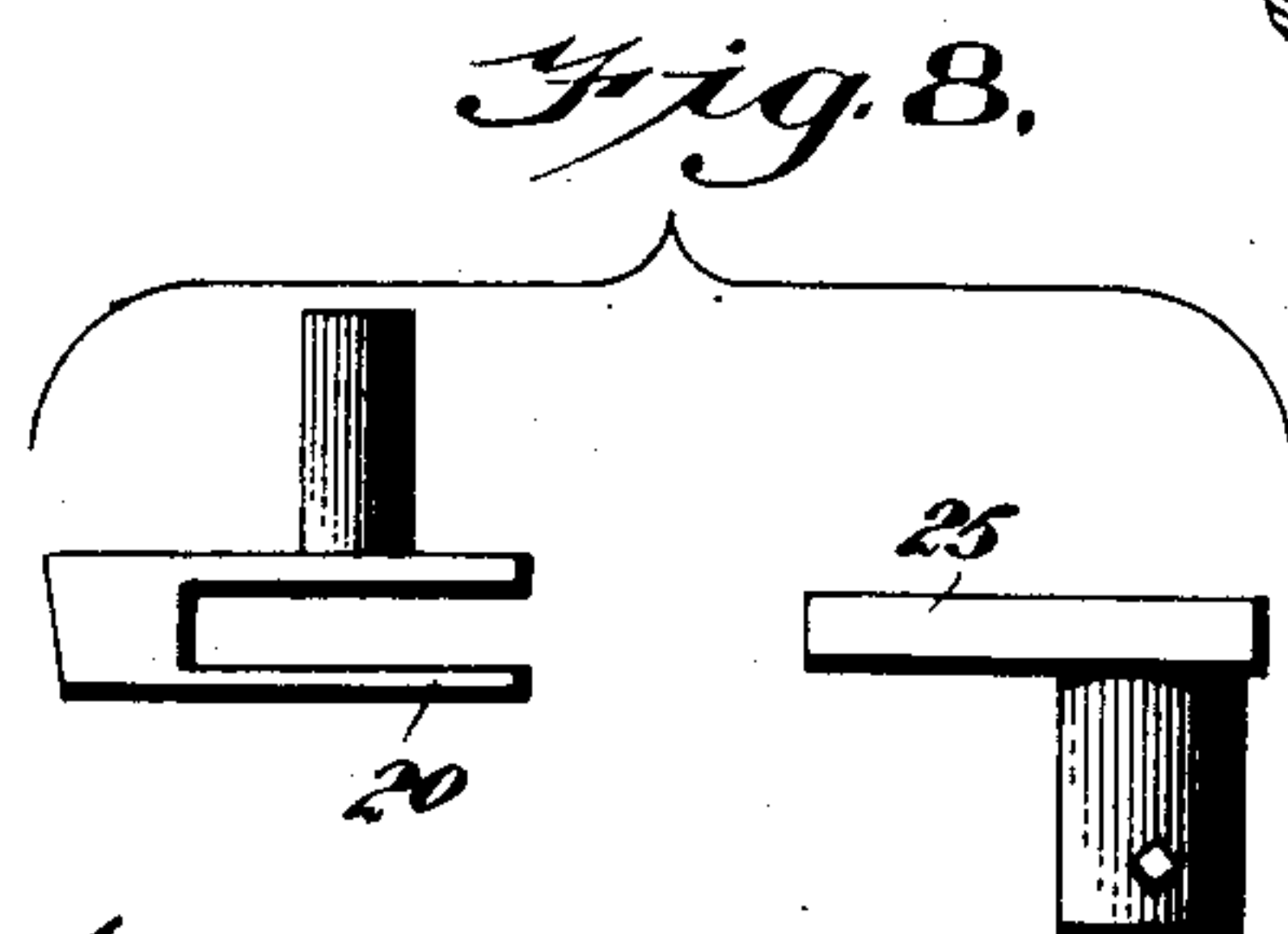
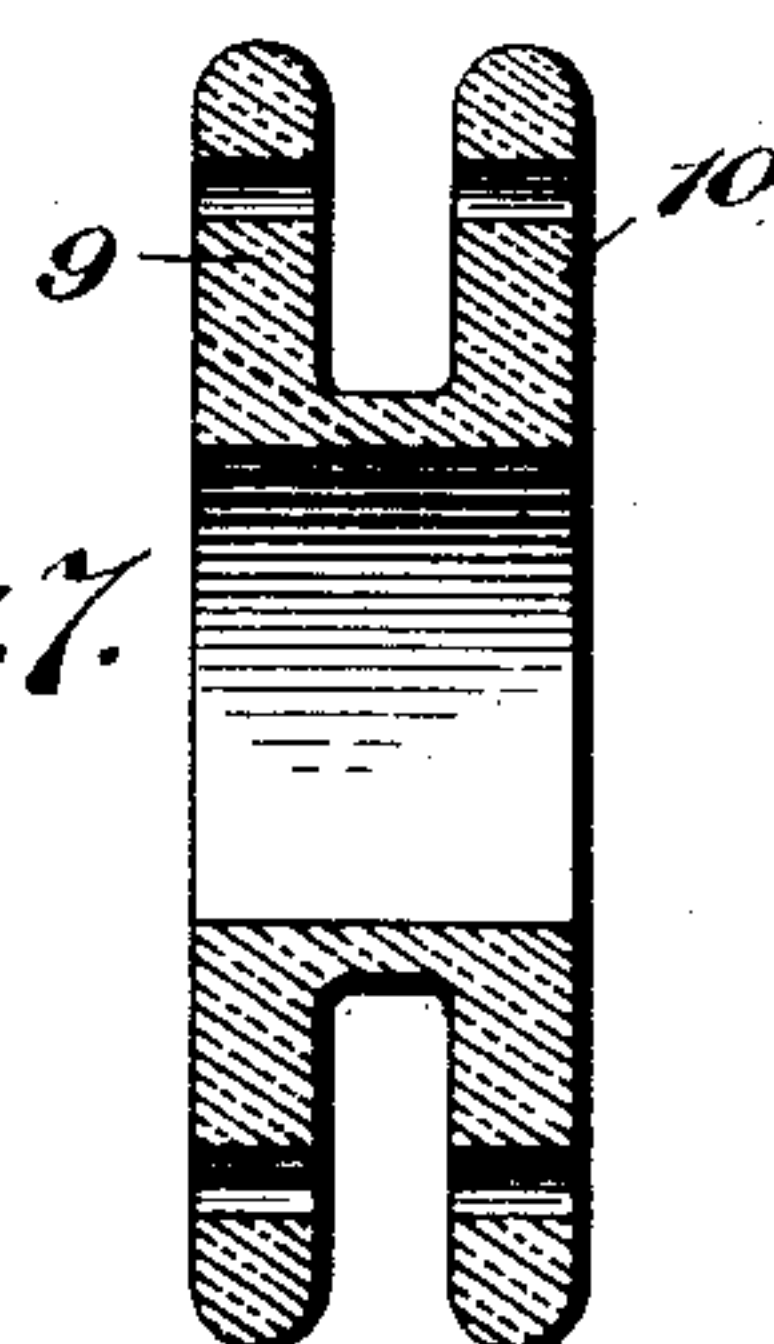
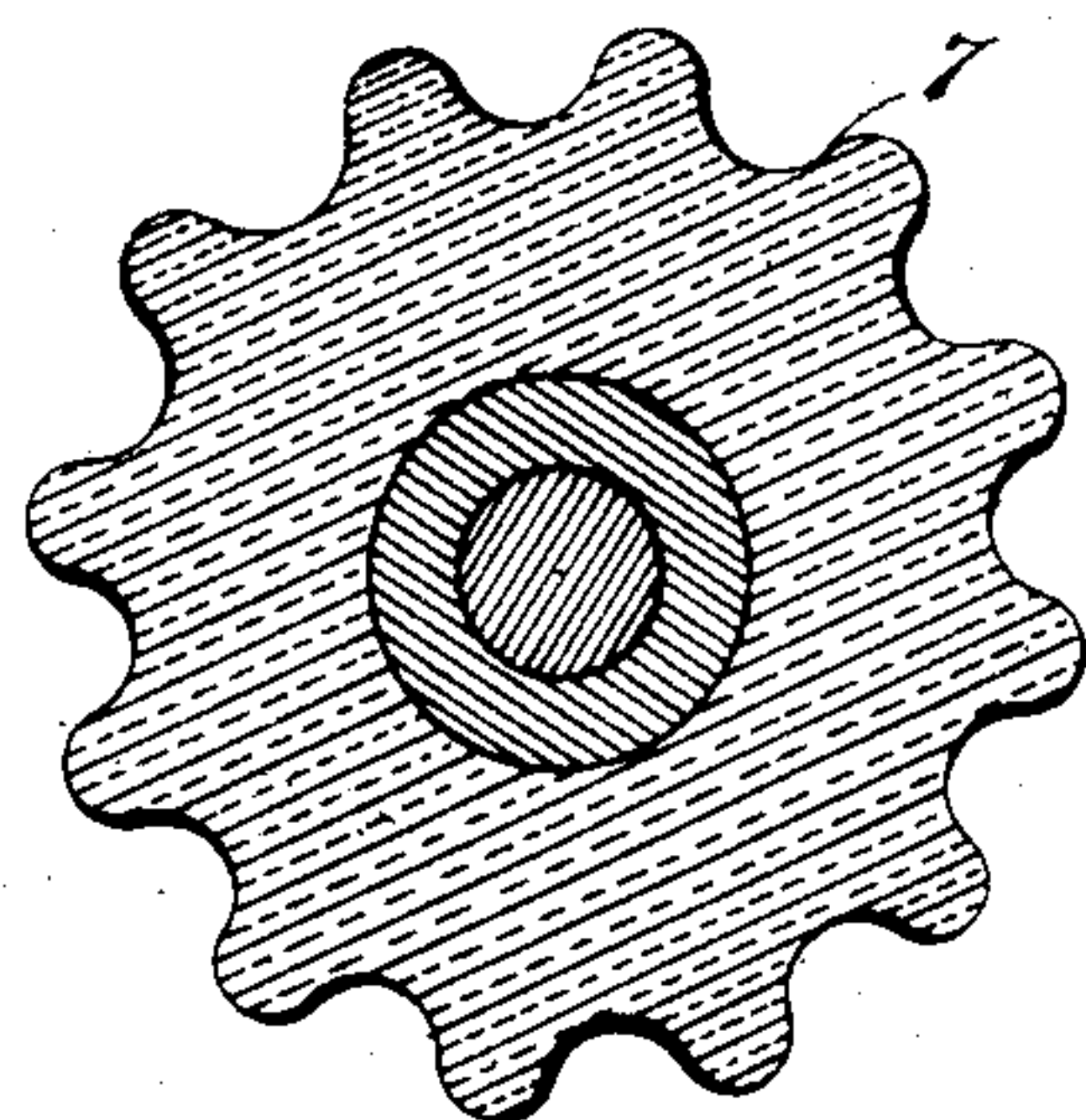
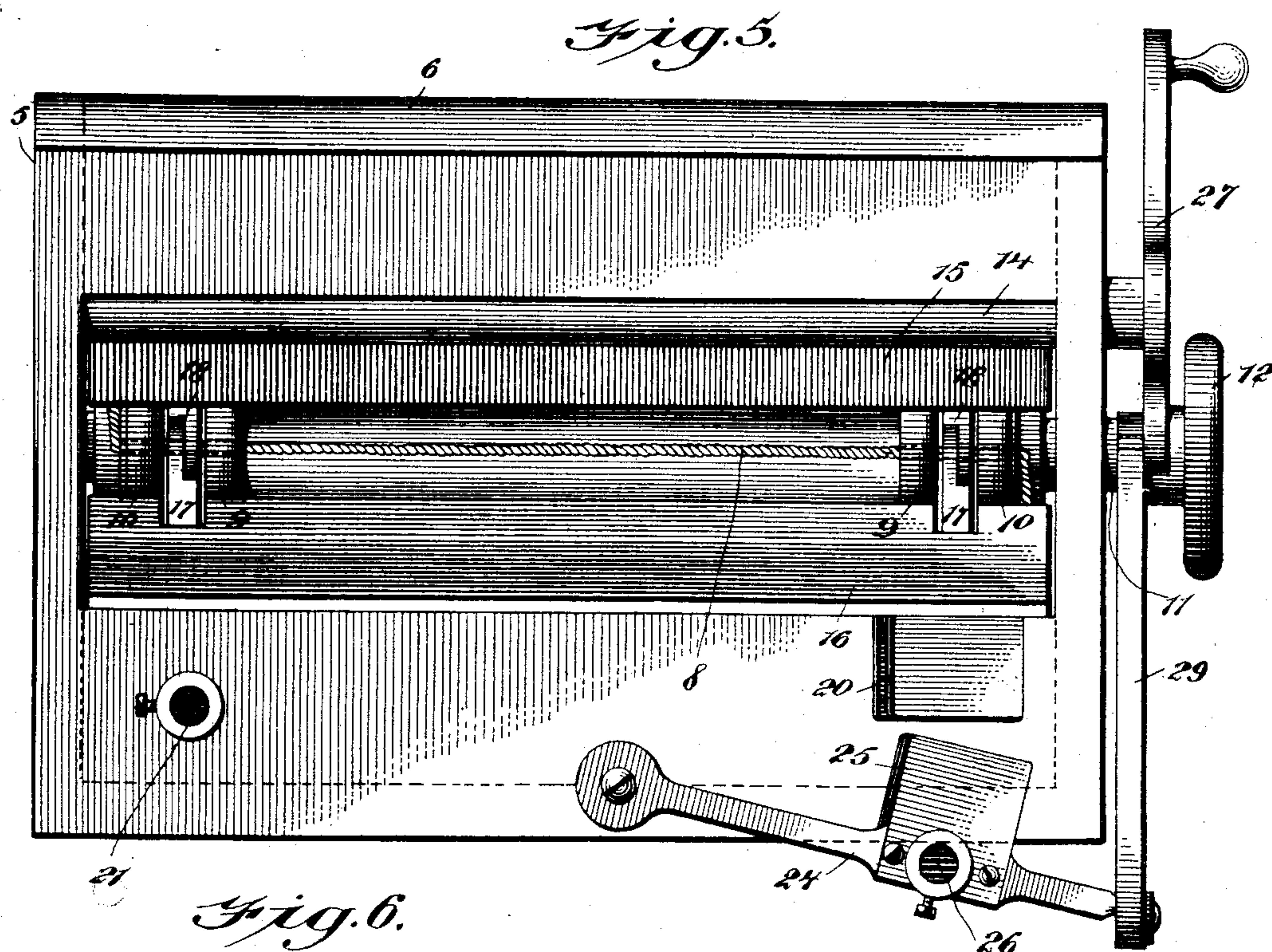
Patented Aug. 27, 1901.

W. R. COOK.  
FUSE HOLDER.

(Application filed Dec. 21, 1900.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES:

*H. G. Dieterich*  
*C. R. Ferguson*

INVENTOR

*Warren R. Cook*

BY

*Mumy*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

WARREN RANKING COOK, OF PITTSBURG, PENNSYLVANIA.

## FUSE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 681,621, dated August 27, 1901.

Application filed December 21, 1900. Serial No. 40,684. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN RANKING COOK, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Fuse-Holder, of which the following is a full, clear, and exact description.

This invention relates to improvements in fuse-wire holders particularly adapted for electrically-operated street-cars, although they may be found of equal service in any electric circuit where an overload of current is apt to occur; and the object is to provide a holder of simple construction having a plurality of fuse-wires, so that should one be burned out a new one may be quickly turned into place to complete the circuit.

I will describe a fuse-holder embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a fuse-holder embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 3. Fig. 3 is a front elevation with the cover removed. Figs. 4 and 5 are bottom views showing parts in different positions. Fig. 6 is a section through the rotary holder. Fig. 7 is a section of one of the end pieces or heads of the holder, and Fig. 8 shows details of a switch employed.

Referring to the drawings, 5 designates a casing of suitable insulating and spark-proof material—such, for instance, as porcelain—and this casing consists of end pieces and a back and a bottom piece, through which is an opening, so that sparks, should any occur in the breaking of a wire or in making connections therewith, may fall. The front and top of the casing are closed by a removable cover 6.

Mounted to rotate in the casing is a fuse-holder 7, consisting of porcelain or similar material and longitudinally channeled to receive the different stretches of fuse-wire 8. The ribs or ridges between the channels form partitions separating one length of wire from another, preventing the transmission of a spark from a broken wire to the next complete wire of the series. At the ends of the

carrier 7 are heads, each consisting of separated disks 9 10, connected at the center by a tubular hub. These heads and the carrier 7 are mounted on a shaft 11, consisting of wood or other suitable material and having bearings in the end walls of the casing. The heads and carrier are removably mounted on the shaft, but are designed, of course, to rotate therewith, and to cause such rotation there may be a feather connection between the shaft and the parts, as indicated in Fig. 2. On one outwardly-extended end of the shaft 11 are a hand-wheel 12 and a pointer 13, movable over a circular row of figures on the end wall of the casing. These figures are equal in number to the number of channels in the carrier. The fuse-wire 8 is rove back and forth through the channels of the carrier and through the heads, as plainly indicated in the drawings.

Mounted in the lower portion of the casing forward of the center of the carrier is a shaft 14, consisting of wood or other suitable material, and connected with this shaft so as to rock or move therewith is a guard-plate 15, consisting of any suitable spark-proof material—such, for instance, as glass or slate—and rearward of the central line of said carrier is a fixed guard-plate 16, which extends down through the opening in the bottom of the casing. This guard-plate 16 consists of slate or other suitable material, and the two guard-plates are designed to prevent the passage of a spark upon the breaking of a fuse-wire to the next stretch of wire at either side.

At each end of the casing and designed to engage with the lengths of fuse-wire between the head portions 9 and 10 are gripping and circuit-closing jaws, each pair consisting of a jaw 17 and a section 18, these sections being pivotally connected together, and the inner or rear sections are pivotally connected at the rear ends to plugs 19, one of which is connected to a switch-section 20, while the other is connected to a lead-wire 21. Springs 22 hold the jaw members or sections 17 yieldingly in an upper position, as plainly indicated in the drawings. The jaws are designed to be moved into gripping connection with a fuse-wire stretch by the swinging movement of the plate 15. Therefore the outer jaw-sections 18 engage with this plate,



and the plate is provided with notches 23 near its ends, into which said sections 18 may pass.

A lever 24 is pivotally connected to the under side of the casing and carries a switch-section 25, designed to be moved into electrical connection with the switch-section 20. This switch-section 25 is made in the form of a plate, while the section 20 is made with two plates designed to engage opposite sides of the plate 25. This section 25 is connected to the lead-wire 26. The outer end of the shaft 14 is provided with a crank-handle 27 and also with a downwardly-disposed arm 28, from which a link 29 extends to a connection with the lever 24.

In operation when the parts are in normal position, as indicated in Fig. 1, the current will pass through the wire 26, the switch members, the plug 19, the jaw member 17, the stretch of fuse-wire to the opposite jaw 17, and thence out. Of course the direction of the current may be reversed. At this time the guard-plates 15 and 16 will be in a raised position, as indicated in Fig. 1. Should a section of fuse-wire be burned out, it is only necessary to rock or rotate the shaft 14, which will permit the jaws 17 and 18 to open by the jaws 18 falling downward, as indicated in Fig. 2. This movement of the shaft 14 will disconnect the switch-sections, as indicated in Fig. 2. By taking hold of the handle or hand-wheel 12 the carrier is now to be rotated to bring the next stretch of fuse-wire into connection with the jaws. This stretch of fuse-wire will first strike against the rear upper ends of the jaws 17, forcing them downward against the resistance of the springs 22, so that when said stretch of wire passes to the other side of the jaws 17 the springs will again move them upward, after which the shaft 14 is to be moved to its normal position, moving the plate 15 upward, and consequently moving the jaws 18 tightly against the fuse-wire, when the device is again in condition for action. Of course as the current is cut out no danger can result to a person in resetting the carrier. When all the stretches of the fuse-wire have burned out, the carrier may be readily removed and a new wire placed therein.

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

1. A fuse-holder, comprising a casing, a carrier mounted to rotate therein and carrying a series of stretches of fuse-wire, jaws for engaging with said stretches of fuse-wire, the said jaws being in the electrical circuit, and means for moving said jaws into and out of gripping connection with the wire, substantially as specified.

2. A fuse-holder, comprising a casing, a

longitudinally-channeled carrier mounted to rotate therein, fuse-wires extended along the channels, heads at the ends of the carrier, each head consisting of two connected disks spaced apart and across which space the fuse-wires extend, and current-carrying jaws adapted to engage with the portions of the wire between the disks of the heads, substantially as specified.

3. A fuse-holder, comprising a casing having an opening through its bottom wall, a fuse-carrier mounted to rotate in the casing, fuse-wires supported in the carrier, deflector-plates extended downward from said carrier at opposite sides of its center, and current-carrying devices adapted for removable connection with stretches of the fuse-wire, substantially as specified.

4. A fuse-holder, comprising a casing, a carrier mounted to rotate therein, fuse-wire stretches mounted in said carrier, jaws adapted to engage with opposite ends of the fuse-wire stretches, the said jaws being in the electric circuit, a shaft, a guard-plate attached to said shaft and adapted to engage with sections of the jaws for moving said jaws to clamping position when the shaft is rocked or rotated, and a cut-out or switch operated by movements of said shaft, substantially as specified.

5. A fuse-holder, comprising a casing, a longitudinally-channeled carrier mounted to rotate in the casing, fuse-wires supported by said carrier, a pointer on the outwardly-extended shaft of said carrier, a dial on the end of the casing over which said pointer may move, gripping-jaws in the electric circuit and adapted for connection with the fuse-wire, means for moving the gripping-jaws, and a switch operated by said means, substantially as specified.

6. A fuse-holder, comprising a casing, a carrier mounted to rotate in the casing, fuse-wires supported by said carrier, swinging jaws at opposite ends of the casing and adapted for engagement with the fuse-wire, the sections of the jaws being pivoted together and the inner sections being in electrical connection with lead-wires, a rotary shaft, means operated by the rotary movement of said shaft for moving the jaws into clamping position with a wire, a fixed switch-section, and a movable switch-section operated by a movement of said shaft, substantially as specified.

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

WARREN RANKING COOK.

Witnesses:

JAMES J. McVEIGH,

LOUIS H. COOK.