

(No Model.)

3 Sheets—Sheet 1.

J. H. CLAYTON.

MECHANISM FOR OPERATING ROAD CROSSING GATES.

No. 326,275.

Patented Sept. 15, 1885.

Fig. 1.

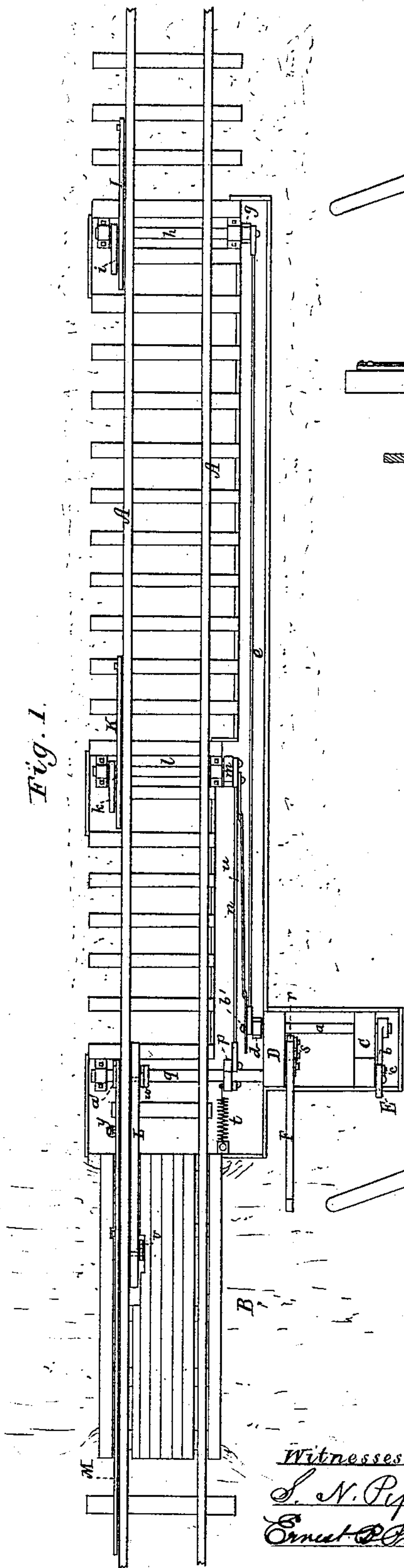


Fig. 6.

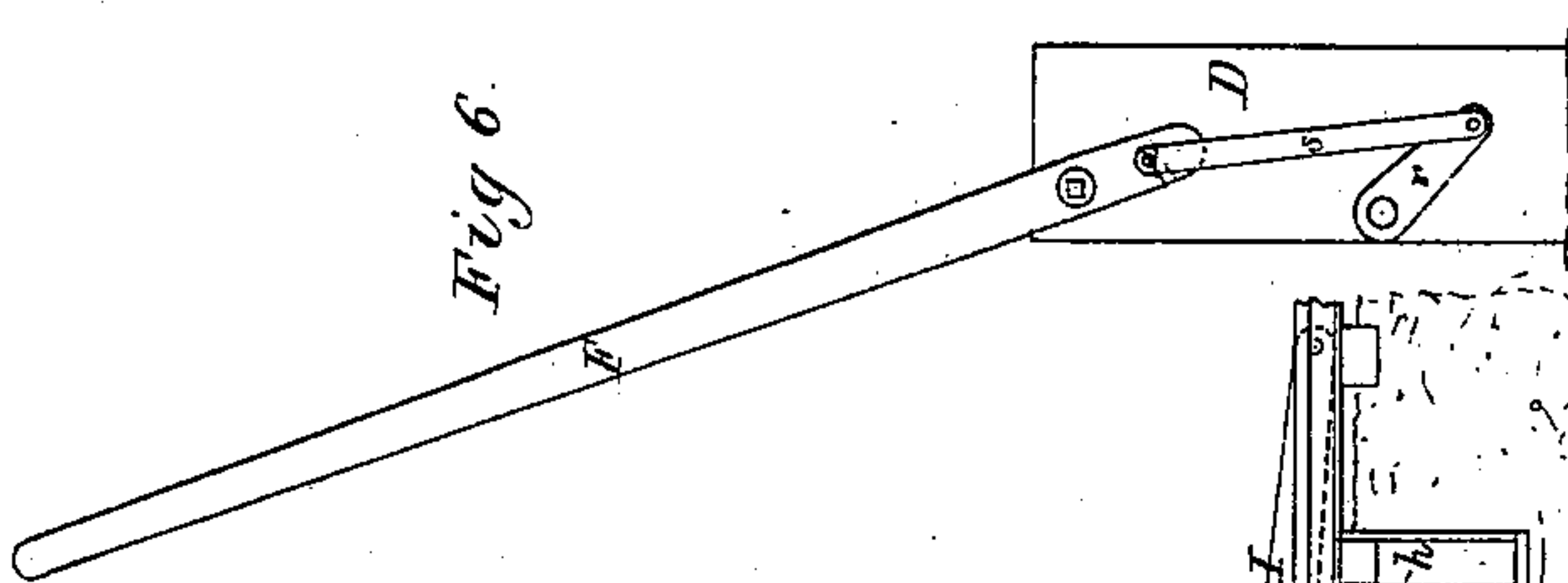


Fig. 5.

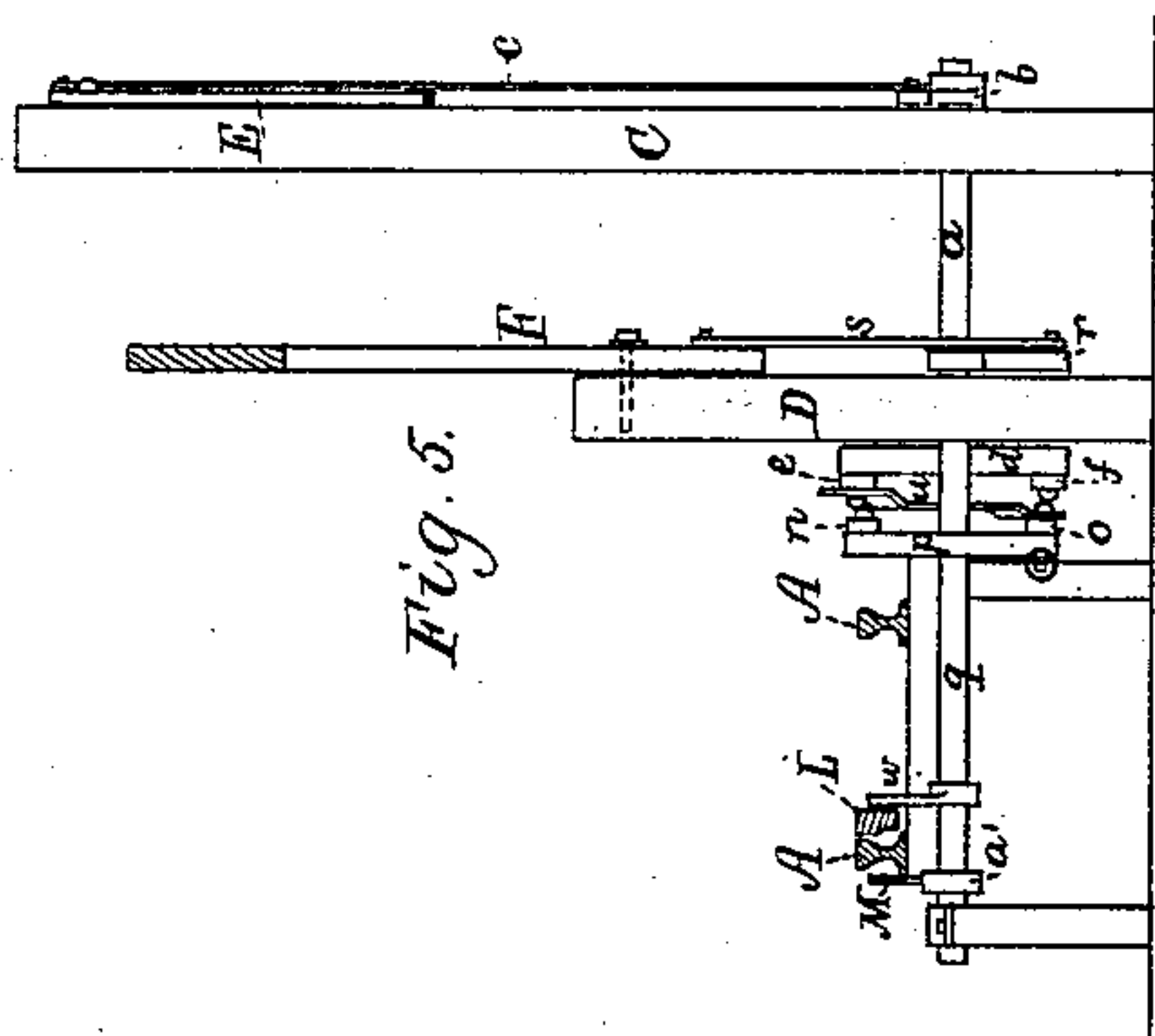
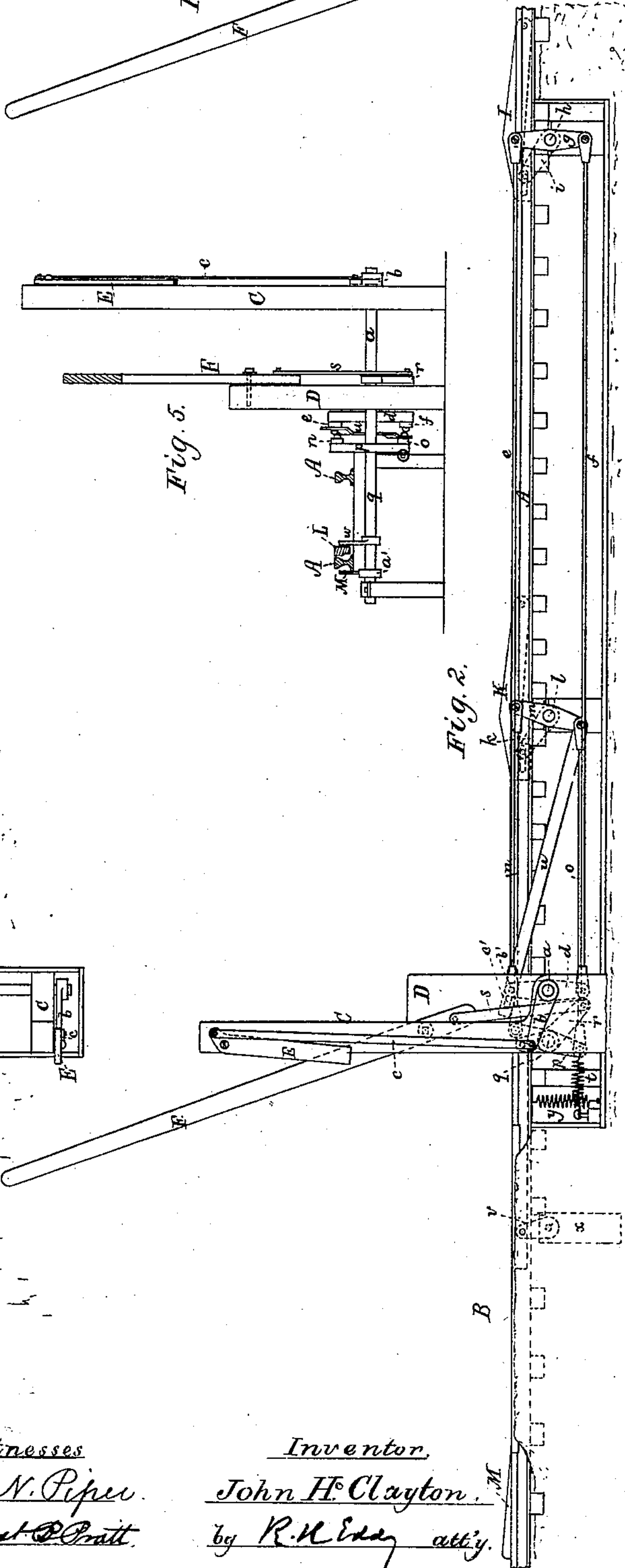


Fig. 2.



Witnesses
S. N. Piper.
Ernest P. Pratt.

Inventor
John H. Clayton.
by R. H. Eddy att'y.

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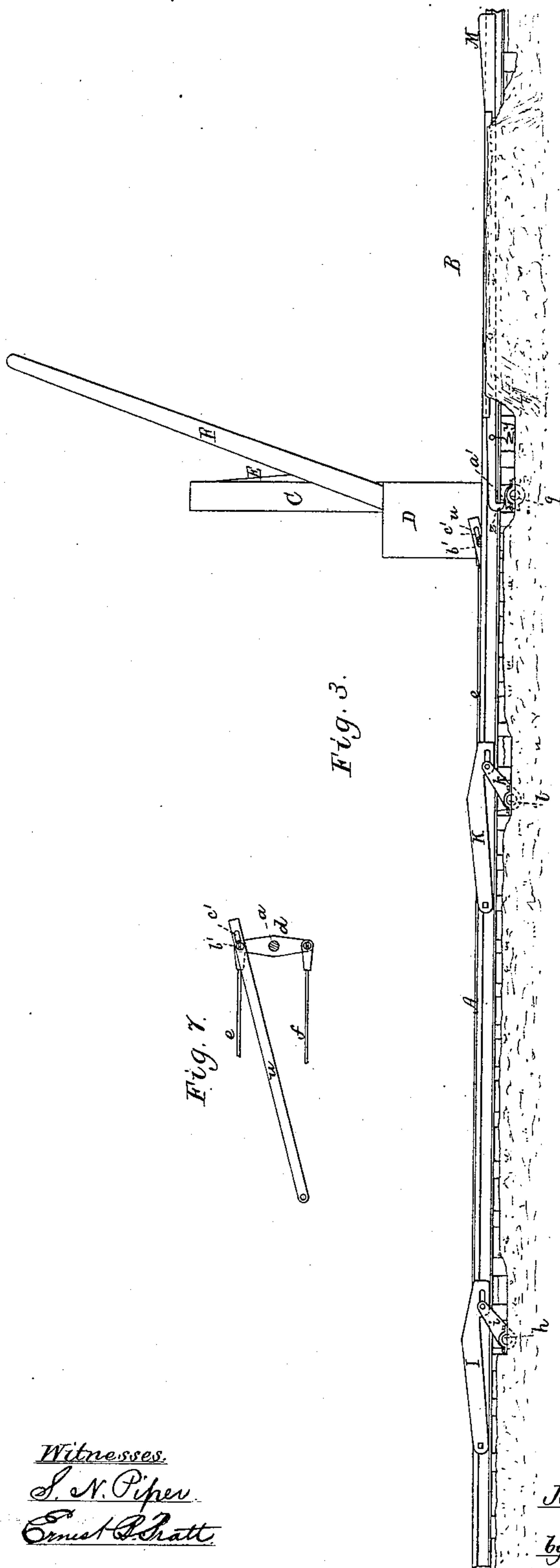


Fig. 3.

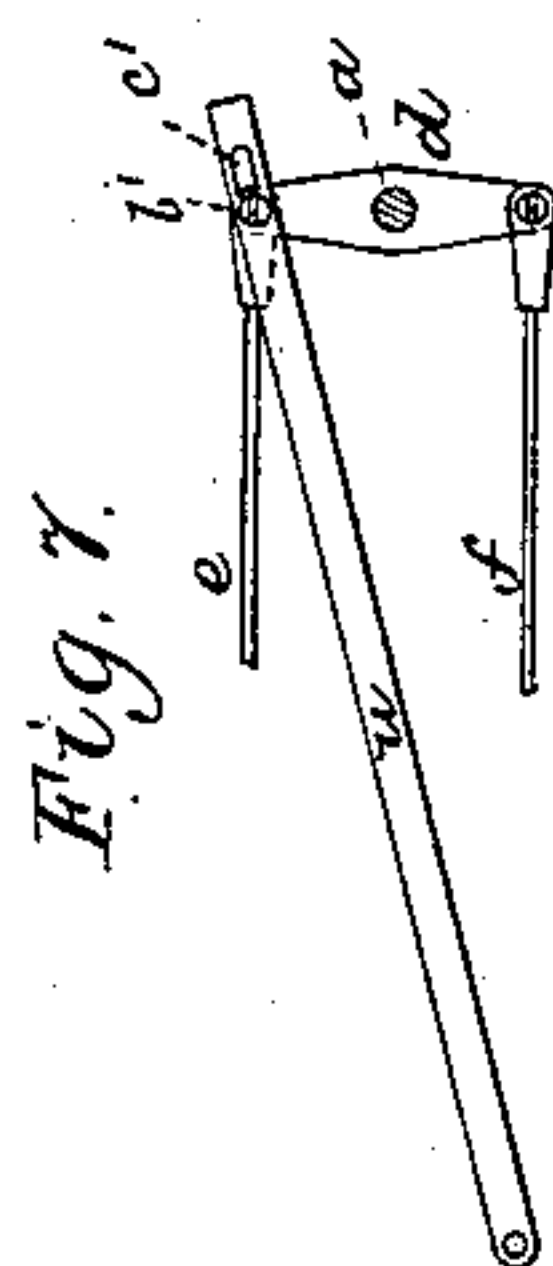
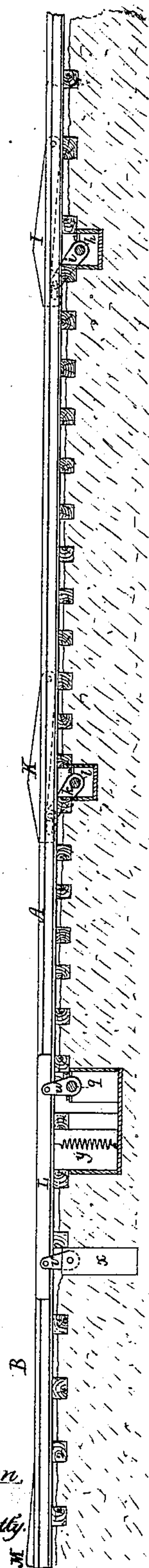


Fig. 1.

Fig. 4.



Witnesses.
S. N. Piper.
Ernest P. Pratt.

Inventor.
John H. Clayton.
by R. H. Eddy atty.

(No Model.)

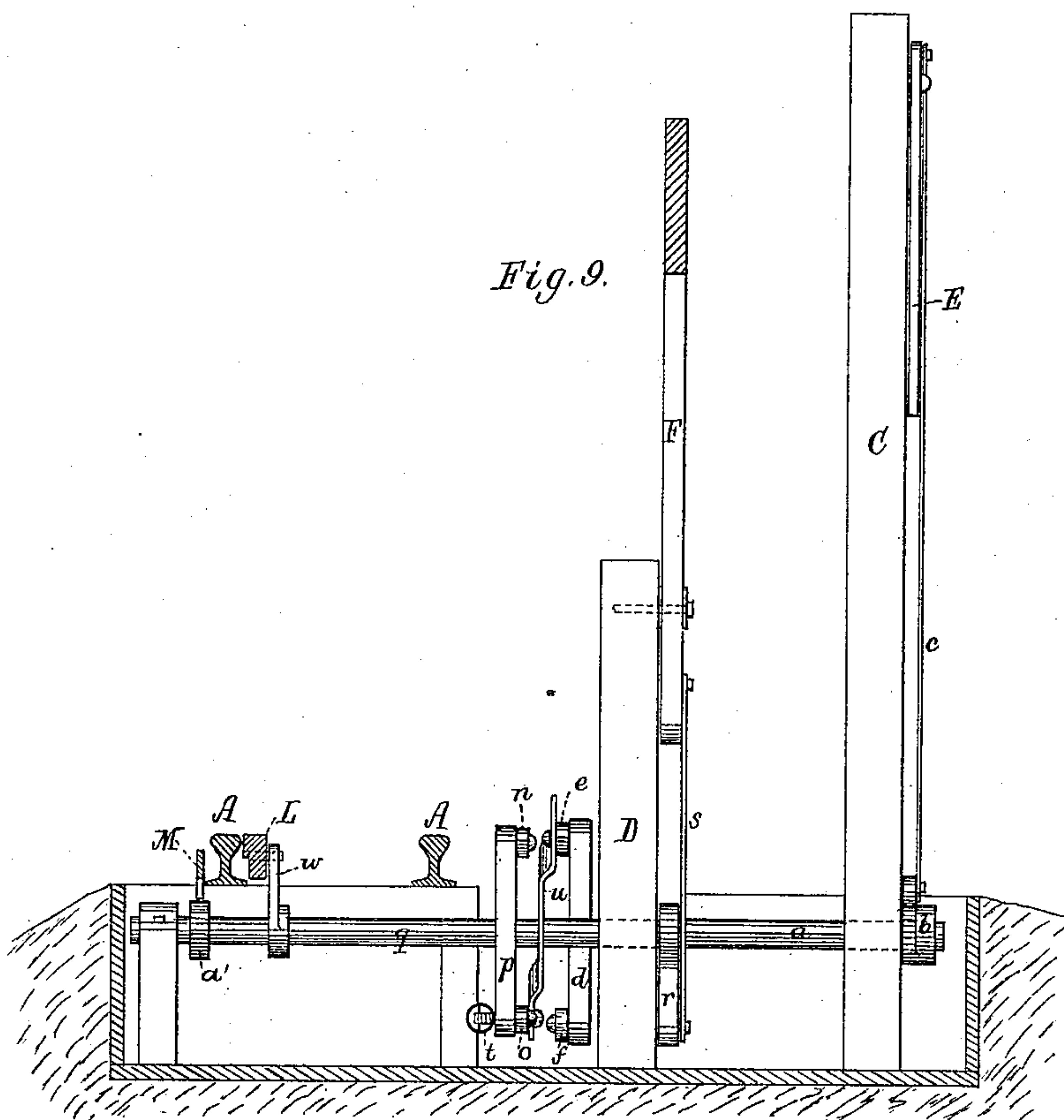
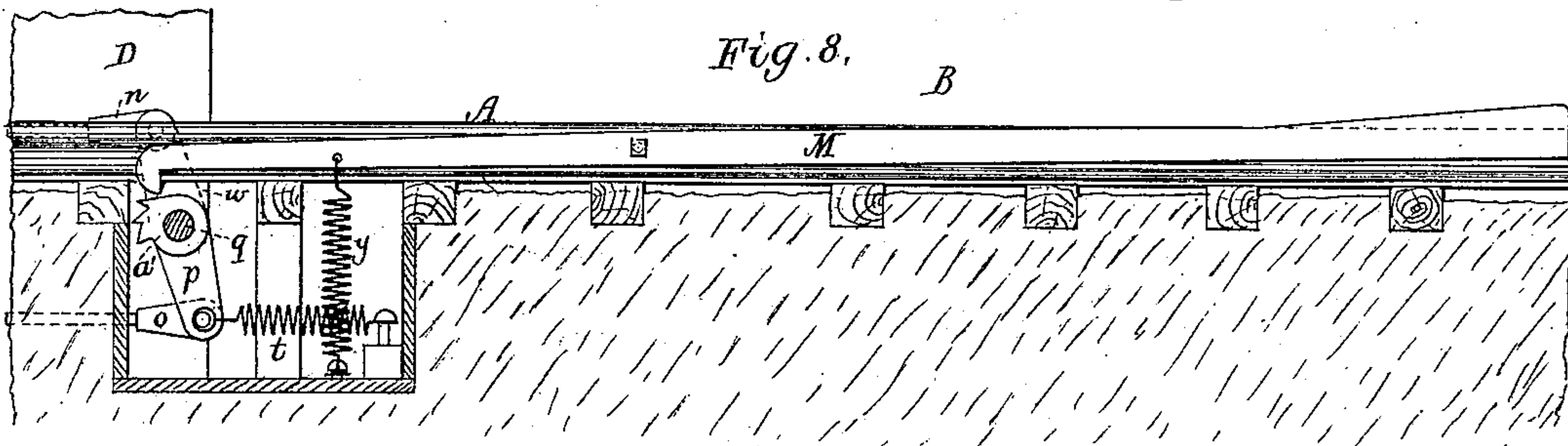
3 Sheets—Sheet 3.

J. H. CLAYTON.

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No. 326,275.

Patented Sept. 15, 1885.



Witnesses.

S. N. Piper

Emuel B. Pratt.

Inventor.

John H. Clayton

by R. H. Lee . atty.

UNITED STATES PATENT OFFICE.

JOHN HORROCKS CLAYTON, OF ST. JOHNSBURY, VERMONT.

MECHANISM FOR OPERATING ROAD-CROSSING GATES.

SPECIFICATION forming part of Letters Patent No. 326,275, dated September 15, 1885.

Application filed December 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN HORROCKS CLAYTON, of St. Johnsbury, in the county of Caledonia, of the State of Vermont, have invented
5 a new and useful Improvement in Mechanism for Operating Road-Crossing Gates and Railway-Signals; and I do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Figs. 2 and 3 opposite side elevations, Fig. 4 a longitudinal section, and Fig. 5 a transverse section, of part of
15 a railway with my invention applied thereto, the nature of such invention being duly defined in the claim hereinafter presented. Fig. 6 is a front elevation of the gate, its sustaining-post, and the operative crank and connecting-link at the lower part of such gate. Fig. 7 is
20 an elevation of the connecting-rod *u* and the levers *d* hereinafter referred to, such figure not only showing the pivot *b'* projecting from the lever, but the slot *c'* in such rod. Fig. 8 is a view showing the lever *M* and the parts
25 co-operating therewith on an enlarged scale. Fig. 9 is a view on an enlarged scale of parts seen in Fig. 5.

My invention is to be applied to a railway at the crossing of it by a common road, and is
30 for the purpose not only of signaling to persons or vehicles on the road when a train may be approaching the crossing, but to close the gate preparatory to the train reaching the crossing, to keep the gate closed while the
35 train may be passing the crossing, and to depress the signal and open the gate as the train may be leaving the crossing.

In the drawings, *A A* denote the track-rails of the railway, and *B* the road-crossing. At
40 the side of the latter are two posts or standards, *C* and *D*, having two levers, *E* and *F*, fulcrumed to them near their upper ends, the front or shorter lever, *E*, being the signal and the longer one, *F*, the gate, which latter should
45 be of a length for it, when horizontal, to extend across the roadway sufficiently to prevent the passage of persons or vehicles across the railway while the signal may be up and a car or train may be moving across the road-
50 way.

A shaft, *a*, extending through and having bearings in its two posts, *C* and *D*, carries at

its front end a crank, *b*, from whose wrist a link or bar, *c*, extends and is pivoted to the shorter arm of the signal *E*. Fixed at its middle on the shaft *a*, at its opposite end, is a
55 short lever, *d*, to whose arms two connecting-rods, *e* and *f*, are jointed, they being extended to another such lever, *g*, fixed at its middle on a shaft, *h*, extending across and below the
60 railway-track, and suitably supported so as to be capable of being turned.

Projecting from the shaft *h* is a crank, *i*, to whose wrist is jointed a pedal, *I*, formed as shown, fulcrumed to and arranged aside of a
65 rail of the track. Between the said pedal *I* and the road-crossing there is another such pedal, *K*, that is also fulcrumed to the track-rail and applied to the wrist of another crank, *k*, projecting from a shaft, *l*, that goes across
70 and under the railway-track. There is fixed at its middle to such shaft *l*, at its front end, a lever, *m*, from whose arms connecting-rods
75 *n* and *o* extend to another such lever, *p*, fixed at its middle on another transverse shaft, *q*. This latter shaft goes through the gate-post
80 *D*. A crank, *r*, fixed on the shaft *q*, couples with the shorter arm of the gate *F* by means of a link, *s*, pivoted to both.

To the lower arm of the lever *p* there is fixed
80 one end of a spiral spring, *t*, arranged as shown, which has its opposite end attached to a post underneath the roadway. Furthermore, there extends from the lower arm of the lever *m* a
85 connecting bar or rod, *u*, which is pivoted to the upper arm of the lever *d*, the pivot *b'* being extended through a slot, *c'*, in the connecting-rod, as shown in Fig. 7.

A third pedal, *L*, arranged within the railway-track and close to one rail at the road-
90 crossing, is supported on the wrists of two cranks, *v* and *w*, one of which is pivoted to a post, *x*, and the other to the shaft *q*.

On the opposite side of the track-rail, at the road-crossing, there is fulcrumed a lever, *M*,
95 whose longer arm projects above the track, and is inclined to the tread of the rail. A spring, *y*, is fixed to the shorter arm of such lever, and operates to pull it down. The said arm has a hook, *z*, to engage with a toothed
100 sector, *a'*, fixed on the shaft *q*.

In approaching the road-crossing a railway-train will successively run over and depress the pedals *I* and *K*. On the first one being

forced down the signal will be raised from an inclined to a horizontal position, and on the second one being depressed, the gate will be moved down across the roadway, and will be held in its horizontal position by the hook of the lever M catching into the toothed sector a' , which will be moved by and with its shaft while the gate is being depressed.

On depression of the second pedal the signal will be depressed into an inclined position, and the first pedal will be raised to its normal position above the track-rail, this being effected by the draft of the connecting-rod u on the lever d , so as to move such lever and cause it to turn its shaft a .

Simultaneously with the depression of the gate the third pedal, L, will be moved down below the tread of the rail, so as to be out of the way of the flanges of the wheels of the train as it may be advancing to act on the lever M.

On the first car of the train reaching and passing over and forcing down the longer arm of the said lever the shorter arm of the lever will be forced upward, so as to disengage its hook z from the toothed sector a' . When this takes place, the spiral spring t , which had previously been extended by the lever p , to which it is attached, will be free to contract, and by its inherent elasticity will do so, and will operate in a manner to cause the gate and the second and third pedals to be raised to their

normal or inclined positions; but such, however, will not take place so long as the train may be running across the crossing, for though the toothed sector may be out of engagement with the hook of the lever M the spring will not be free to operate to move the gate and first and second pedals so long as the wheels of the train may be running over the third pedal, which, being kept by the wheels from rising upward, will cause the gate to be kept in its horizontal position until the train may have entirely passed the said third pedal, which, having taken place, the spring will be free to cause the rise of the gate and the second pedal.

I claim—

The combination, with the railway-track A, the lever-signal E, and gate F, of the three pedals I, K, and L, the spiral springs y and t , the hooked lever M, its toothed sector a' , and mechanism, substantially as described, connecting such pedals, signal, and gate, such mechanism consisting of the shaft a , h , l , and q , cranks b , i , k , r , v , and w , connecting-rods c , e , f , n , o , and u , link s , and the levers d , m , and p , all being arranged with a road-crossing and to operate essentially and for the purposes as set forth.

JOHN HORROCKS CLAYTON.

Witnesses:

R. H. EDDY,
E. B. PRATT.