

(No Model.)

J. F. RIETHMAYER.  
SIGNAL.

2 Sheets—Sheet 1.

No. 345,862.

Patented July 20, 1886.

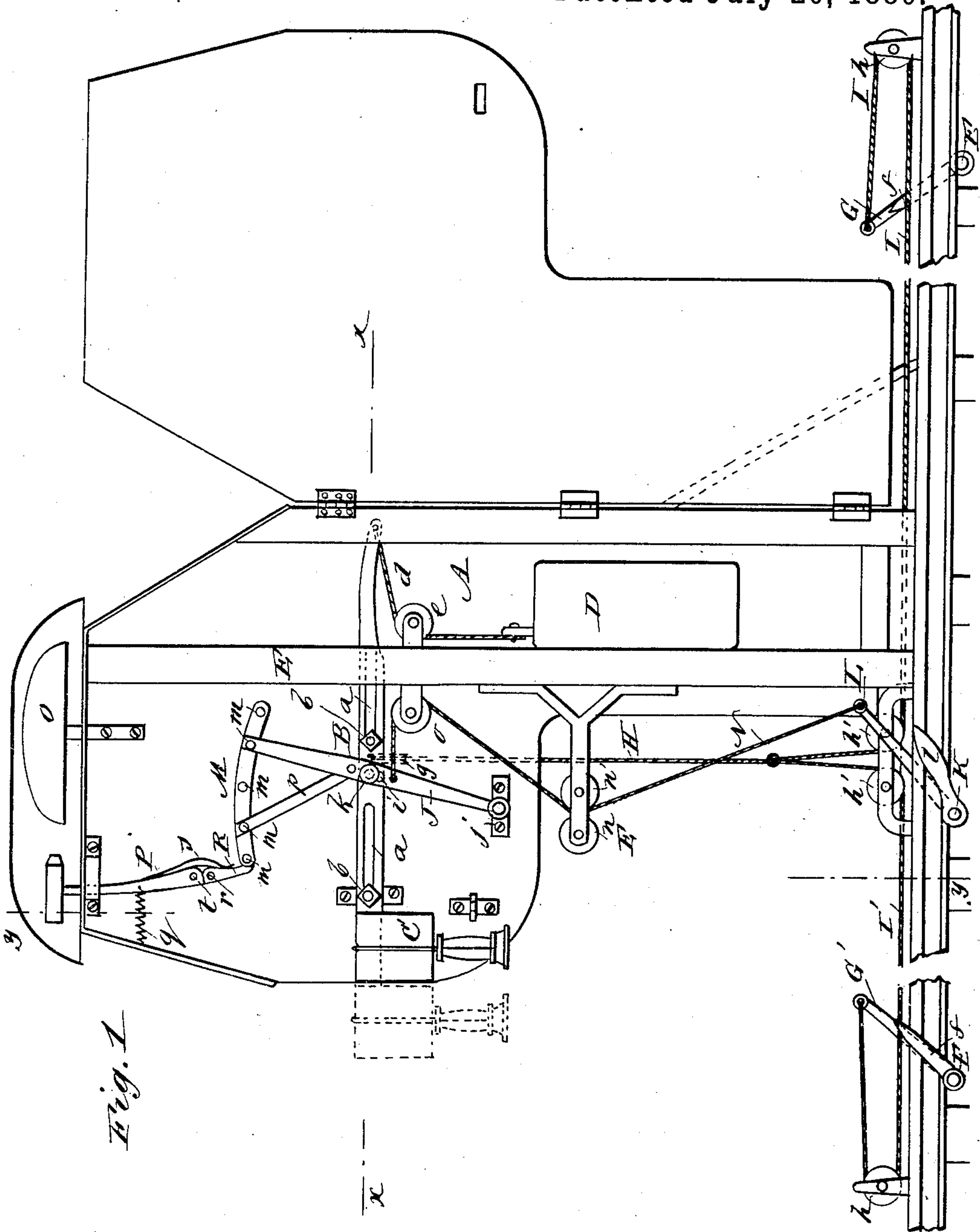


Fig. 1

WITNESSES:

*C. Naveux*  
*C. Sedgwick*

INVENTOR:

*J. F. Riethmayer*  
BY *Munn & Co.*  
ATTORNEYS.

(No Model.)

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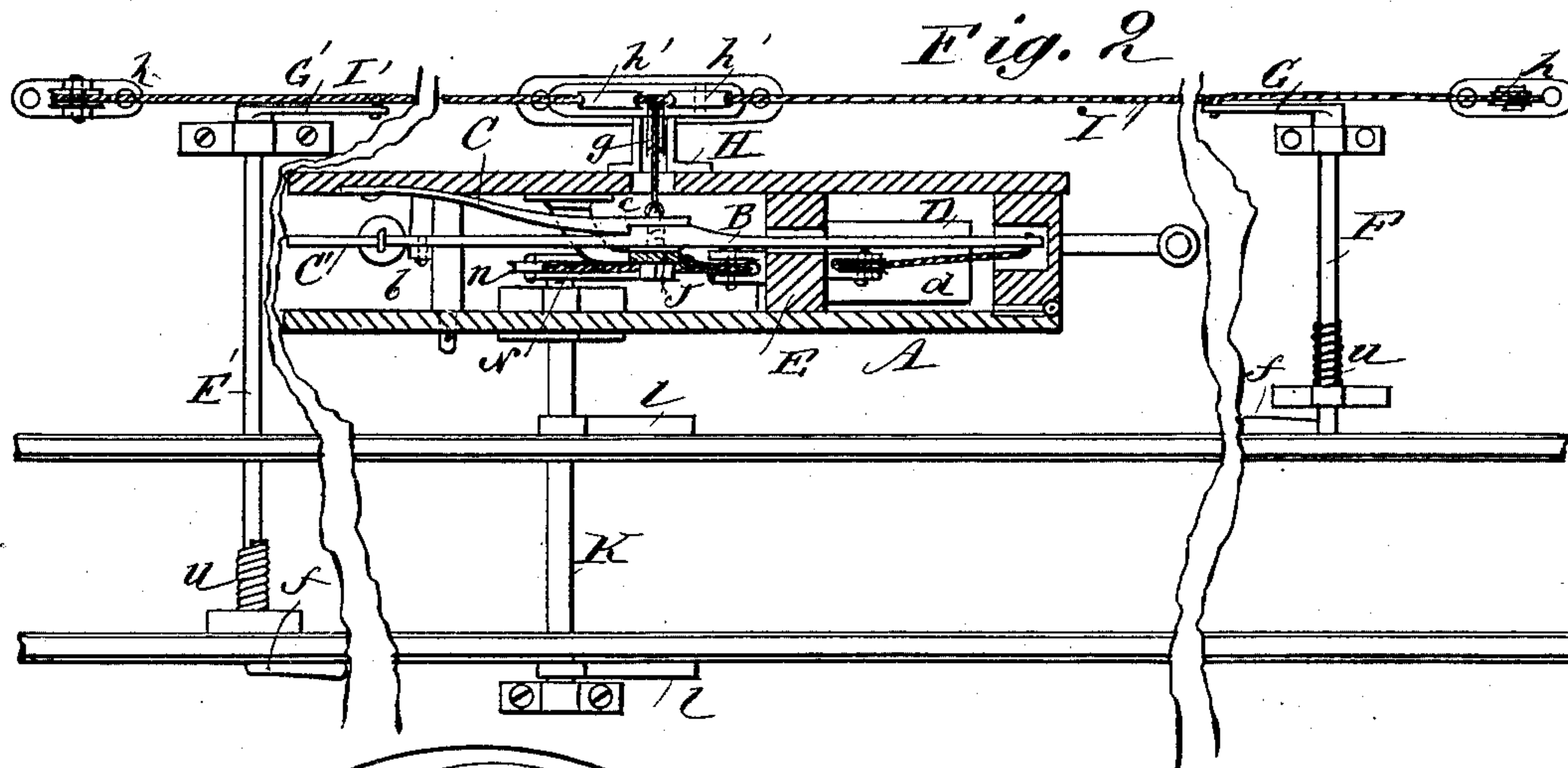


Fig. 3

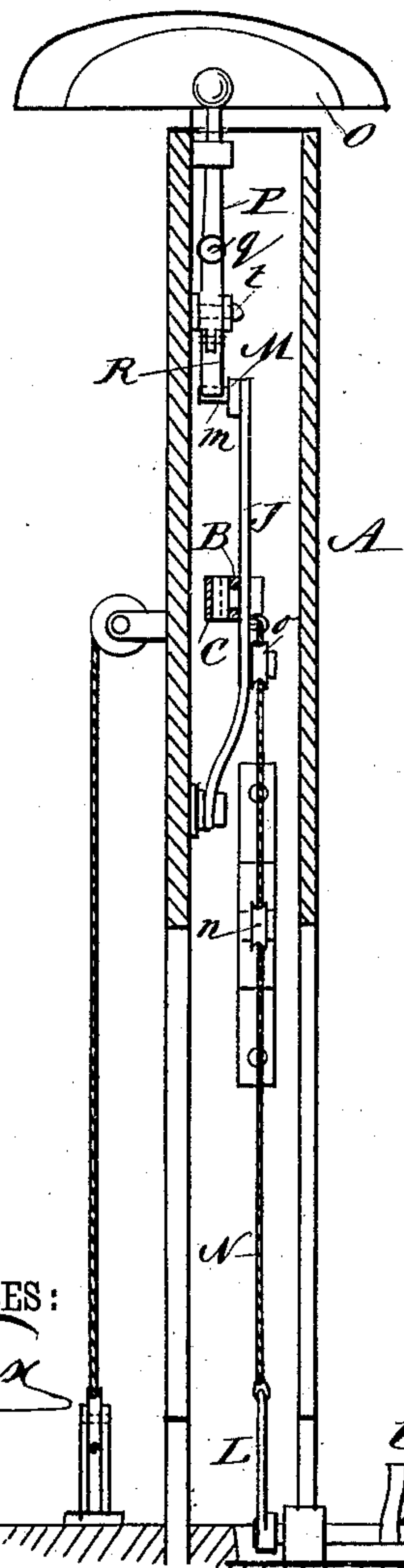


Fig. 4



WITNESSES:

C. Neveu  
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INVENTOR:

J. F. Riethmayer  
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# UNITED STATES PATENT OFFICE.

JACOB F. RIETHMAYER, OF LANSDALE, PENNSYLVANIA.

## SIGNAL.

SPECIFICATION forming part of Letters Patent No. 345,862, dated July 20, 1886.

Application filed April 28, 1886. Serial No. 200,439. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB F. RIETHMAYER, of Lansdale, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Signal, of which the following is a full, clear, and exact description.

My invention relates to the construction of a mechanism designed to sound an alarm and display a warning flag or light upon the approach of a train; and to the end named the invention consists of a bar carrying a flag or light and normally held within a casing by a spring-catch, but so arranged as to be moved forward by the action of a weight when the catch is withdrawn by a tripping mechanism actuated by the train; and the invention further consists of a bell and its hammer and a rack carrying pins, the parts being so arranged that an alarm will be sounded at the time the visible signal is displayed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of my improved signal, the door of the case being thrown back to disclose the construction of the operating mechanism. Fig. 2 is a sectional plan view taken on line *xx* of Fig. 1. Fig. 3 is a sectional elevation taken on line *yy* of Fig. 1, and Fig. 4 is a detail view illustrating the construction of the segmental pin-rack by which the bell-hammer is moved.

In constructing such an apparatus as is illustrated in the drawings above referred to, I provide an inclosing case or box, A, that is located at the intersection of the railroad and a highway, and in this box A, I mount a sliding bar, B, upon one end of which there is arranged a flag, C', the bar being formed with slots *a*, through which there are passed bolts *b b*, by which the bar is upheld. Upon one face of the bar B there is a shoulder, *c*, that normally rests against a spring-catch, C, said catch being secured to the side of the casing A. To the inner end of the bar B there is secured a wire rope or chain, *d*, which passes forward from its point of connection with the bar to and over a sheave, *e*, that is fixed to the vertical post E of the casing A, and to the lower end of this rope *d* there is suspended a heavy weight, D, the tendency of which

is to force the bar B forward and out of the case.

In order that the catch C may be withdrawn from engagement with the shoulder *c*, I arrange rock-shafts F F' beneath the rails at points upon either side of and at quite a distance from the signal. These shafts F F' are each provided with a tripping-arm, *f*, which projects upward to a point above the tread of one of the track-rails, the arms being outside of the rails, as shown, and being normally upheld by springs *u u*.

In addition to the arms *f*, the shafts F F' are provided with lever-arms G G', and these arms G G' are connected by chains or ropes I I' to a rope or chain, H, the upper end of which is secured to the catch C, and passes from the catch out over a sheave, *g*, as clearly shown in the drawings, the chains or ropes I I' passing from the lever-arms to and around sheaves *h h*, located beyond the shafts, and then forward along the line of the track to other sheaves, *h' h'*, and then up to the rope or chain H.

From the arrangement described it will be seen that if the arm *f* of either of the shafts F F' is depressed by the flanges of the wheels of an approaching train the lever-arm G or G' will act through the medium of the connecting chains or ropes to draw out the catch C, and as soon as such catch is withdrawn from engagement with the shoulder *c* the weight D will be free to fall, and in so falling will force out the bar B, and thus display the flag or light carried by the said bar.

It is necessary that the signal should be withdrawn after the train has reached or passed the highway, and to meet this requirement I provide a lever, J, the lower end of which is pivotally connected to the casing by means of a bracket, *j*. In this lever J there is an elongated slot, *i*, through which a bolt, *k*, extends, said bolt projecting outward from and being rigidly fixed to the bar B. Just opposite the point at which the signal is located there is a third rock-shaft, K, provided with tripping-arms *l l*, which when the catch C is in engagement with the shoulder *c*, are just on a level with the heads of the rail and with a lever-arm, L, which is fixed to the shaft just beneath the signal, the said lever L being connected to the lever J by a chain or



rope, N, which passes over guiding-sheaves *n*, *n'*, and *o*, as clearly shown. Now, when a train has tripped the mechanism employed to display the signal, the arms *l l* will be raised 5 above the treads of the rails, and when struck by the train will be depressed to their normal position, and in being so moved will carry the lever L to such a position that the bar B will be forced within the casing A, so that the 10 catch C and shoulder *c* will once more become engaged.

In order that an audible as well as a visible signal may be displayed, I arrange a segmental rack, M, which carries pins *m m*, upon the up- 15 per end of the lever J, said rack being strengthened and supported by a bracing-bar, *p*, arranged as shown.

Upon the top of the casing there is a gong or bell, O, and its hammer P is pivotally con- 20 nected to the case A at *t*, as best shown in Fig. 1. The hammer P is normally held in the position shown in Fig. 1 by a spring, *q*, and is provided with a short arm, R, which extends downward into the path of the pins *m* 25 *m*, the arm R being connected to the hammer P by a hinge-joint, *r*, and held extended, as shown, by a spring, *s*, so that when the bar B, with its pin or pins *m*, is being forced out- 30 ward and the lever J is moving forward the arm R will act to throw the hammer against the bell and so sound an alarm by one or more strokes. When the lever is moving back- 35 ward, the arm R will simply move upon its hinge-connection with the hammer, and the hammer will not be moved.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an alarm-signal, the combination, with 40 a visible signal carried by a sliding bar, of a

weight connected to said bar by a chain or rope, a guiding-sheave arranged in advance of the point of connection between the bar and chain, a spring-catch, and a tripping mechanism, substantially as described. 45

2. In an alarm-signal, the combination, with a visible signal carried by a sliding bar, of a weight connected to said bar by a chain or rope, a guiding-sheave arranged in advance of the point of connection between the bar and 50 chain, a spring-catch, a rock-shaft having a tripping-arm and a lever, a chain leading from said lever to the spring-catch, and guiding-sheaves, substantially as described.

3. In an alarm-signal, the combination, with 55 a visible signal carried by a sliding bar, of a weight connected to said bar by a chain or rope, a guiding-sheave arranged in advance of the point of connection between the bar and chain, a spring-catch engaging with the sliding 60 bar, a rock-shaft having a tripping-arm and a lever-arm, a chain leading from said lever to the spring-catch, connecting chains or ropes and guiding-sheaves arranged as described, a lever, J, cord or chain N, shaft K, having trips 65 *l l* and a lever, L, and guiding-sheaves over which the rope or chain N passes, substantially as described.

4. The combination of a sliding bar carrying a visible signal with a weight, D, a connecting 70 rope or chain, *d*, a sheave, *e*, a spring-catch, C, and a tripping mechanism, a lever, J, a rack, M, having pins *m m*, and a bell and its hammer, whereby an audible signal is sounded at the time the visible signal is displayed.

JACOB F. RIETHMAYER.

Witnesses:

L. M. DAVIS,  
O. M. EVANS.