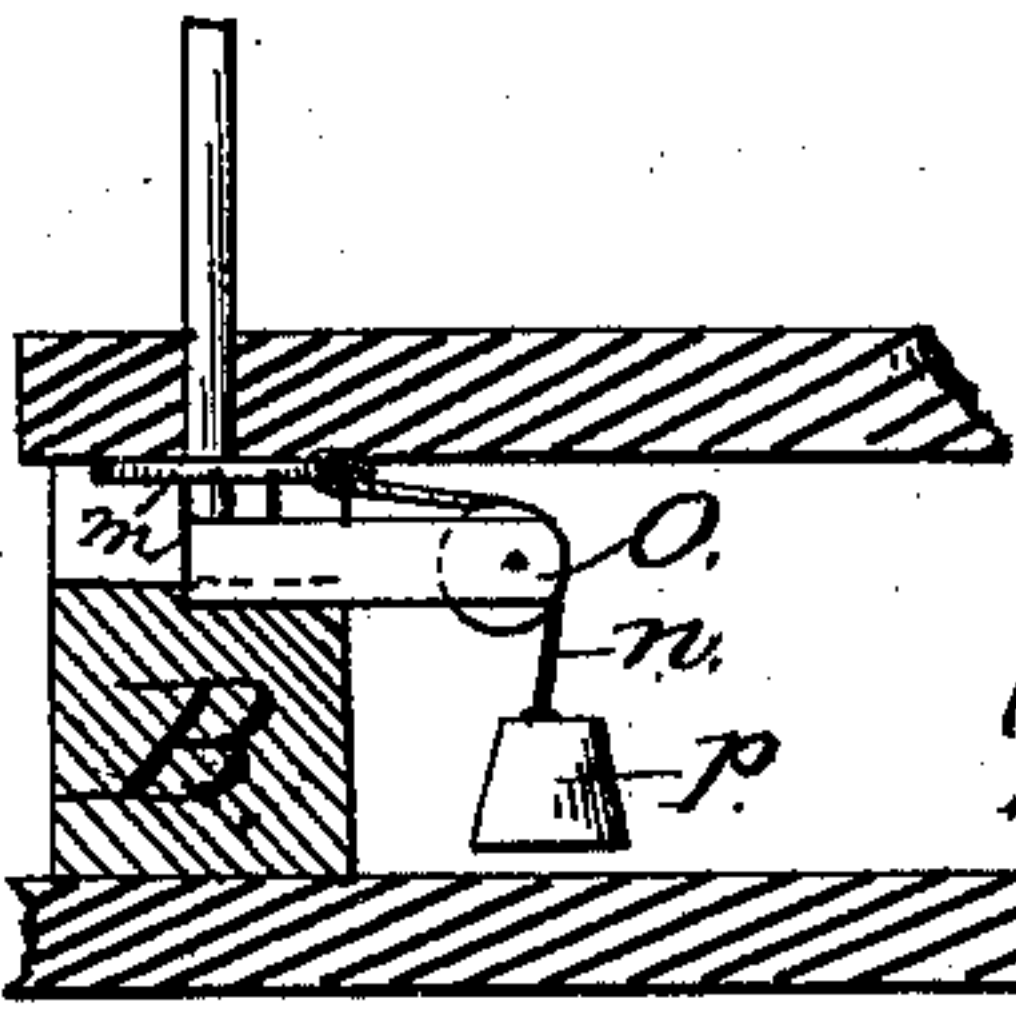
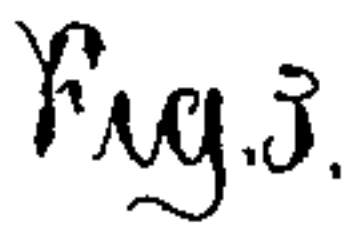
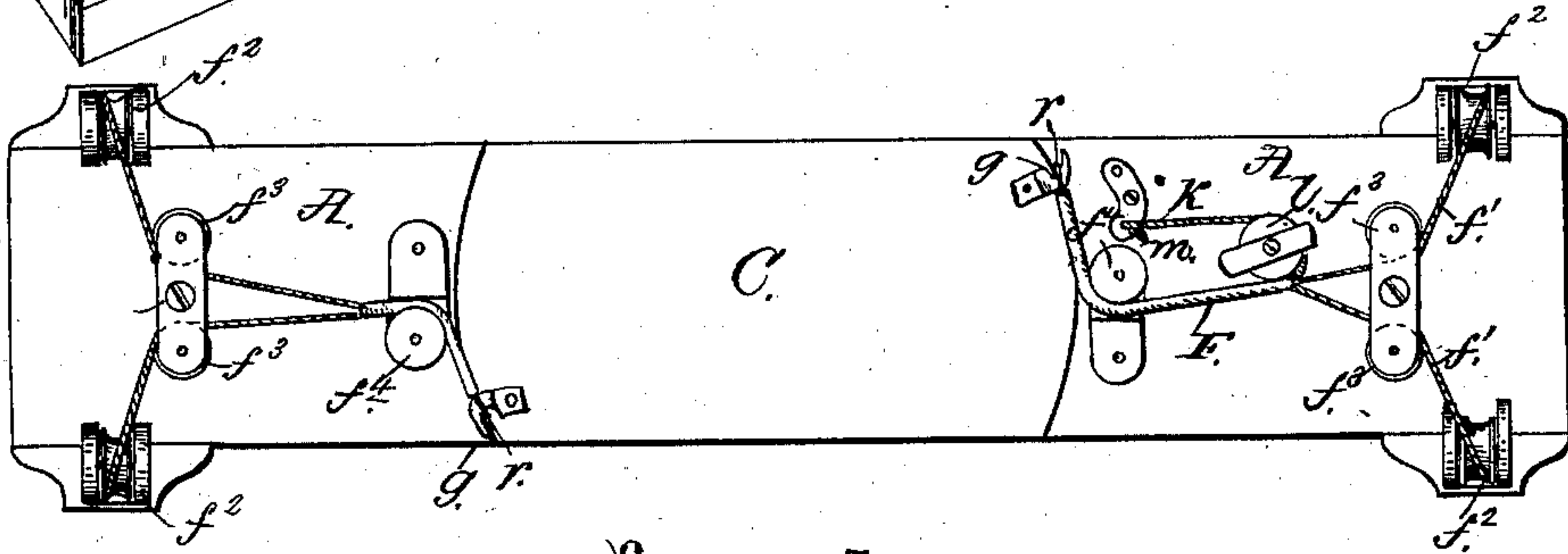
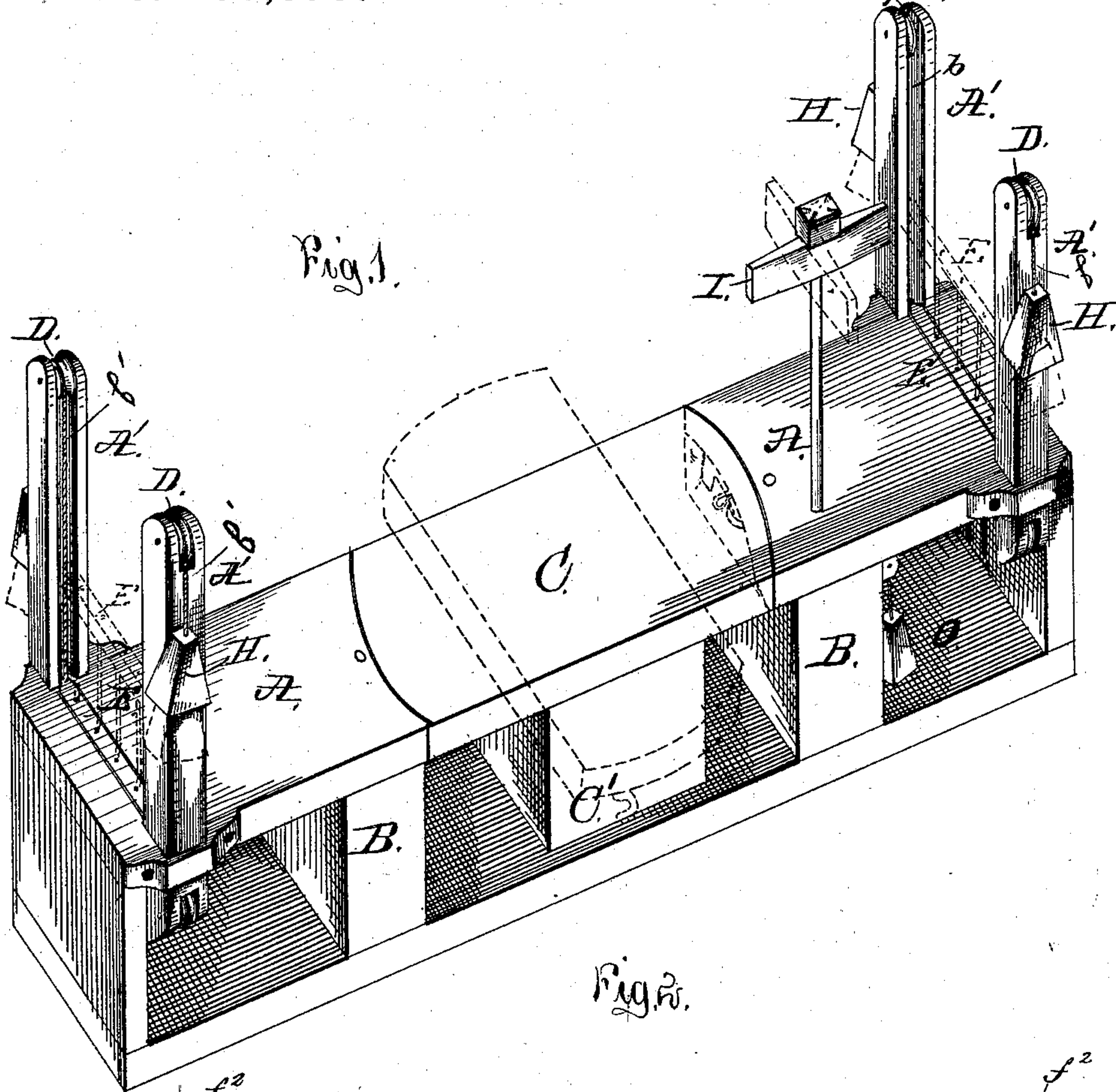


W. A. & H. PRINGLE.
Draw-Bridge Gate.

No. 203,370.

Patented May 7, 1878.



Witnesses;
Walter Fowler
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UNITED STATES PATENT OFFICE.

WILLIAM A. PRINGLE AND HENRY PRINGLE, OF BELLEVILLE, ONTARIO,
CANADA.

IMPROVEMENT IN DRAW-BRIDGE GATES.

Specification forming part of Letters Patent No. **203,370**, dated May 7, 1878; application filed
January 9, 1878.

To all whom it may concern:

Be it known that we, WILLIAM A. PRINGLE and HENRY PRINGLE, of the city of Belleville, of the Province of Ontario, of the Dominion of Canada, have invented a new and useful Method of Operating Safety-Gates for Swinging Draw-Bridges, which is fully set forth in the following specification, reference being had to the accompanying drawings.

This invention belongs to that class of bridges known as "swinging" or "draw" bridges, having safety-gates, which rise from below the roadway, and a shifting signal, which turns with the draw; and our invention consists, mainly, in facilitating the automatic action by which the gates and signal are placed and displaced in conformity with the movement of the draw, as hereinafter more fully described.

In the drawings, Figure 1 is a perspective view, showing the draw closed and the roadway open, the gates being down, and showing also, by dotted lines, the draw open and the gates in position, obstructing the roadway, and the signal shifted. Fig. 2 is a bottom view of the roadway, showing the position of the pulleys, cords, or chains, &c.; and Fig. 3 is a sectional view, showing the weights, &c., which operate the signal.

Similar letters of reference indicate corresponding parts.

A is the upper part of the bridge or roadway. B B are piers, which support the bridge. C is the draw or swinging portion of the bridge, which turns horizontally on pier C'. A' A' are upright posts, in the top of which are placed pulleys D D. The inner side of posts A' A' are provided with grooves, in which gate E is caused to glide in a vertical direction.

The bridge A is provided with a transverse opening between the posts A' A', to allow the gates to be drawn down through the said opening, so that the top of the gate shall be level with the surface of the roadway, thus leaving the roadway unobstructed, which result is accomplished by having two cords, f^1 f^1 , (to which are attached weights H H,) fastened to the ends of gate E at the top, and which pass over pulleys D D; thence down

around pulleys f^2 f^2 ; thence around pulleys f^3 f^3 , and then are connected with the belt F, which thence passes pulley f^4 , where it, the said belt, is provided with an eye, r .

In closing the draw C the hook g passes into the ring or eye r , drawing the belt F and the cords or chains, &c., (the movement being facilitated by the pulleys named,) so that, when the draw C is entirely closed, the gate E is entirely below the level of the roadway, leaving the same unobstructed.

When the draw C is being opened the hook g passes out of the ring or eye r , thus releasing the pull on the belt F, and allowing weights H H to draw the gate E up to its proper height, by means of the attachments before specified, thus obstructing the roadway to prevent accidents.

The signal I is also operated by the same automatic means, namely: A cord, K, is attached to the belt F, and thence passes around pulley l , and then is attached to one end of the lever m , which is secured to the lower end of the signal support. To the other end of the lever m is attached a cord or chain, n , (see Fig. 3,) which passes over pulley O, and then is attached to weight P.

When the belt F is pulled, by closing the draw C, as before described, it causes a pull on the cord K, which shifts lever m , and with it the signal I, indicating that the draw is closed; and when the belt F is released, and the pull on the cord or chain K is thereby slackened, the weight P descends, and, by means of a cord or chain, n , shifts the lever m , and with it the signal, back to its former position, indicating that the draw is open.

It is obvious that the signal may be provided with lights, or otherwise arranged in any suitable manner.

It will also be seen that similar gates and operating devices may be placed on each side of the draw C, while the signal may be placed on one or both sides, as desired.

It will be observed also that the gates will remain up until the draw is almost closed, and that they will rise to their requisite height when the draw has only moved a few feet in its outward course.

Having thus described our invention, we

claim as new and desire to secure by Letters Patent—

1. The belt *F*, provided with eye *r* and cords or chains *f*¹ *f*¹, attached to gate *E*, in combination with suitable pulleys and counter-weights *H*, and hook *g*, substantially as described, and for the purpose set forth.

2. The belt *F*, provided with eye *r* and cord or chain *K*, attached to lever *m* of signal *I*, in combination with cord or chain *n* and pulley *O* and counter-weight, and with hook *g*, sub-

stantially as described, and for the purpose set forth.

3. The hook *g*, in combination with the draw *C* and the eye *r*, as and for the purpose indicated.

WILLIAM ALLEN PRINGLE.
HENRY PRINGLE.

Witnesses:

HARVEY FOWLER,
GEO. F. GRAHAM.