

(No Model.)

W. C. BECKWITH.

RAILROAD SIGNAL.

No. 277,200.

Patented May 8, 1883.

Fig. 2.

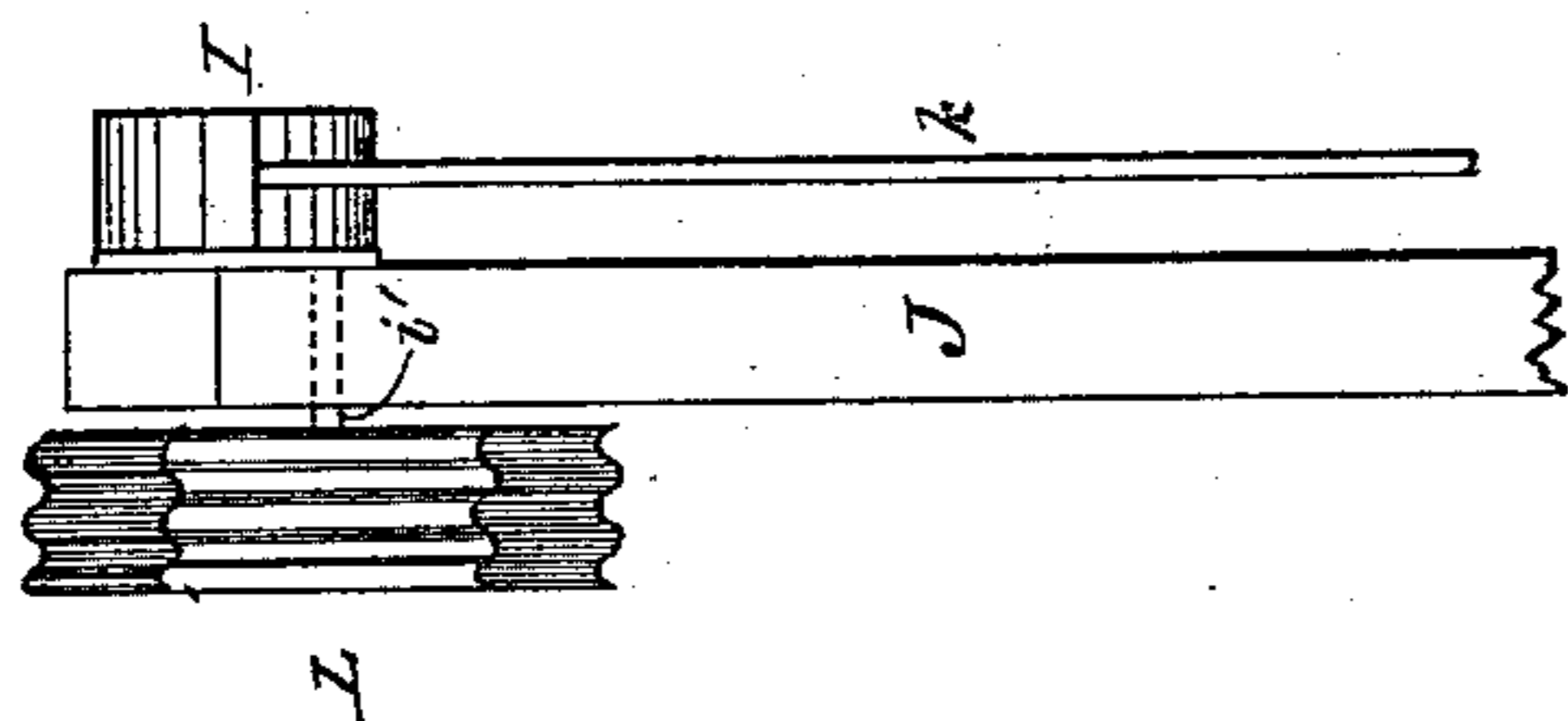
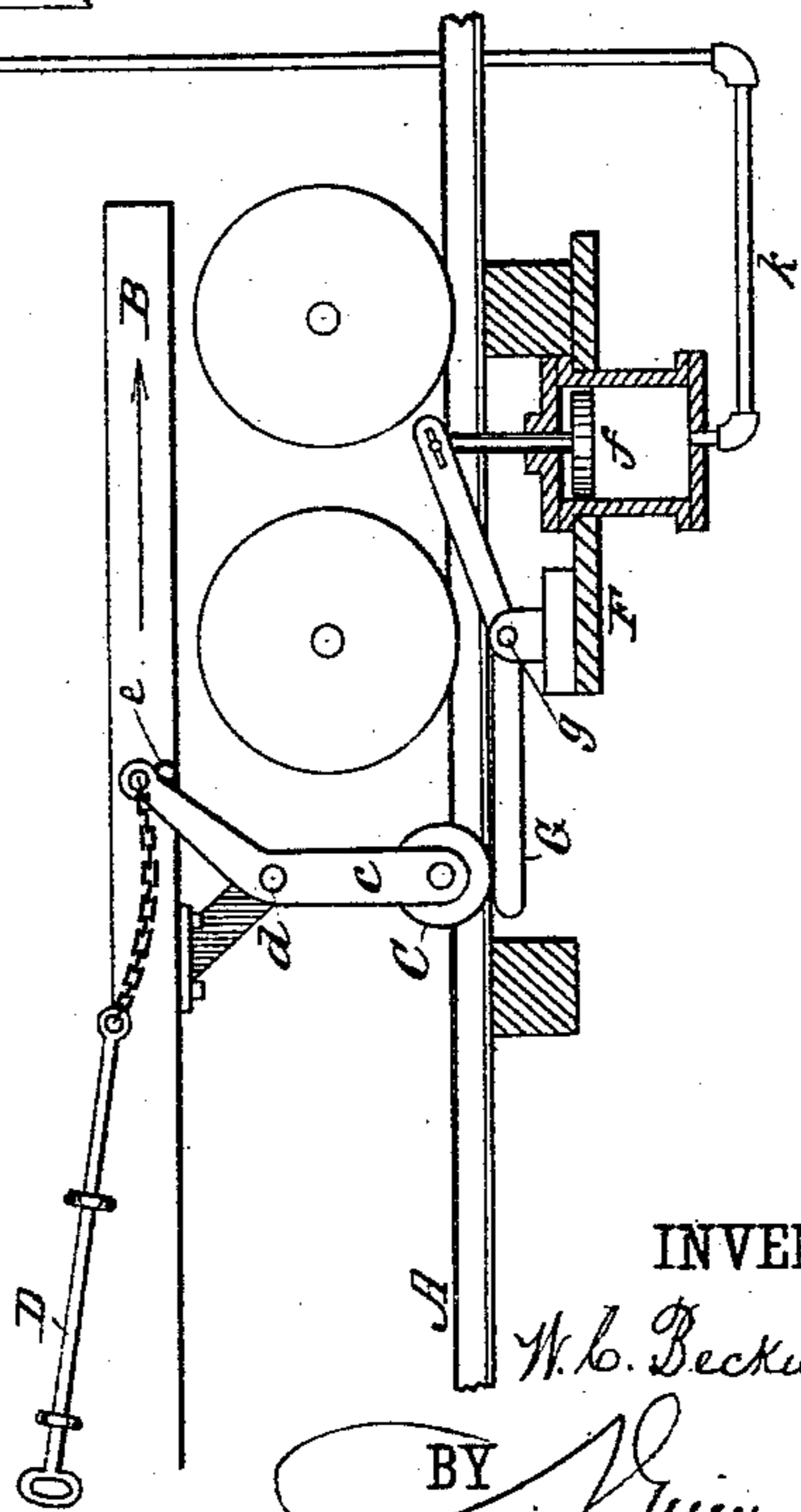
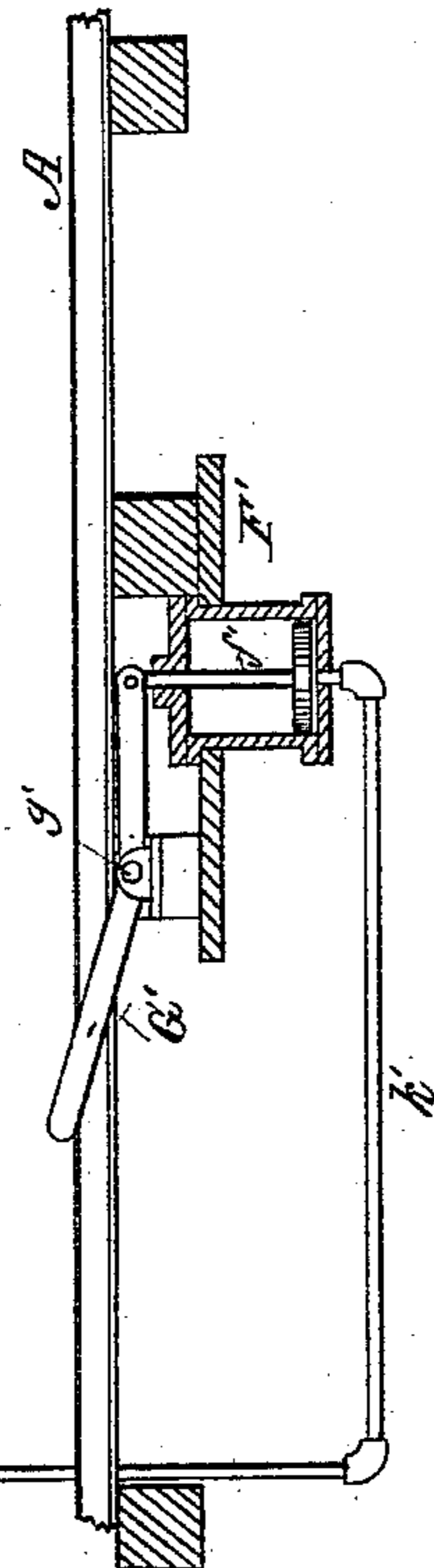
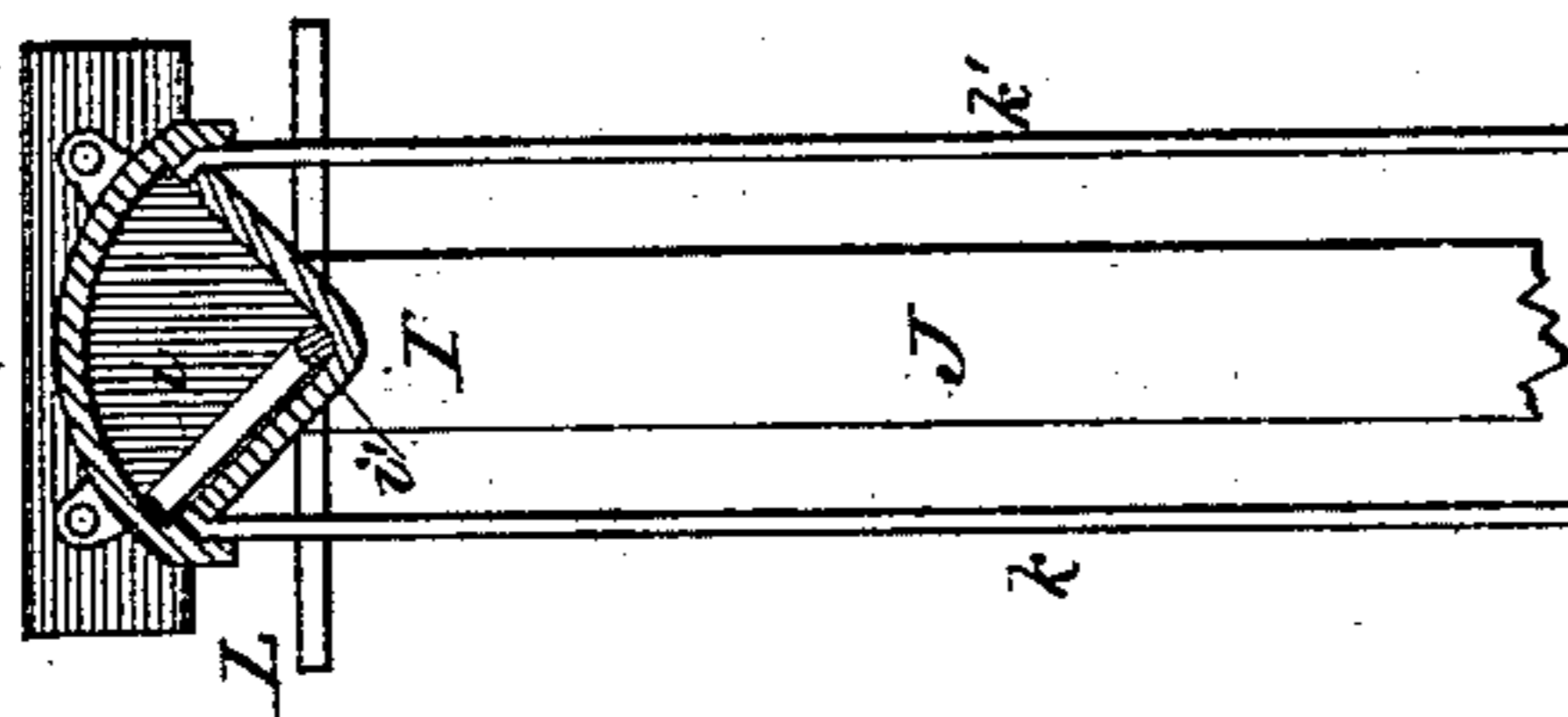


Fig. 1.



WITNESSES:

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WALTER C. BECKWITH, OF NORWALK, OHIO.

RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 277,200, dated May 8, 1883.

Application filed December 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, WALTER C. BECKWITH, a citizen of the United States, residing at Norwalk, in the county of Huron and State of Ohio, have invented a new and Improved Railroad-Signal, of which the following is a specification.

My invention relates to that class of railroad-signals in which a vane, gong, or other signal is operated by the action of an approaching engine when at a considerable distance from the signal; and it consists in the construction and combination of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, part in section, of a portion of railroad and part of an engine, showing my invention without regard to proportion of parts; and Fig. 2 is an end elevation of a portion of the same at the signal-post.

A represents a rail of the railroad; B, an engine provided with a roller or wheel, C, hung in an arm, *c*, centrally between the tracks. This arm *c* may swing on its supporting-pin *d* by means of the hand-rod D, carrying the roller C forward and up, so as to elevate the roller out of service, and it may be so held by means of a pin, E, over which the loop of the handle D may be hooked. Two air-cylinders or other air-pumps, F F', are placed in the road-bed between the rails at points from which the approaching engine is to operate the signal to give warning of its entrance on the signal-section. The piston *f* or *f'* of each pump is operated by a double lever, G or G', fulcrumed midway upon a pin, *g* or *g'*. These levers are bent at the fulcrum, as shown, in order that when one end is depressed the other end rises. These levers G G' are midway between the rails in the path of the roller C. *k k'* are pipes for conveying air from the cylinders F F' to the air-chest I, mounted on the signal-post J. This air-chest is a quadrant of a cylinder provided with a piston, *i*, journaled upon an arbor, *i'*, to vibrate by the action of air entering the chest through the pipes *k k'*. Upon the shaft *i'* a vane, L, is mounted to oscillate therewith, serving as the signal proper. When the vane is horizontal it presents a mere line to view; but when vertical it exposes its broad side.

In operation the lever G is tilted by the roller C on the engine as it enters the section.

This operates piston *f* to drive air through pipe *k* into the air-chest I, forcing piston *i* over to the right, thus setting the vane L in a vertical position. The same impulse expels air from the right of the chest I through pipe *k'* into cylinder F' and raises its piston *f'*. When the engine passes off the section it tilts lever G, thrusting its piston down and forcing air back into chest I, tilting its piston to the left and dropping the vane, at the same time forcing air back into cylinder F and elevating its piston *f*. In their positions of rest piston *f* is up and piston *f'* is down, as shown, each following the movement of the other by means of air communication, as stated. When an engine comes onto the section from the right it raises piston *f'* and operates the pistons *i* and *f* by suction, and sets the vane by tipping its piston to the right by suction, as it was before done by pressure. When the engine leaves the section at the left it raises piston *f* and restores the other pistons to their normal position by suction. Levers G G', being each two-ended, will always have one end raised. The lever *c*, in which the roller C is hung, is adapted by means of a fixed pin, *e*, against which it abuts, to stand rigidly against anything upon which roller C approaches going forward; but it is free to swing forward when it strikes anything in backing. The hand-rod D is connected to lever *c* by a chain, to prevent the rod from being driven back by the lever to prevent danger to the engineer. This rod may be drawn by the engineer, as before stated, to allow roller C to pass over levers G G' without operating the signal. I provide the vane L with corrugated reflecting-surfaces, to reflect the head-light of the approaching engine in the night. By means of said corrugations the reflector will be made luminous at every angle. The edges of the vane may be painted red or any other color desired. A vane may be adapted to be exposed by rising from concealment or by raising the concealing-shield, or a gong may be sounded by the action of the air-piston. I do not confine myself to the use of the particular cylinders or air-chest described, for I may adopt any other device for communicating motion from the engine to operate the signal by means of air in pipes, such as pumps, bellows, &c.

I am aware that an air-pump and an air-re-

ceiving chamber have before been used to operate railroad-signals—as, for instance, in Patent No. 147,692—and I do not claim the same, broadly, as my invention.

5 What I claim as my invention is—

1. The combination, with two air-pumps, one placed at each end of a section of railroad to be operated by a passing engine, of an air-chamber adapted to operate a signal, and pipes
10 connecting said chamber with each of said pumps, whereby an engine passing over the section in either direction will first show the signal and then conceal it and restore the pump first actuated to its normal position, all by air-
15 pressure, as shown and described.

2. The two air-pumps F F', the two double-armed levers G G', and the two pipes k k', in combination with the pump I, the signal L,

and an attachment to the engine for operating levers G G', substantially as specified. 20

3. The roller C, the lever c, supporting it, and the stop-pin e, in combination with hand-rod D, connected to lever c by means of a chain and the stay-pin E, as and for the purpose specified. 25

4. The air-pumps F F', the two double levers G G', operating them, and the roller C upon a locomotive-engine, in combination with a signal, L, and air-pump I, operating the same, and pipes k k', for communicating with the
30 three pumps, as specified.

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Witnesses:

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