

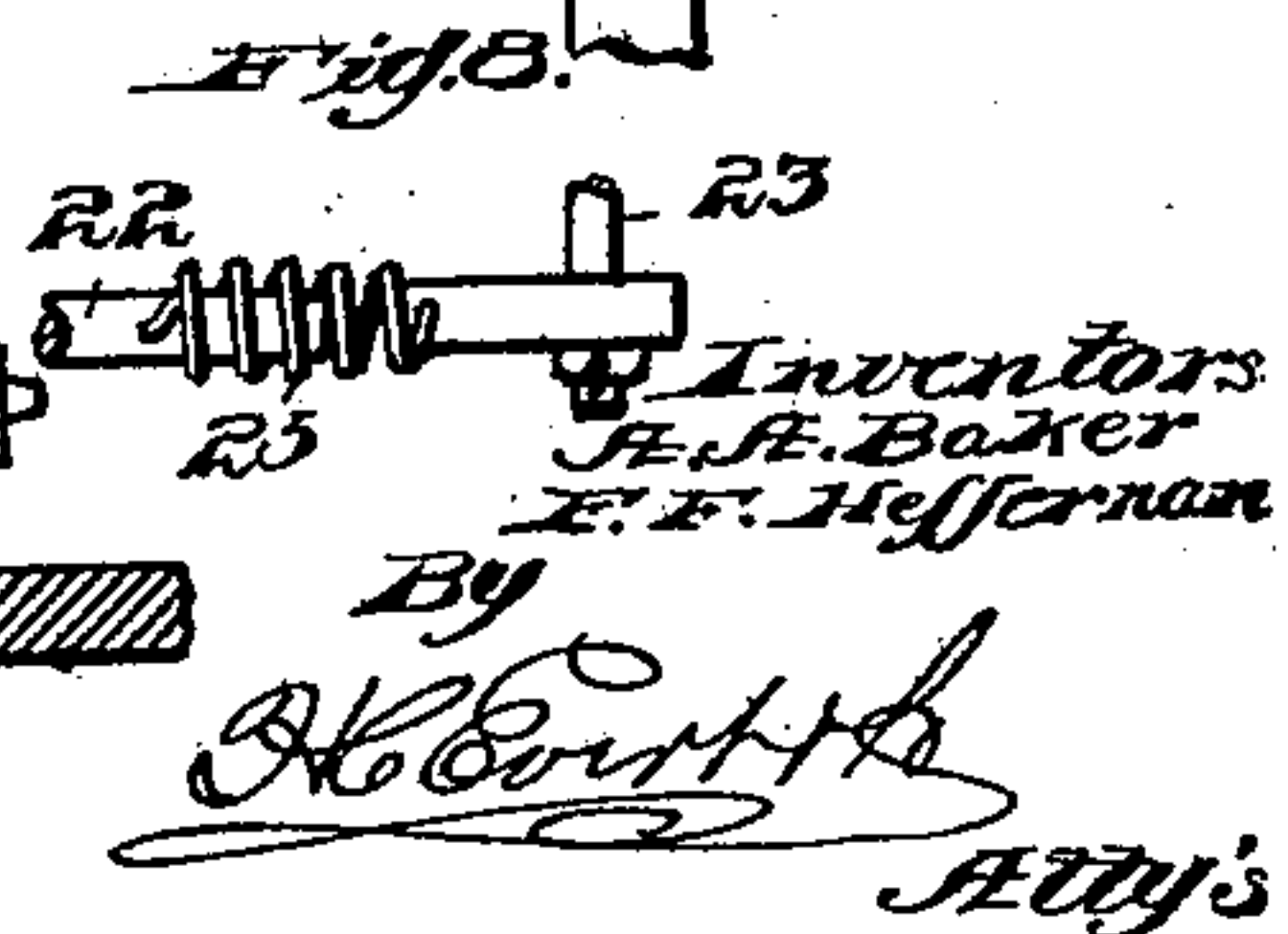
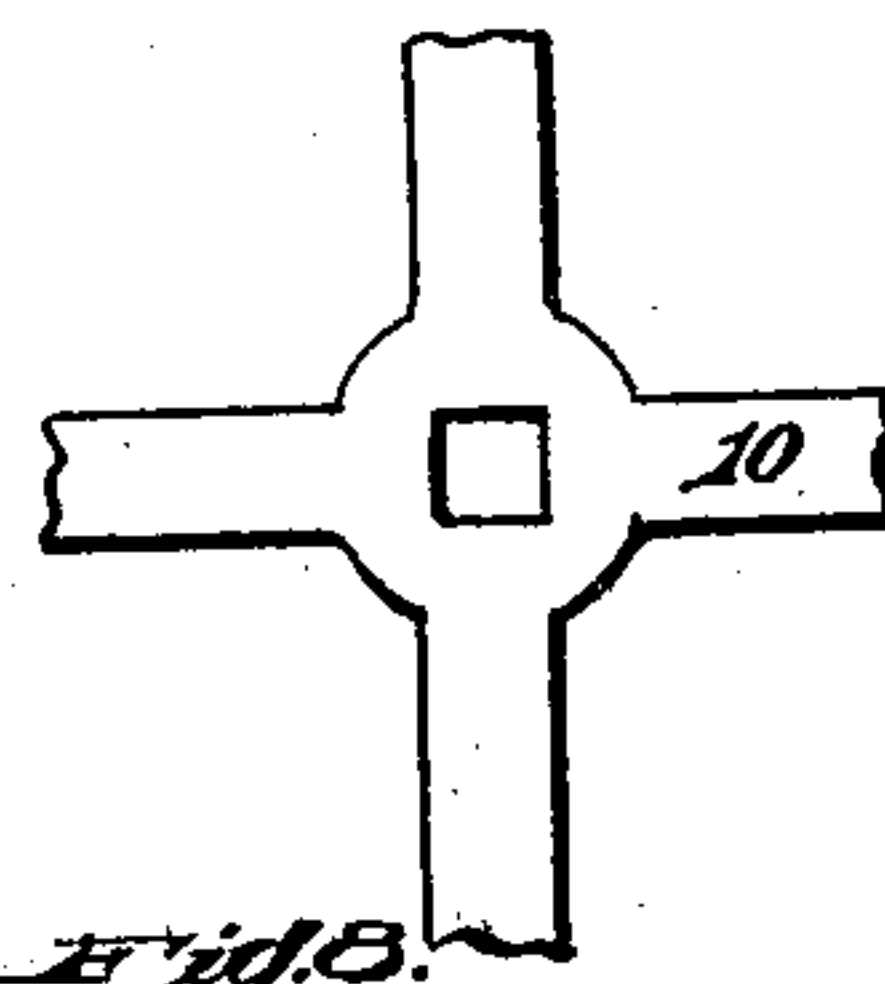
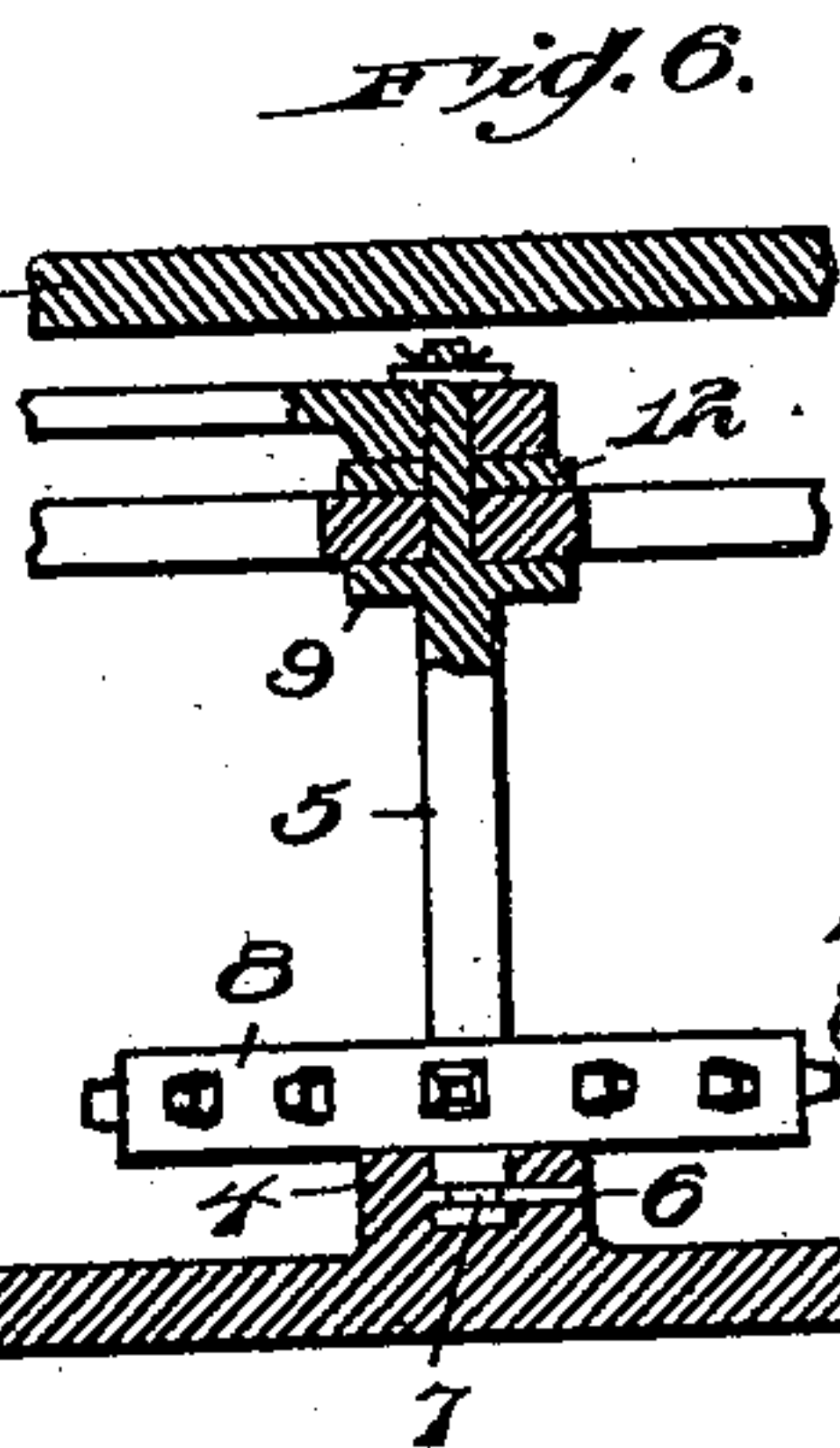
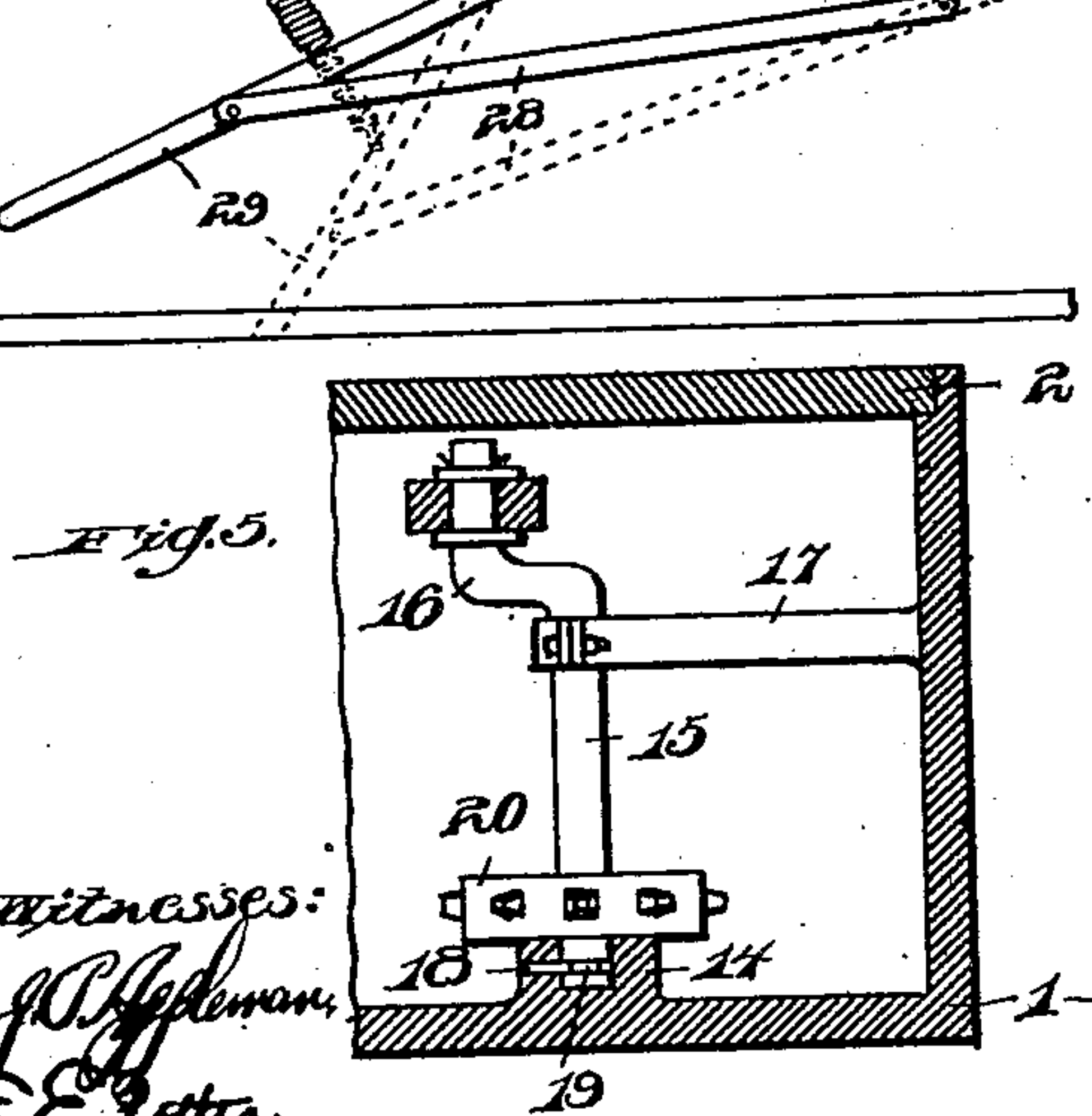
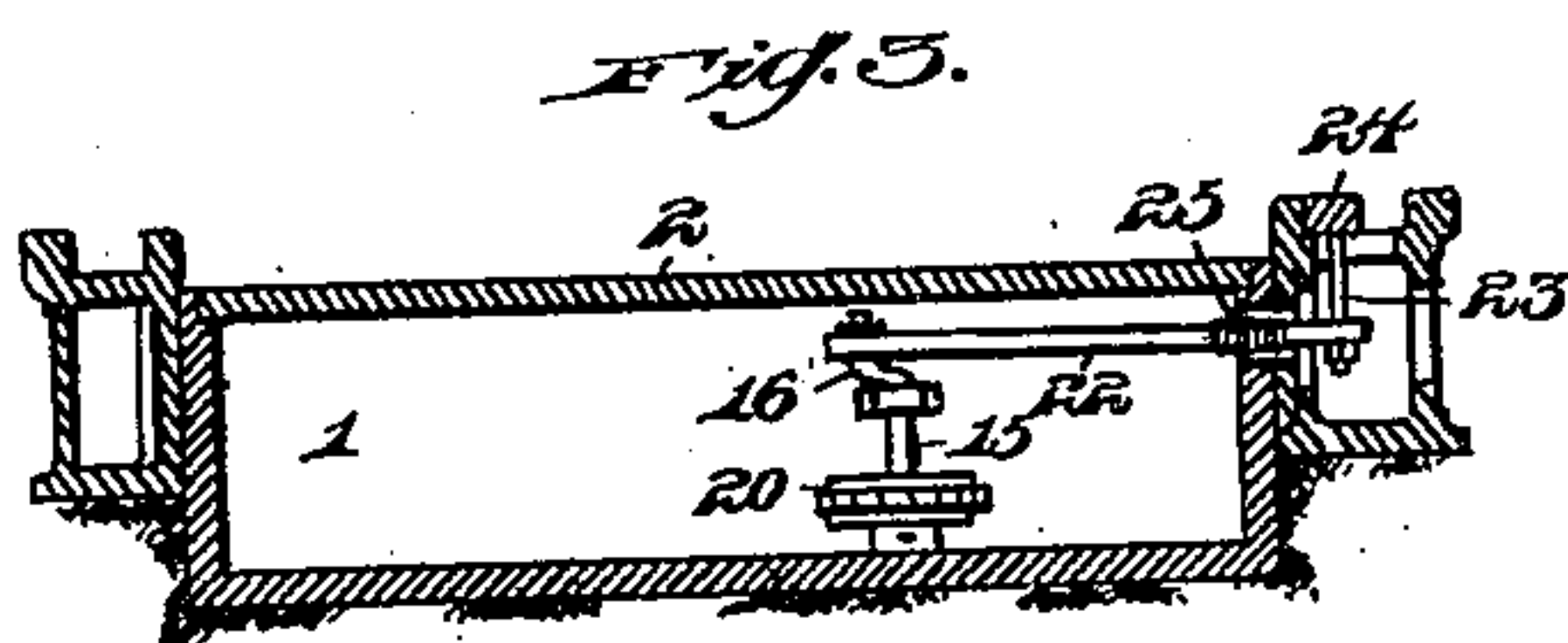
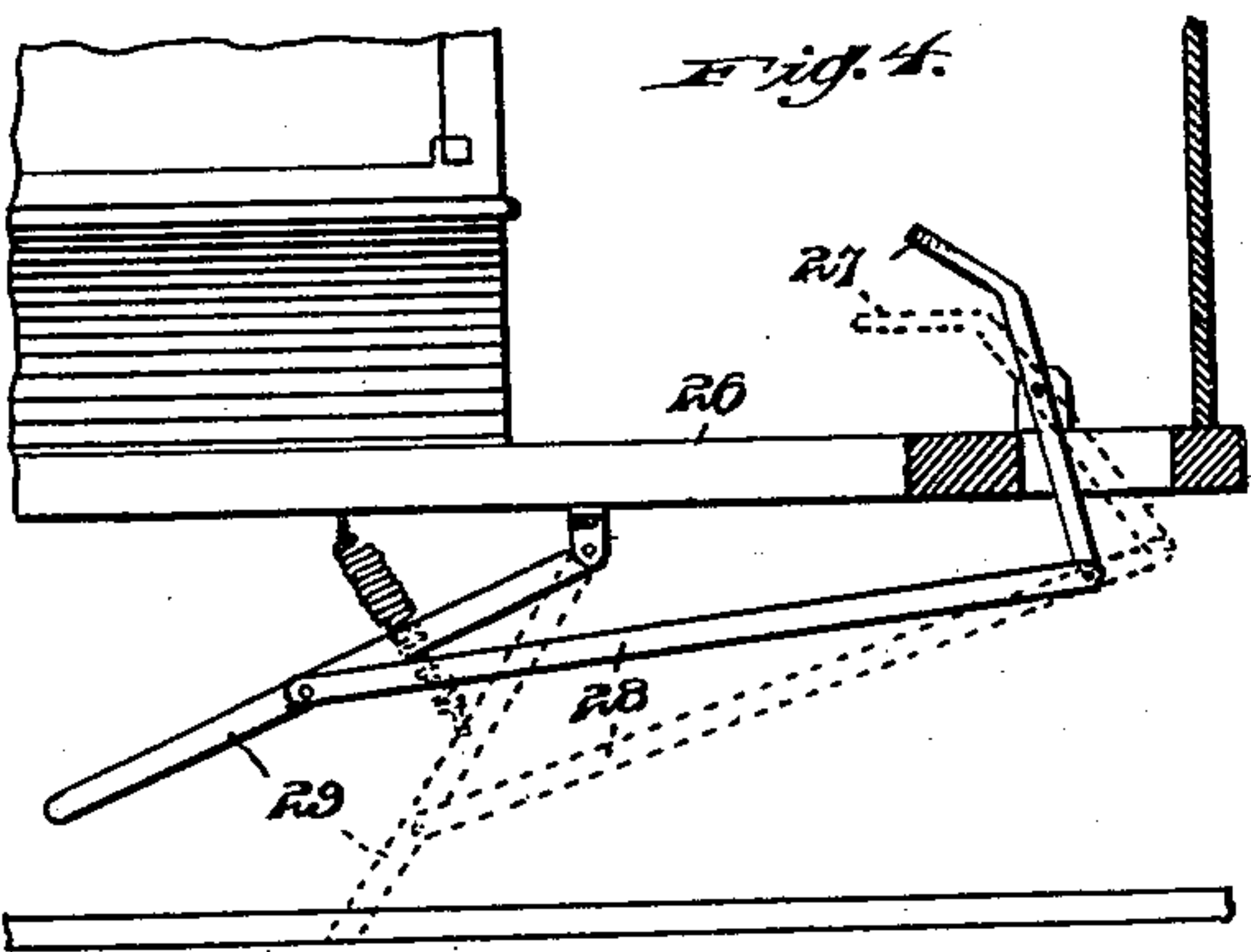
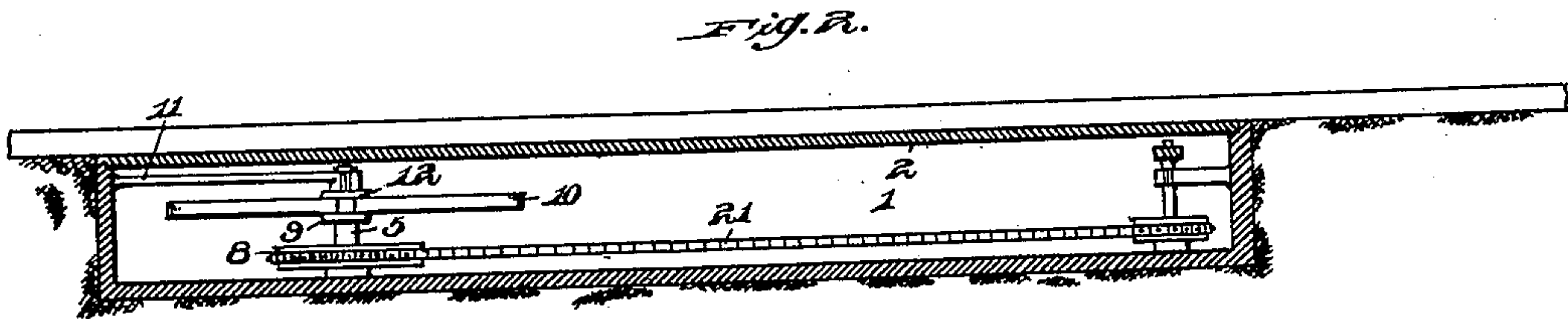
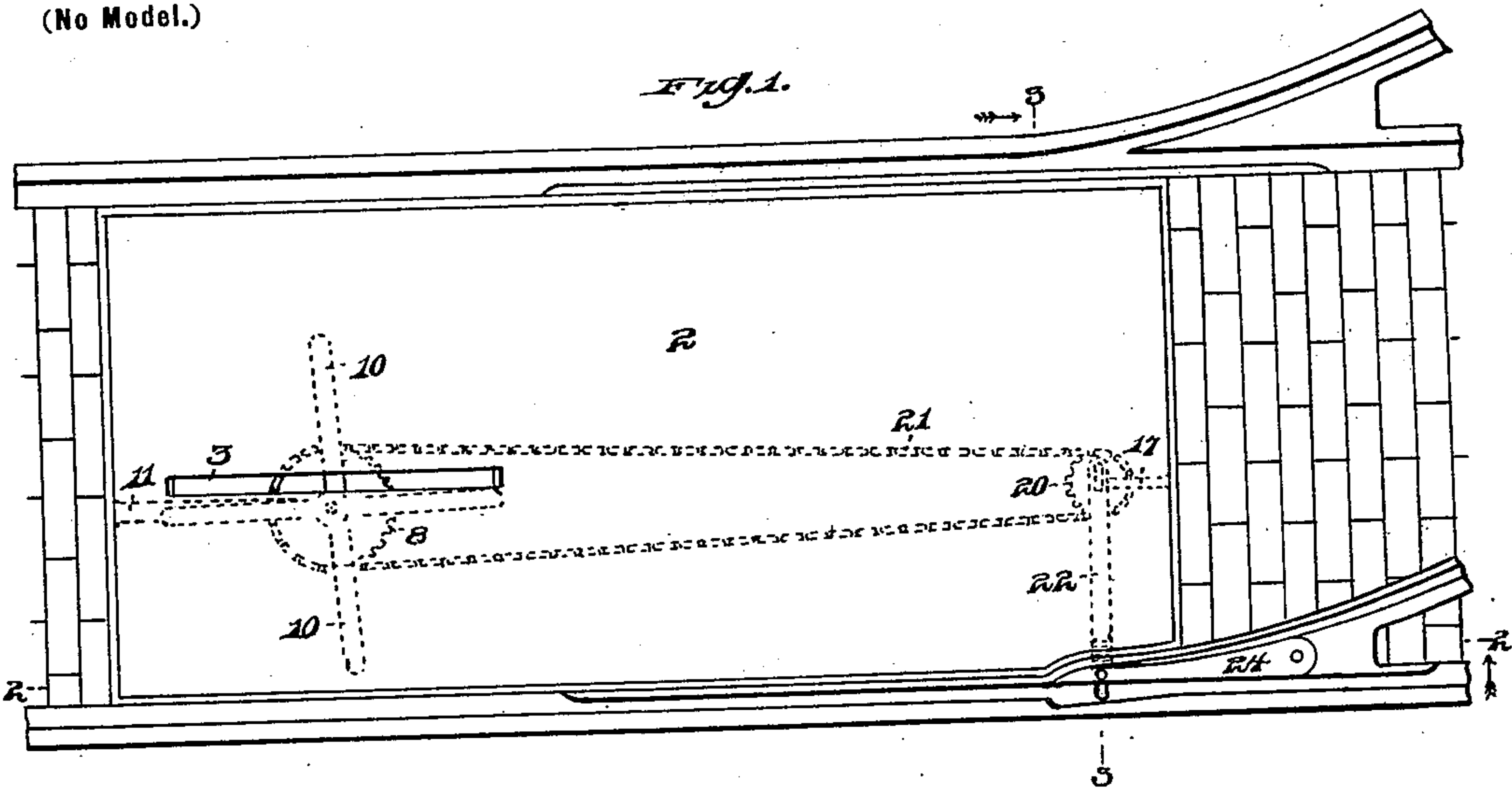
No. 677,618.

Patented July 2, 1901.

A. A. BAKER & F. F. HEFFERNAN.
SWITCH THROWING DEVICE.

(Application filed Apr. 16, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

ANDREW A. BAKER AND FLORENCE F. HEFFERNAN, OF PITTSBURG,
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SWITCH-THROWING DEVICE.

SPECIFICATION forming part of Letters Patent No. 677,618, dated July 2, 1901.

Application filed April 16, 1901. Serial No. 56,085. (No model.)

To all whom it may concern:

Be it known that we, ANDREW A. BAKER and FLORENCE F. HEFFERNAN, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switch-throwing devices, and has for its object to provide novel and effective means whereby the switch-tongue may be conveniently thrown from the car.

Briefly described, our invention consists in providing a casing in the bed of the track, the lid or cover of which casing is provided with a suitable slot, and locating within this casing means connected to the switch-tongue and adapted to be operated by a shoe or lever carried by the car to operate the tongue, the specific construction of which will be hereinafter described and then particularly pointed out in the claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will be employed for designating like parts throughout the several views of the drawings, in which—

Figure 1 is a top plan view of a portion of a track, showing the switch-operating mechanism within the casing in dotted lines. Fig. 2 is a longitudinal sectional view taken on the line 2 2 of Fig. 1. Fig. 3 is a transverse vertical sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a detail side elevation of a car, partly in section, showing in side elevation the means carried by the car for engagement with the switch mechanism to operate the same. Fig. 5 is an enlarged transverse vertical sectional view of a part of the casing, showing a part of the mechanism. Fig. 6 is a sectional view of a part of the casing and of the mechanism. Fig. 7 is a top plan view of a part of the spider. Fig. 8 is a side elevation of a part of the switch-operating rod or lever.

In the accompanying drawings, 1 indicates

a casing which is located in the bed of the track and extends the entire width of the same between the two rails. A lid or cover 2 is fitted in the top of this box or casing and is provided with a slot extending longitudinally of the lid, this slot 3 being adapted to receive a shoe or lever carried by the car, whereby the mechanism may be actuated to move the switch-point. Located on the bottom of the box or casing 1, approximately in under the slot 3, is a bushing 4, in which is mounted for rotation a shaft 5, held within the bushing by means of a pin 6, which engages in a peripheral groove 7, provided therefor in the shaft. Mounted on this shaft 5, just above the bushing, is a sprocket-wheel 8. This shaft carries an integral collar or flange 9, and mounted on the shaft and resting on this collar or flange 9 is a spider 10. The shaft is held at its upper end by a brace 11, connected to one end of the casing. For convenience in construction the end of this brace that receives the upper end of the shaft is preferably split, forming straps which are drawn together by bolts or screws. If desired, a washer 12 may be placed between the brace 11 and the spider 10, as shown in detail in Fig. 6. Near its opposite end the box or casing has a bushing 14, located on the bottom of the box or casing and in which a shaft 15 is rotatably mounted, this shaft 15 terminating in a crank 16. The shaft is held near its upper end by a brace 17, secured to the inner face of the end of the box or casing. This shaft is held in the bushing on the bottom of the box or casing by a pin 18, engaging in a peripheral groove 19 in the shaft in the same manner as described for the shaft 5. A sprocket-wheel 20 is mounted on this shaft 15 directly above the bushing 14, and a sprocket-chain 21 connects the sprocket-wheel 20 with the sprocket-wheel 8. Connected to the crank 16 is an operating rod or lever 22, the outer end of which is connected by a pin 23 to the switch-point 24. This rod or lever is made in two parts and the two parts connected by a spring 25, as shown in detail in Fig. 8, so that in case the switch-tongue should be clogged the mechanism may be permitted to operate without damage.

Supported from the car-platform 26 is a

foot-lever 27, which has its lower end pivotally connected to a lever or link 28, the other end of which is connected to a shoe or lever 29, pivotally attached at its upper end to the underneath face of the car body or platform. This shoe or lever 29 is held normally suspended by means of a spring 30, as shown.

In operation the motorman when he desires to operate the switch-tongue depresses the upper end of the foot-lever 27, causing the same, together with the lever 28 and shoe, to assume the position shown in dotted lines, thus bringing the shoe or lever 29 into position to enter the slot 3, where it will engage with one of the arms of the spider 10, move the latter, and through the connections by sprocket-chain 21 move the switch-tongue, so as to allow the car to pass onto the switch-track. A car passing from the side track would readily operate to move the switch-tongue by pressure of the wheel-flanges, as in the usual manner.

In the construction and practical operation of our improved switch device it will be observed that various changes may be made in the details of construction without departing from the general spirit of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In street-railway switches, the combination with the pivoted switch-tongue, of a casing located in the bed of the track between the rails, said casing having a cover provided with a slot, a shaft mounted for rotation on the bottom of the casing near one end there-

of, a sprocket-wheel secured on said shaft, a spider mounted on the shaft near its upper end, a shaft mounted for rotation on the bottom of the casing near the opposite end thereof, a crank carried by said shaft, a sprocket-wheel mounted on the shaft, a chain connecting said sprockets, an operating-rod connected to the crank and to the switch-tongue, and means carried by the car for engagement with the spider to actuate the switch-tongue, substantially as described.

2. In street-railway switches, the combination with the switch-tongue, of a casing located in the bed of the track between the rails thereof, a cover for said casing, said cover provided with a slot, a shaft 5 journaled on the bottom of the casing, a sprocket mounted on said shaft, a spider mounted on said shaft, a shaft 15 journaled in the casing near the opposite end thereof to the shaft 5, a sprocket secured on said shaft 15, a crank carried by the shaft 15, a yielding operating-rod connecting the crank to the switch-tongue, a sprocket-chain connecting said sprockets, and means carried by the car adapted to enter said slot and engage the spider for actuating said switch-tongue, substantially as described.

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

ANDREW A. BAKER.

FLORENCE F. HEFFERNAN.

Witnesses:

JOHN NOLAND,
A. M. WILSON.