

No. 717,020.

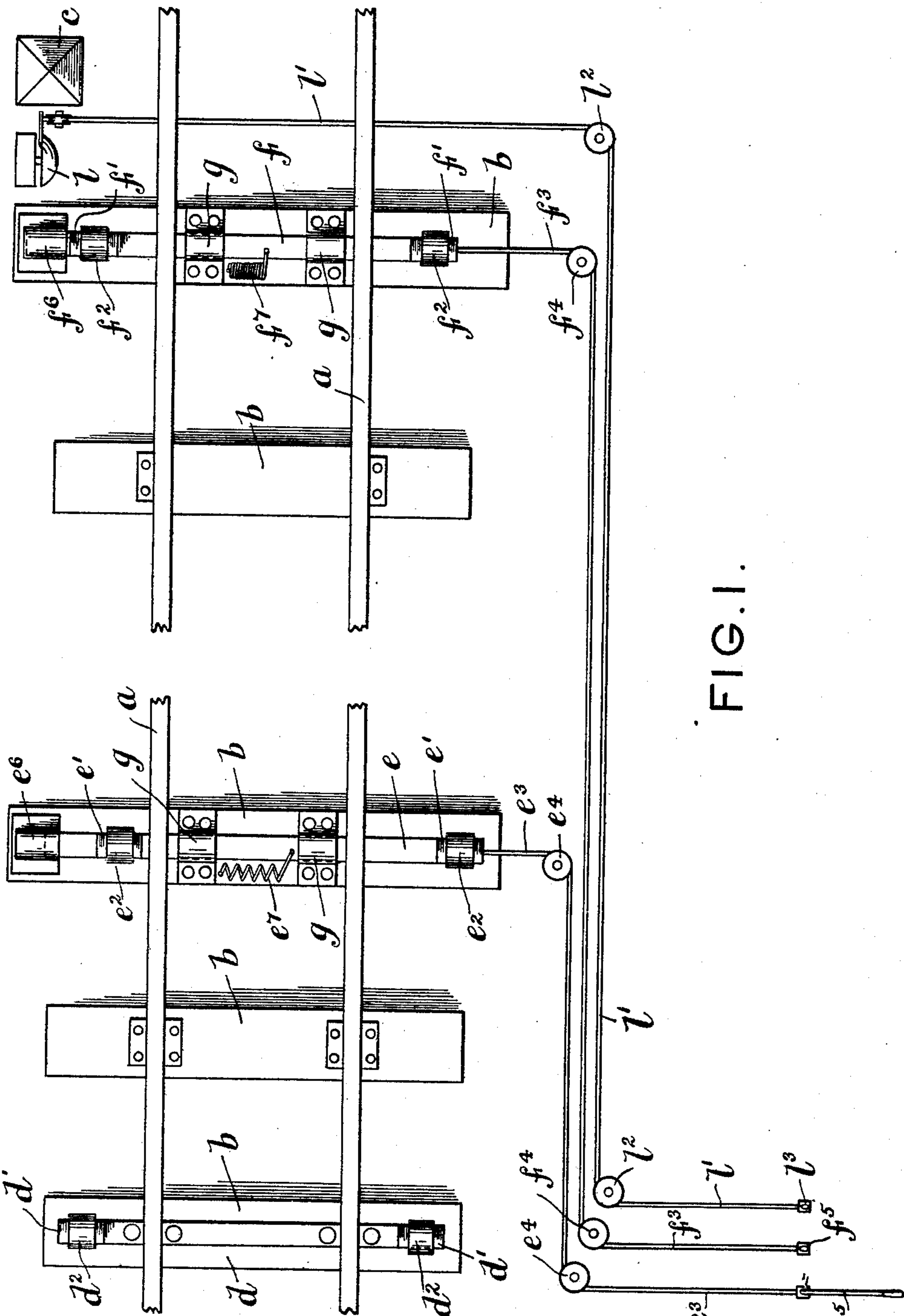
Patented Dec. 30, 1902.

J. H. PLEASANCE.
RAILWAY FOG SIGNALING APPARATUS.

(Application filed May 31, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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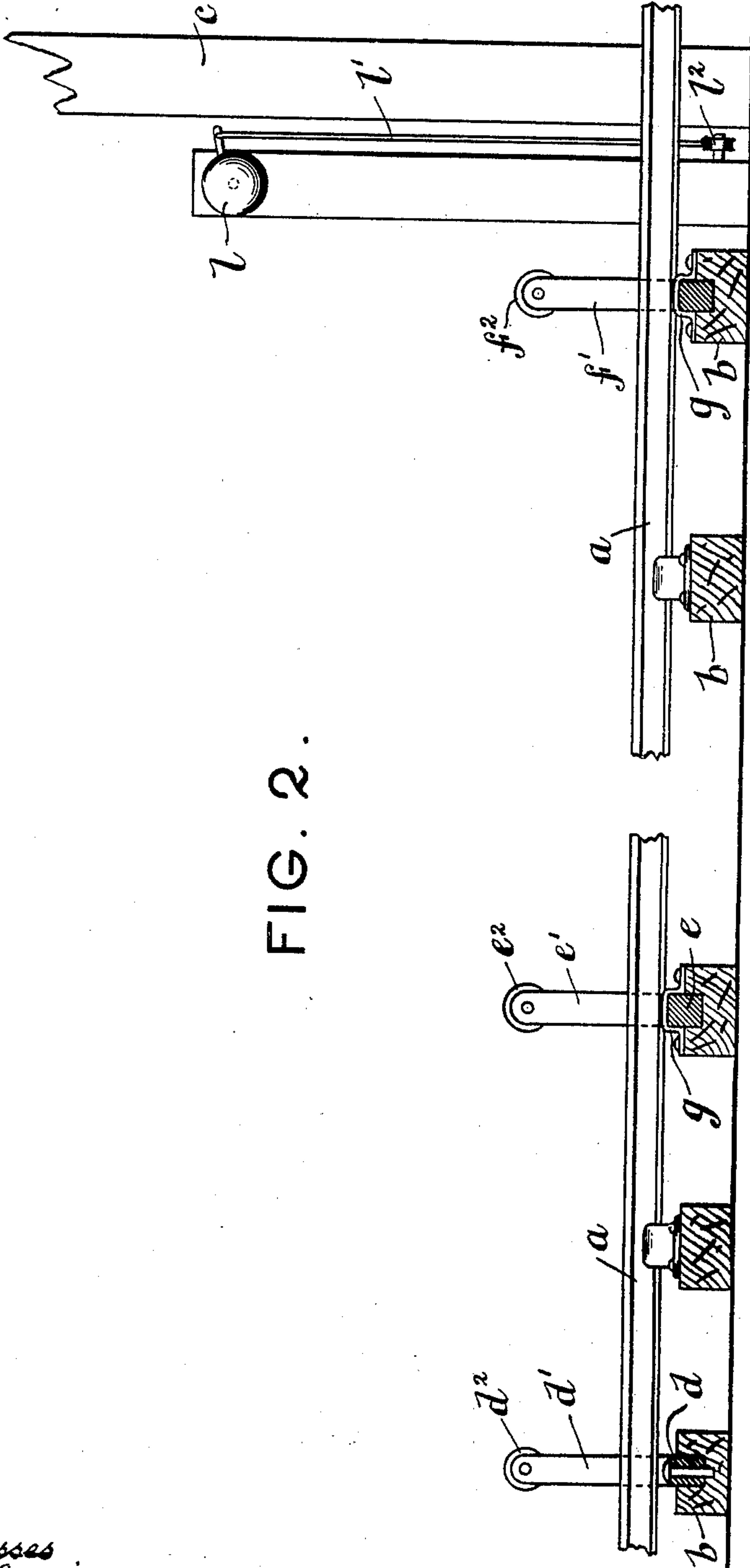
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(No Model.)

3 Sheets—Sheet 2.

FIG. 2.



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3 Sheets—Sheet 3.

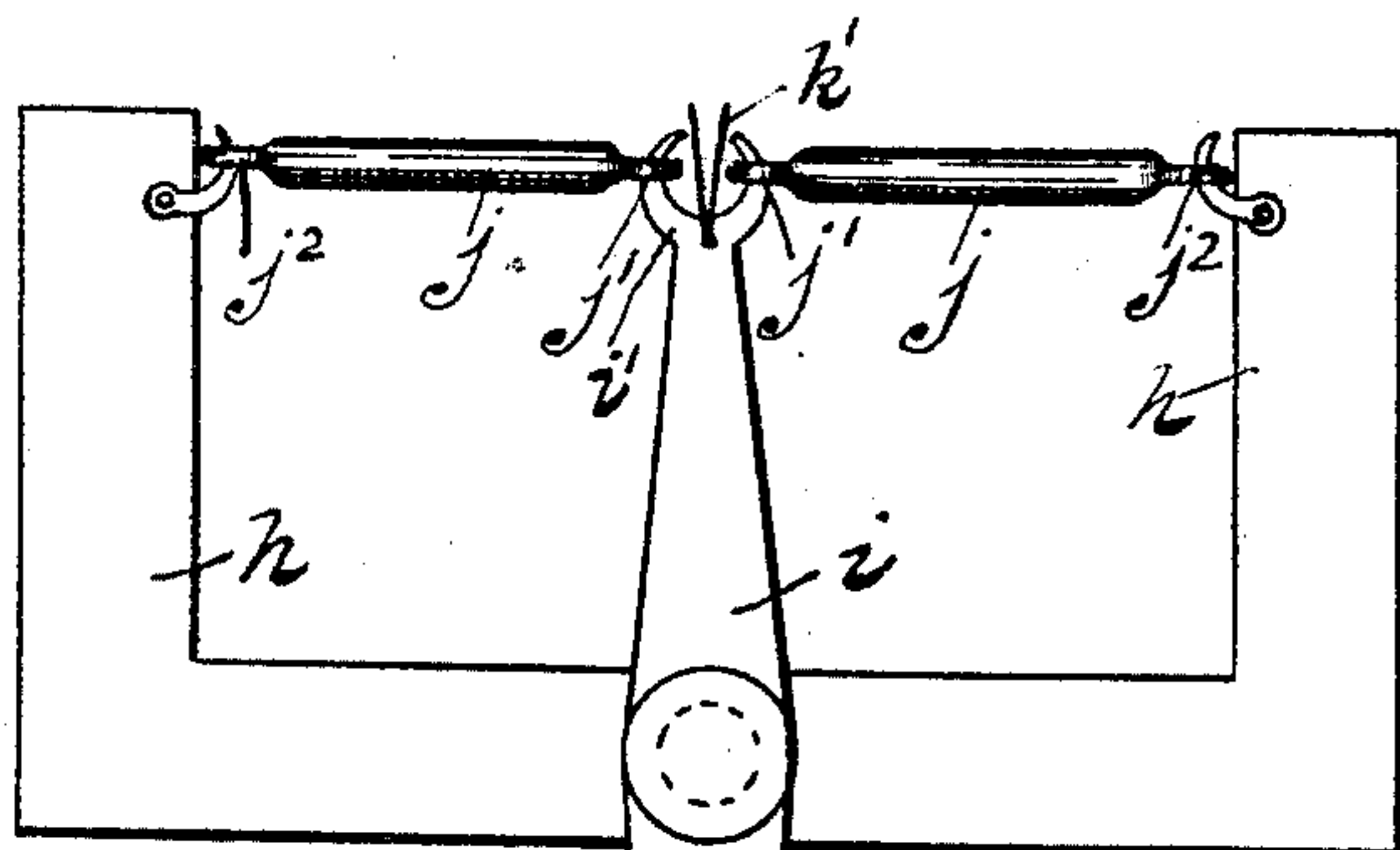


FIG. 3

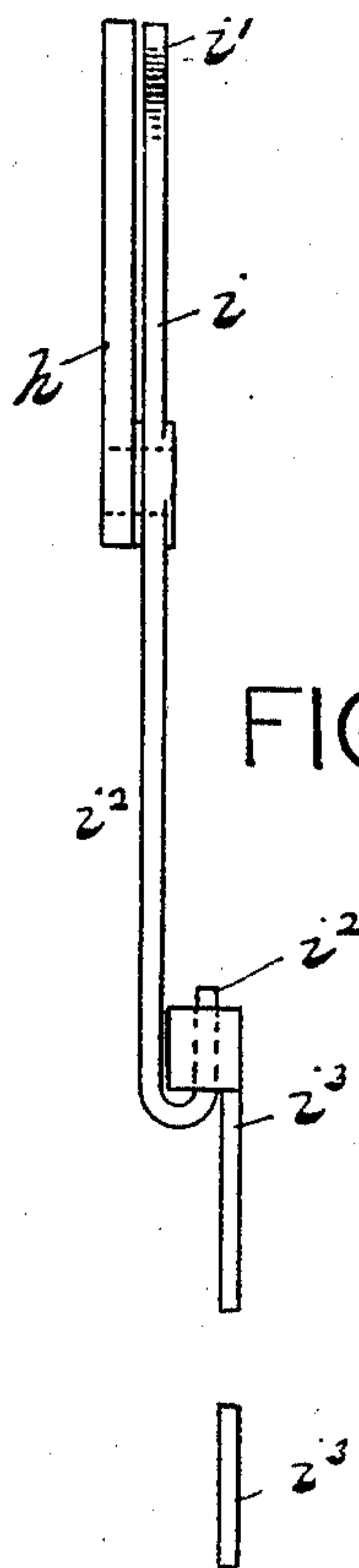


FIG. 4

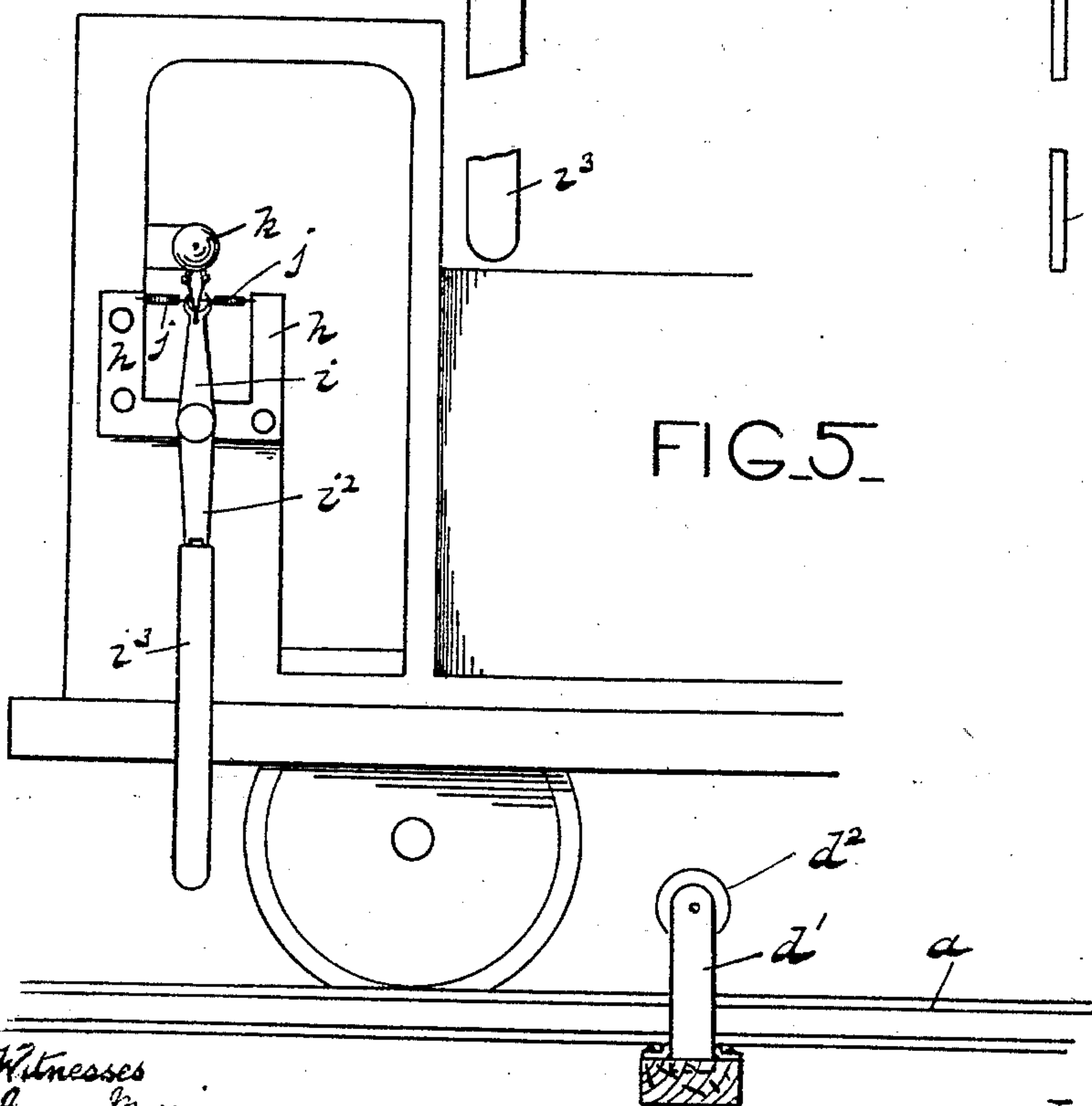


FIG. 5

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UNITED STATES PATENT OFFICE.

JOSEPH HERBERT PLEASANCE, OF EAST HAM, ENGLAND.

RAILWAY FOG SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 717,020, dated December 30, 1902.

Application filed May 31, 1902. Serial No. 109,723. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HERBERT PLEASANCE, a subject of the King of Great Britain, residing at East Ham, in the county of Essex, England, have invented a new and useful Improvement in Railway Fog Signaling Apparatus, (for which I have obtained a patent in Great Britain, No. 8,647, bearing date April 14, 1902,) of which the following is a specification.

This invention relates to improvements in or connected with railway fog signaling apparatus, and has for its object to provide a comparatively inexpensive apparatus which enables a signalman or other operative to acquaint the driver of an engine with the state of the line ahead in foggy weather or at other times.

In order that this my said invention may be the more readily understood and carried into practical effect, reference is hereby made to the accompanying sheet of illustrative drawings, wherein—

Figure 1 is a diagrammatical plan view of a permanent way with that part of my apparatus which is controlled by the signalman in its position to indicate danger. Fig. 2 is a side elevational view thereof. Fig. 3 is a side elevational view of the operating apparatus carried by the engine, shown independently. Fig. 4 is a front elevational view thereof, while Fig. 5 is a side elevational view of a portion of an engine with my operative apparatus applied thereto.

Referring to the drawings, in which like letters of reference indicate corresponding parts wherever occurring throughout all the figures, *a* represents the rails of a permanent way, which rails are preferably carried upon sleepers *b* in the ordinary manner.

Rigidly attached to one of the sleepers *b* a convenient distance from the signal-post *c* I arrange transversely of the rails a bar *d*, the ends *d'* of which are arranged to project vertically to a convenient distance, the upper ends of these projecting ends being preferably provided with loosely-mounted rollers *d''*. A short distance farther on in the direction of traveling I arrange in guides *g*, carried by another of the sleepers *b*, a bar *e*, having vertical projections *e'*, provided with rollers *e''* and being substantially similar in

construction to the bar *d* before mentioned. One of the ends of this bar *e* is, by means of a wire, chain, or other flexible connection *e³* and pulleys *e⁴*, associated with an operating-lever *e⁵* in the signal-cabin. Attached at one end to the bar *e* aforesaid at a convenient point and at the other end to one of the rails or to some other rigid part of the permanent way I arrange a spring *e⁷*. The end of the bar *e* opposite to that to which the flexible connection *e³* is attached is preferably extended slightly and arranged to slide in a socket *e⁵*. At a convenient distance farther on in the direction of travel and preferably a short distance from the ordinary signal-post *c* I arrange a second sliding bar *f* under the control of the signalman or other operative, which bar *f* is of precisely similar construction to the bar *e* aforesaid and is provided with exactly similar fittings and connections.

Carried in a convenient position upon the engine, preferably adjacent to the engine-cab, I arrange a bracket *h*, to which a lever *i* is pivoted in a convenient position. Two preferably india-rubber springs *j*, having looped ends *j'*, are each attached at one of their ends to the upper end *h'* of the said pivoted lever *i*, while the other looped ends *j²* of such springs are attached either to vertical projections of the bracket *h* or to some other fixed point. The lower end *i²* of the lever *i* is bent upwardly to provide for the ready attachment of an extension *i³*. This extension *i³* is so disposed that when the engine upon which it is carried passes the bar *d* it will strike against one of the vertical projecting ends *d'* thereof and also one of the vertical projections upon either the bar *e* or the bar *f*, whichever is in its operative position, as will hereinafter more fully appear.

In operation as the engine carrying the pivoted lever *i* aforesaid passes the rigid bar *d* the lower extension *i³* thereof comes in contact when passing with one of the vertical extensions *d'* thereof, and consequently the said lever *i* is deflected from its vertical position in opposition to the springs *j*. This causes the upper end thereof to pull upon a flexible connection *k'*, attached between it and the lever of a bell *k*. Immediately the lever *i* and its extension *i³* passes the ob-

structing ends d' of the bar the said lever re-
 gains its normal position under the influence
 of the springs j and the bell k is rung, the
 lever thereof flying back to its normal posi-
 5 tion. This notifies the engine-driver that he
 must slow up unless the bell k rings again
 immediately. This will not occur when the
 apparatus is set at "danger," as shown, as the
 sliding bar e will have been drawn over by
 10 the signalmen in opposition to the spring e'
 and the vertical projection thereon will not
 then lie in the track of the lower extension i^3
 of the lever i . The engine-driver will conse-
 quently proceed at a slow speed toward the
 15 signal-post c , and just before reaching it the
 engine will pass the bar f and the lower ex-
 tension i^3 of the lever i will contact with one
 of the vertical extensions f' thereon, thus
 ringing the bell k on the engine in the man-
 20 ner before described. This denotes to the
 engine-driver his duty to immediately stop.
 The driver must not now proceed farther
 until signaled to do so by the signalman.
 This is effected by the ringing of an inde-
 25 pendent bell l under the control of the sig-
 nalman, arranged in a convenient position
 close at hand and capable of being operated,
 preferably, by means of a lever l^3 in the sig-
 nal-cabin, which lever is connected with the
 30 bell, preferably by means of connection l' ,
 working in conjunction with pulleys l^2 . It
 will be understood that if the line is clear the
 bar e will be in its operative position and the
 bar f will be drawn over by the signalman
 35 through the medium of connection f^3 , pul-
 leys f^4 , and levers f^5 in opposition to the
 spring f^7 to a position with its vertical pro-
 jections f' , provided with rollers f^2 , out of the
 track of the lower extension i^3 of the lever i
 40 aforesaid. It will also be understood that
 the rollers d^2 , e^2 , and f^2 are provided to reduce
 friction as much as possible.

The provision of vertical obstructing pro-
 jections in corresponding positions at each
 45 side of the rails insures the operation of the
 device should the engine be traveling back
 to front, or, if desirable, pivoted bell-operating
 levers may be arranged each side of the en-
 gine.

The sockets e^6 and f^6 are provided to limit 50
 the travel of the bars e and f under the in-
 fluence of their springs e^7 and f^7 to insure
 the vertical projections e' and f' always lying
 in the track of the lower extension i^3 of the
 lever i when in their operative positions. 55

What I claim as my invention, and desire
 to secure by Letters Patent, is—

1. The improvements in railway fog signal-
 ing apparatus consisting of a pivoted lever
 having a detachable lower extension said 60
 pivoted lever being carried by a bracket car-
 ried upon an engine and being held normally
 in a vertical position by india-rubber springs
 attached between its upper end and fixed
 points on each side thereof, said upper end 65
 being connected with the lever of a bell car-
 ried by the engine; in combination with three
 obstructions arranged at intervals in the per-
 manent way one of the said obstructions be-
 ing rigidly attached to one of the sleepers 70
 carrying the rails, the other two being capa-
 ble of withdrawal from the track of the op-
 erating-lever carried by the engine; and an
 independent bell in a suitable position under
 the control of the signalman, substantially as 75
 and for the purposes hereinbefore described
 and shown.

2. In railway fog signaling apparatus the
 combination with a pivoted bell-operating le-
 ver carried by an engine; of transverse slid- 80
 ing bars arranged in guides such transverse
 bars having vertical projections at or near
 their ends, the upper ends of such vertical
 projections being provided with loosely-
 mounted rollers, such transverse bars being 85
 at one end connected by suitable means with
 an operating-lever, their other ends being pro-
 vided with extensions arranged to move in
 sockets, the travel of such transverse bars,
 under the influence of controlling-springs, be- 90
 ing limited by such sockets substantially as
 and for the purposes hereinbefore described
 and shown.

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Witnesses:

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