

No. 679,580.

Patented July 30, 1901.

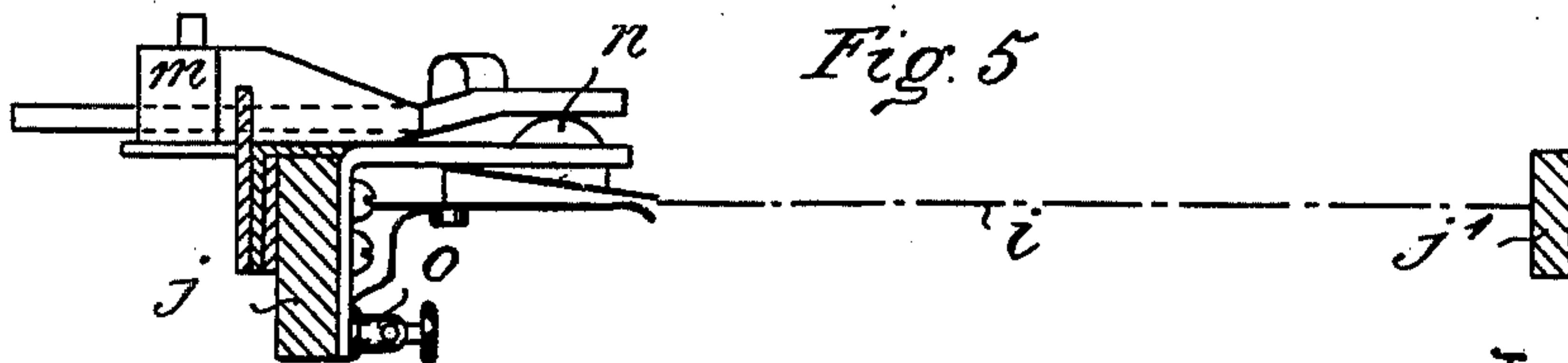
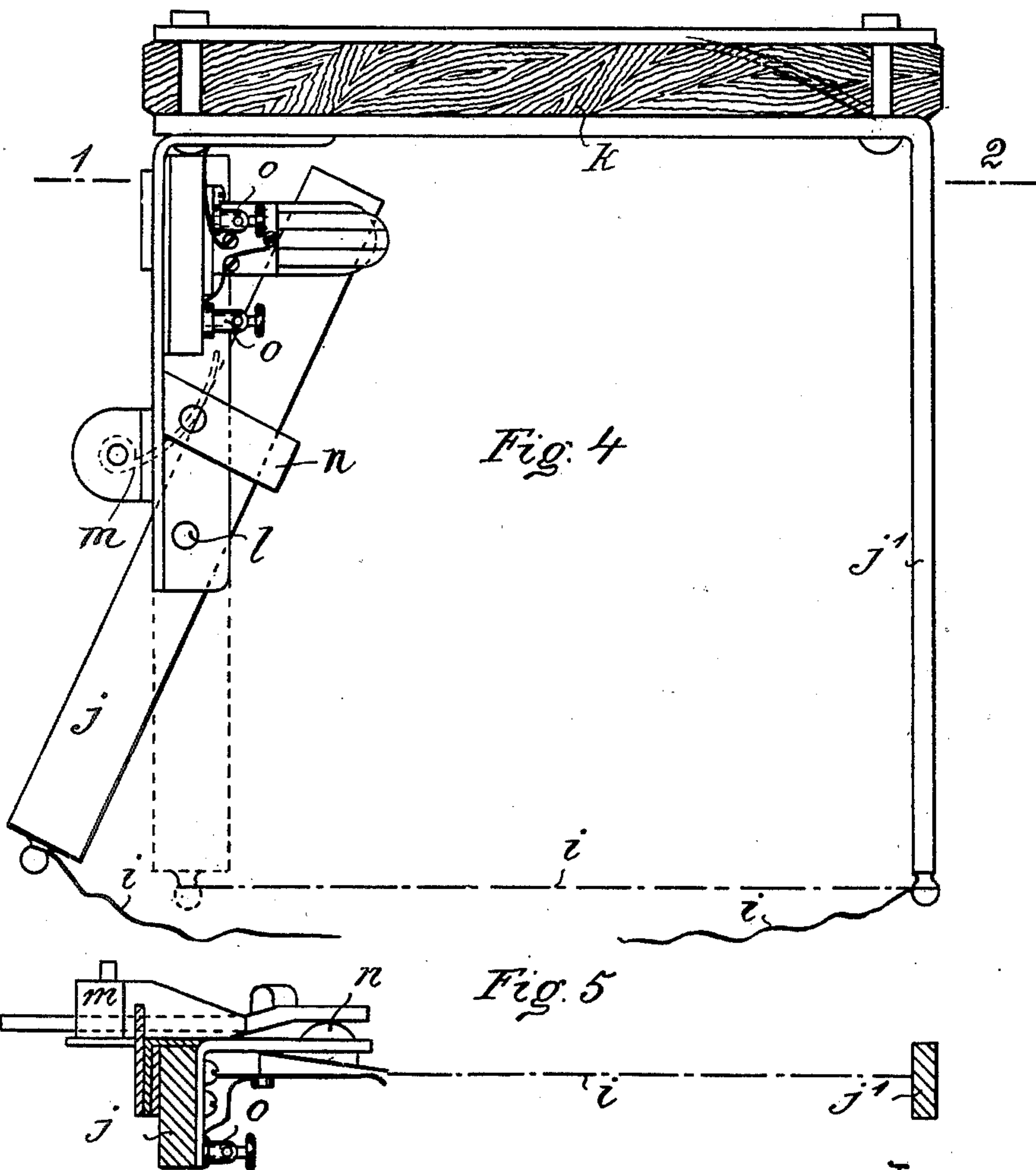
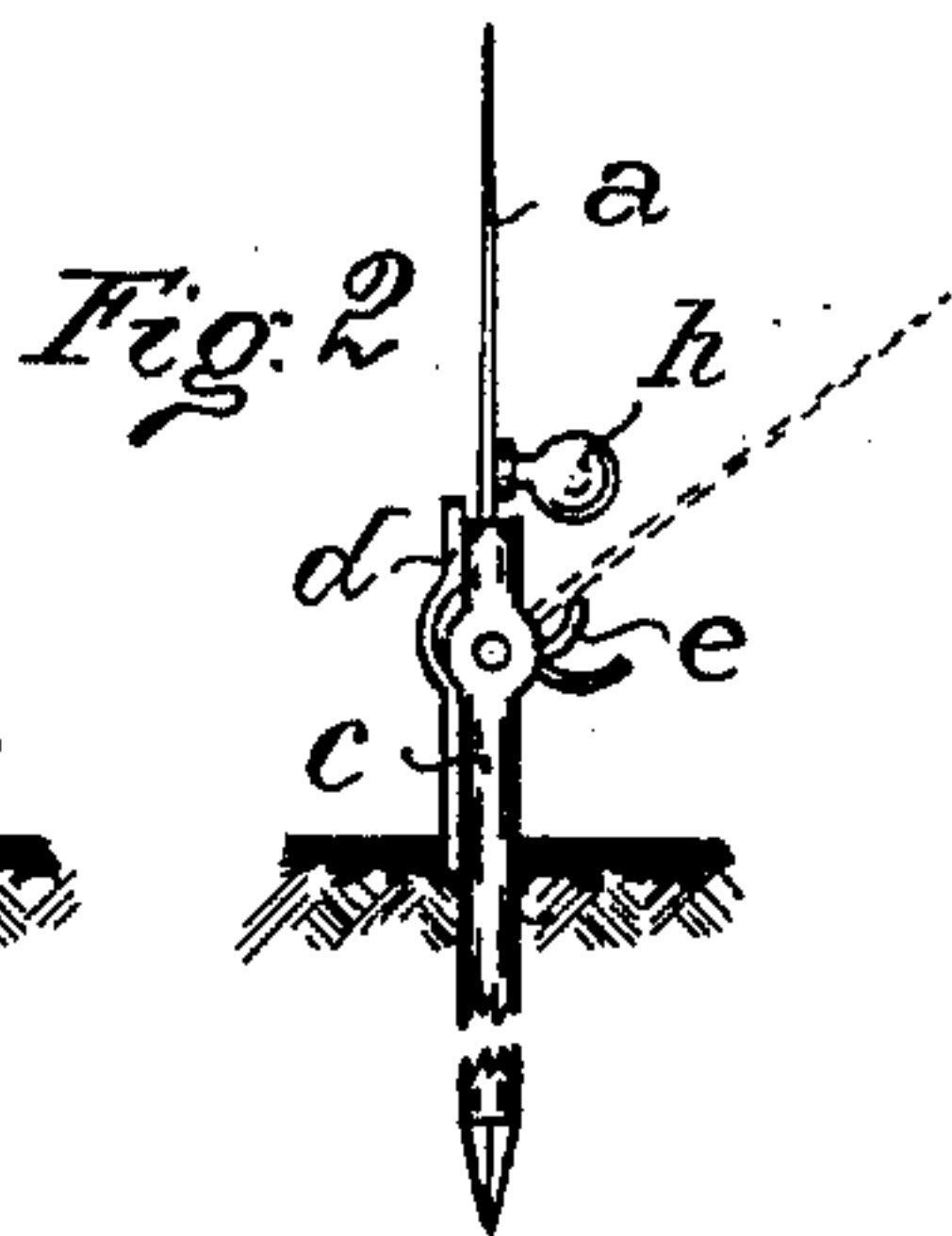
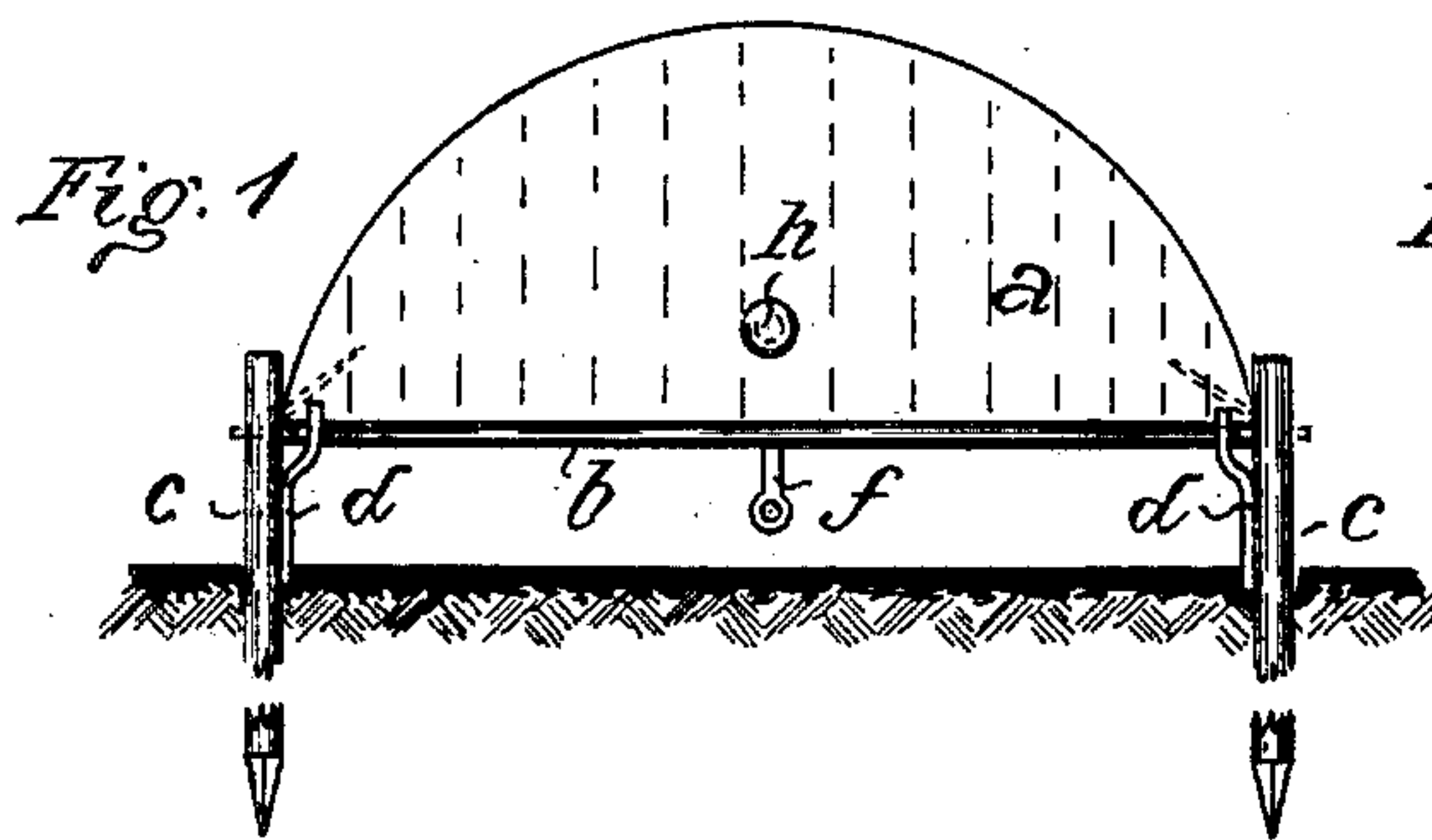
E. VILPOU.

MEANS FOR ACTUATING INDICATORS UPON MOVING TRAINS.

(No Model.)

(Application filed Feb. 23, 1900.)

3 Sheets—Sheet 1.



Witnesses

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3 Sheets—Sheet 2.

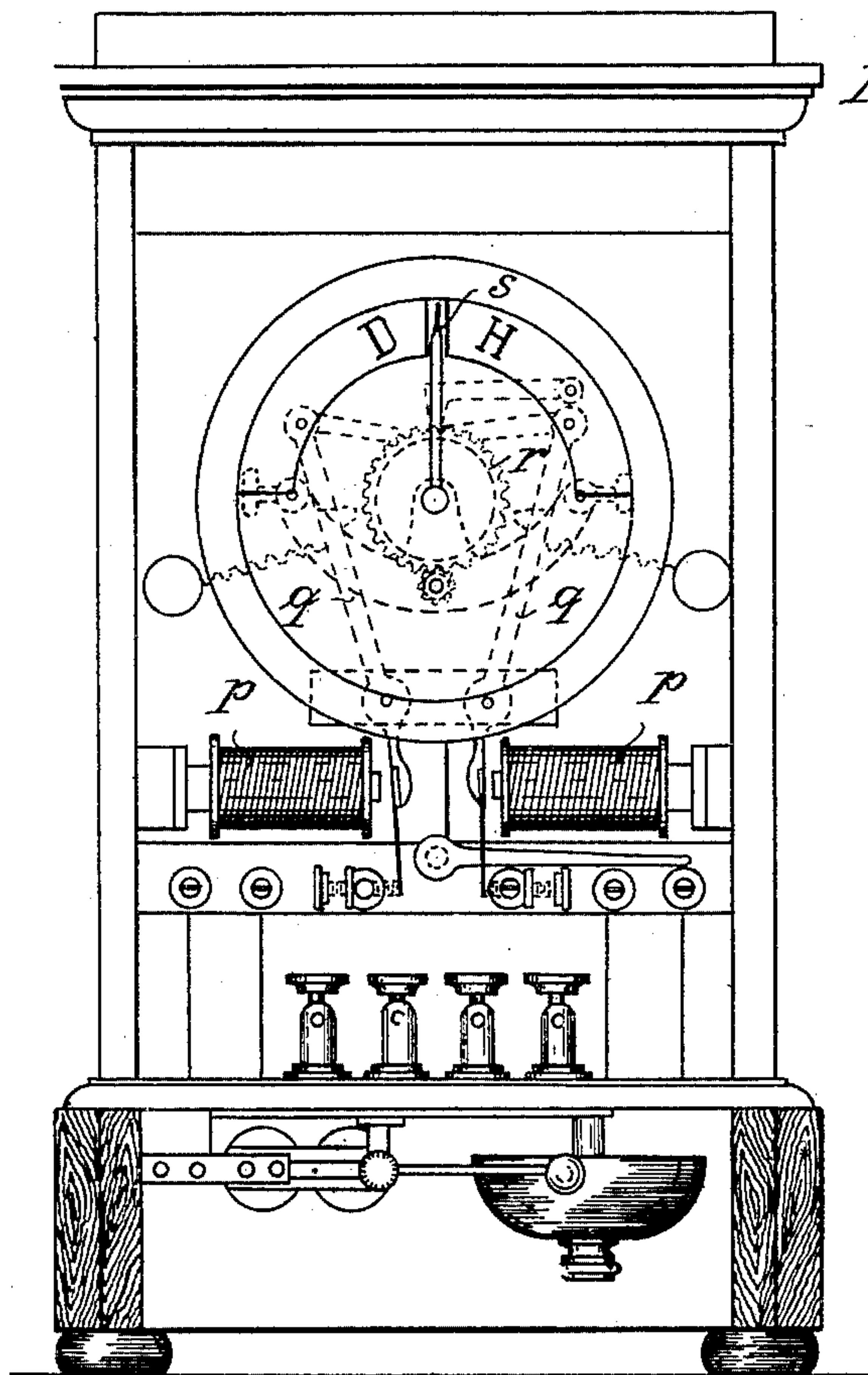


Fig. 6

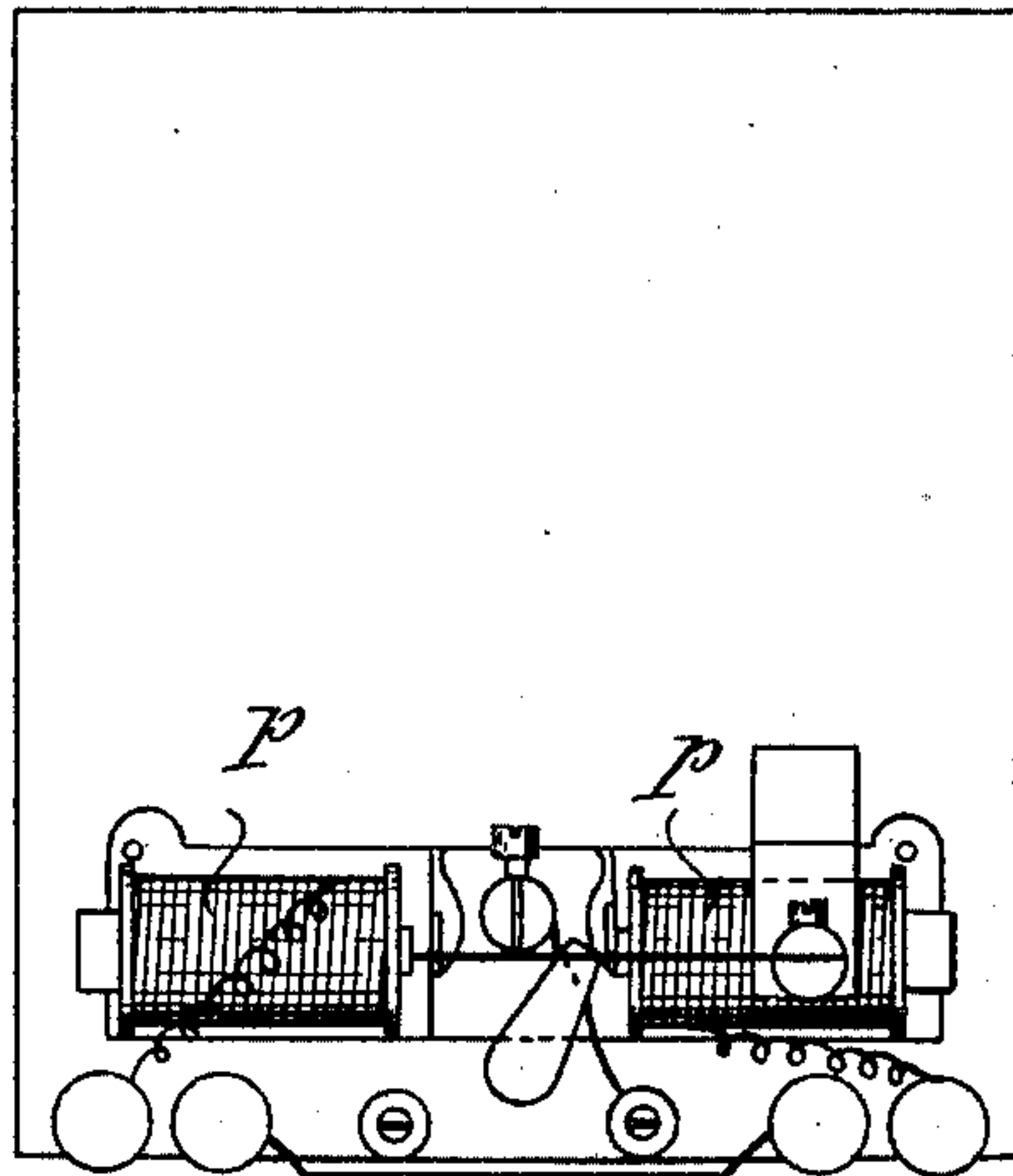


Fig. 7

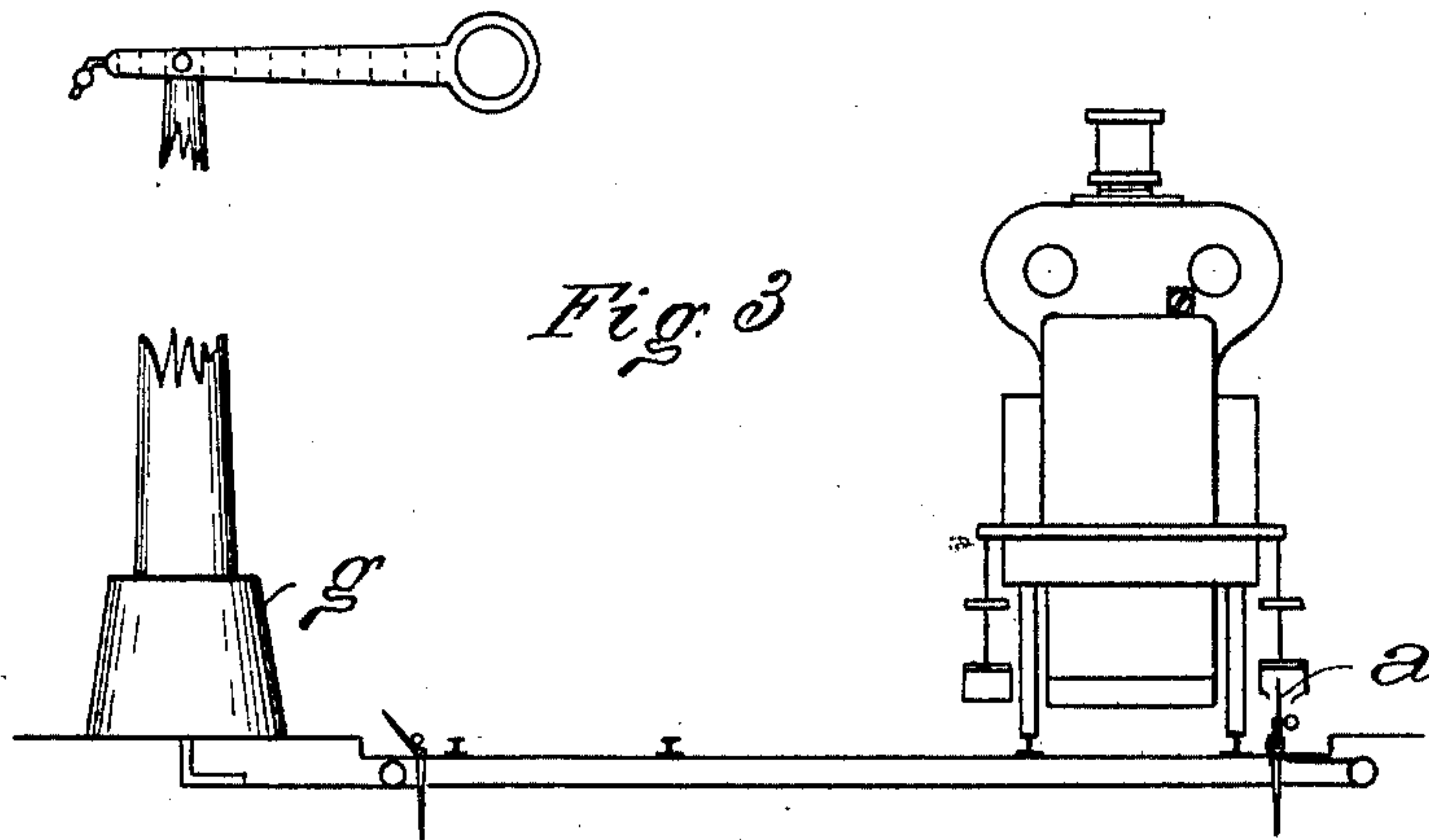


Fig. 8

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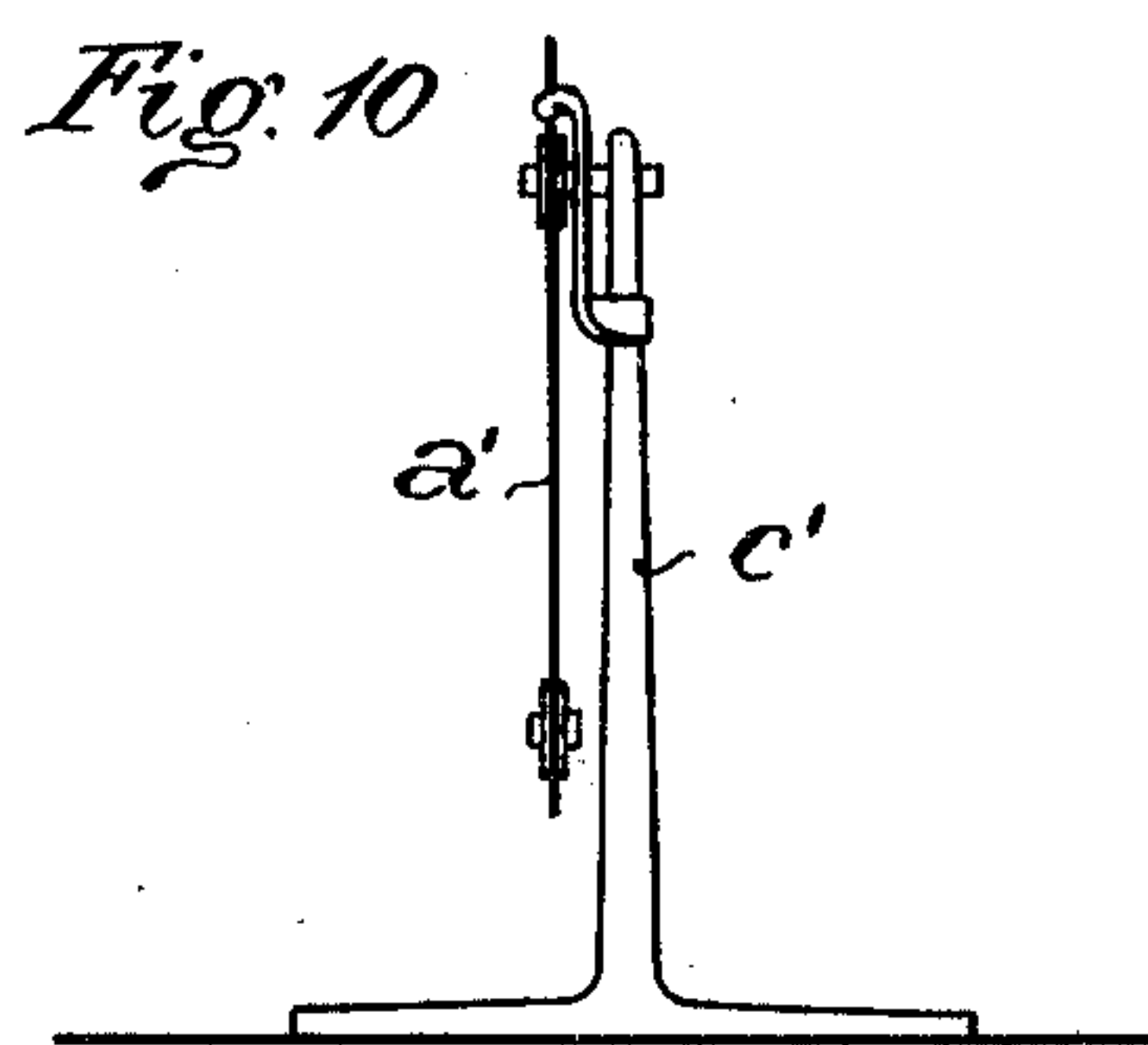
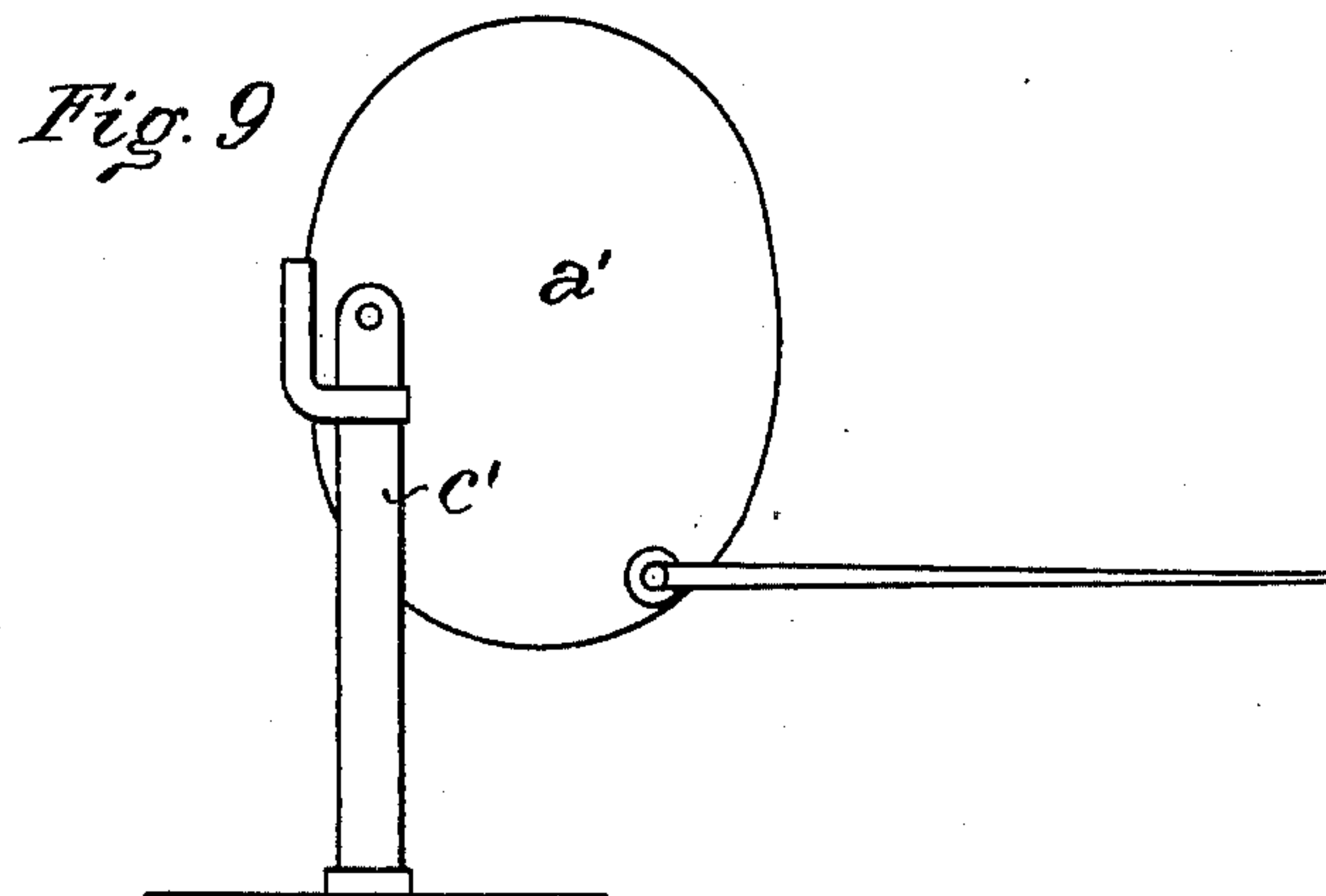
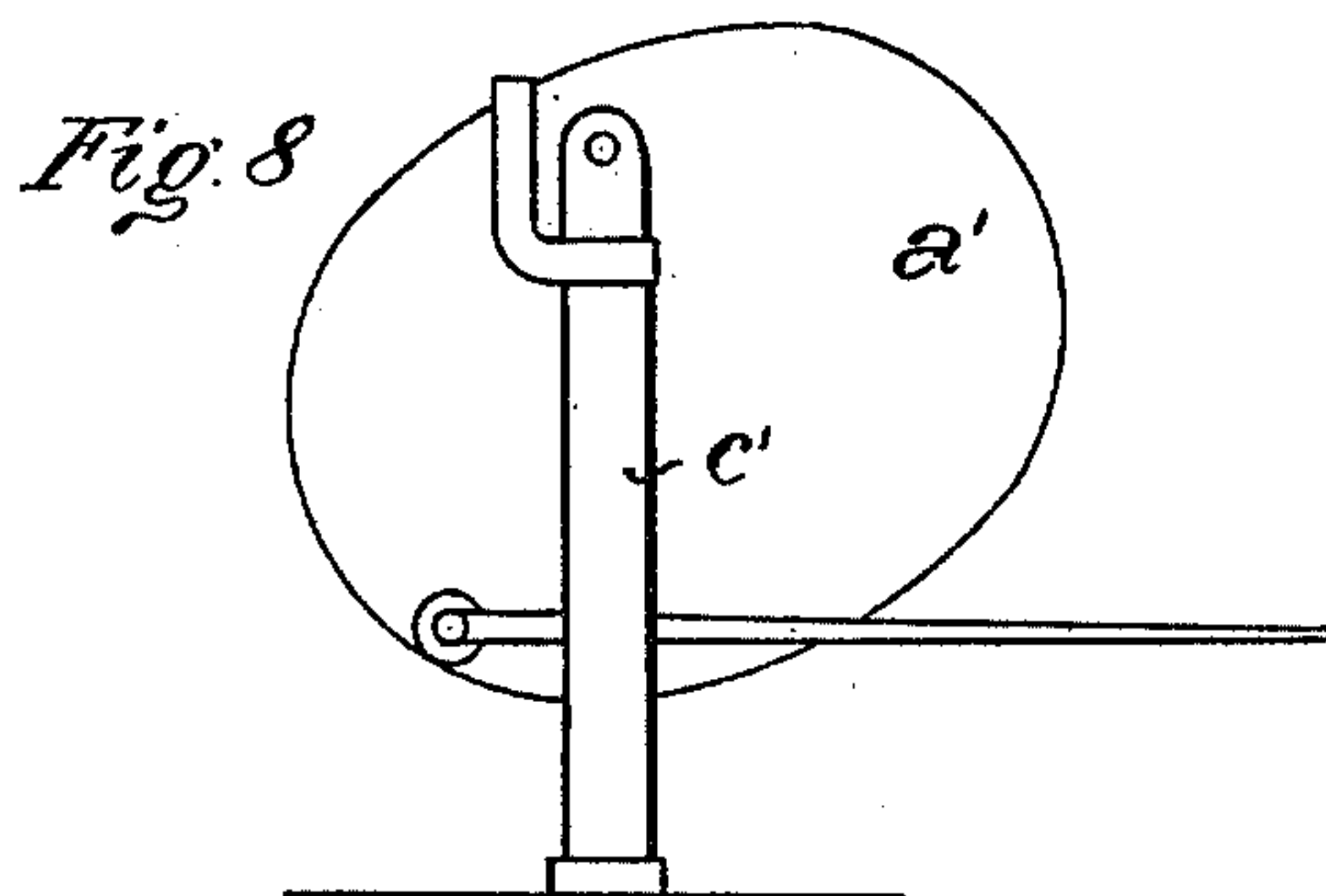
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(No Model.)

3 Sheets—Sheet 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

EDOUARD VILPOU, OF BLOIS, FRANCE.

## MEANS FOR ACTUATING INDICATORS UPON MOVING TRAINS.

SPECIFICATION forming part of Letters Patent No. 679,580, dated July 30, 1901.

Application filed February 23, 1900. Serial No. 6,265. (No model.)

*To all whom it may concern:*

Be it known that I, EDOUARD VILPOU, a citizen of the Republic of France, residing at No. 25 Rue Chemonton, Blois, France, have  
5 invented certain new and useful Improvements in Means for Actuating Indicators upon Moving Trains, of which the following is a specification.

This invention relates to improvements in  
10 means for actuating indicators upon trains, so as to inform the engine-driver or other operative as to the speed or stoppage of the train.

The subject-matter of the invention consists of knives located at certain intervals  
15 along a railroad-track and electrically connected with a signal device in the locomotive or car of the moving train, the arrangement of each knife being such that when raised it  
20 will cut through a cord carried in a tense or stretched condition by one of the cars of the train, and thereby cause the severed cord to set in operation devices to actuate the indicator upon which appears the signal indicating  
25 "stop," "slow down," or the like.

In order to make my invention clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views, and in which—

30 Figure 1 is a front view of one form of knife used in my invention. Fig. 2 is a side view of the knife. Fig. 3 shows the arrangement of the knife at the side of the track. Fig. 4 shows the device for holding the cord on a  
35 car or locomotive, together with the means for closing the electric circuit. Fig. 5 is a horizontal section on line 1 2 of Fig. 4. Fig. 6 is a front view of the electric indicator. Fig. 7 shows a part of the frame-plate of the indicator relating to the means by which a bell  
40 is caused constantly to ring when a magnet has been excited by the electric current. Fig. 8 shows another form of a knife in its position of rest. Fig. 9 shows the same knife in  
45 operating position; and Fig. 10 is a side view of the same, the position being the same as in Fig. 8.

The arrangement and function of the apparatus are substantially as follows:

50 The knives *a* in the shape of a semicircular disk are supported in the standard *c* by means of a cross-bar *b* and the lateral stops

*d* of this cross-bar, the standard being inserted in the ground parallel to the track. Each standard has two stops, of which *d* holds the  
55 knife in the upright position and *e* holds it when inclined or in its position of rest. The cross-bar has in its center a projection *f*, which is connected with the signal, switch, gate, or the like by a bell-crank lever and a cord or  
60 chain, as indicated in Fig. 3. A knob-shaped counterpoise *h* on the knife tends normally to return it from a working position to a position of rest.

At a suitable place at the side of a railway-  
65 car is a cord *i*, stretched between two arms *j j'*. The vertical arm *j* is mounted on a pivot *l*, and under the action of a spring *m* automatically assumes a tilted position as soon as the cord *i* is cut by a knife *a*. The arm *j*  
70 when thus moved is caught by a stop *n*, electrically connected with a binding-screw *o*, and by the contact thus established is the circuit closed. This circuit contains an indicator of  
75 well-known form, (represented in Figs. 6 and 7,) which is situated, preferably, either upon the locomotive or upon the baggage-car and contains electrically-operated hands on a dial and an alarm-bell serving to indicate "stop,"  
80 "slow speed," or the like. At each side of the apparatus is an electromagnet *p*, actuating a pawl *q* when the circuit is closed, that pawl in its turn actuating a ratchet *r*. The shaft of the latter carries outside of the apparatus a hand *s*, which indicates upon a scale  
85 the order to "slow speed" or "stop," depending upon which electromagnet has been excited. When the apparatus, Fig. 6, has been actuated, the circuit must be broken and the parts restored to their normal positions by the  
90 engine-driver or other official having charge of it.

In the construction shown in Figs. 8 to 10 the knife is elliptically shaped and is rotatably positioned in a suitable support or stand-  
95 ard *c'*. By moving the knife from the position Fig. 8 to that shown in Fig. 9 the knife is capable of cutting the cord of the passing train, so as thereby to give the desired signal in the manner above described.

Having thus described my invention, what I desire to secure by Letters Patent is—

In a moving-train indicating apparatus, a counterbalanced knife pivotally secured at  
100

one side of the railroad-track, a lever for raising said knife into operative position, means for holding the knife in operative position, and means for holding it in inoperative position, a cord tensely held on moving car in a position to be severed when the knife is raised, a pivoted lever secured to said cord, an electric contact for said lever, an electric circuit adapted to be closed by the severing of the

cord and operating of the lever, and an electrically-operated indicator or signal device arranged in said circuit, as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDOUARD VILPOU.

Witnesses:

EDWARD P. MACLEAN,  
GEORGE E. LIGHT.