(No Model.)

G. H. JOHNSON.

SEMAPHORE SIGNAL DEVICE.

No. 434,084. Patented Aug. 12, 1890.

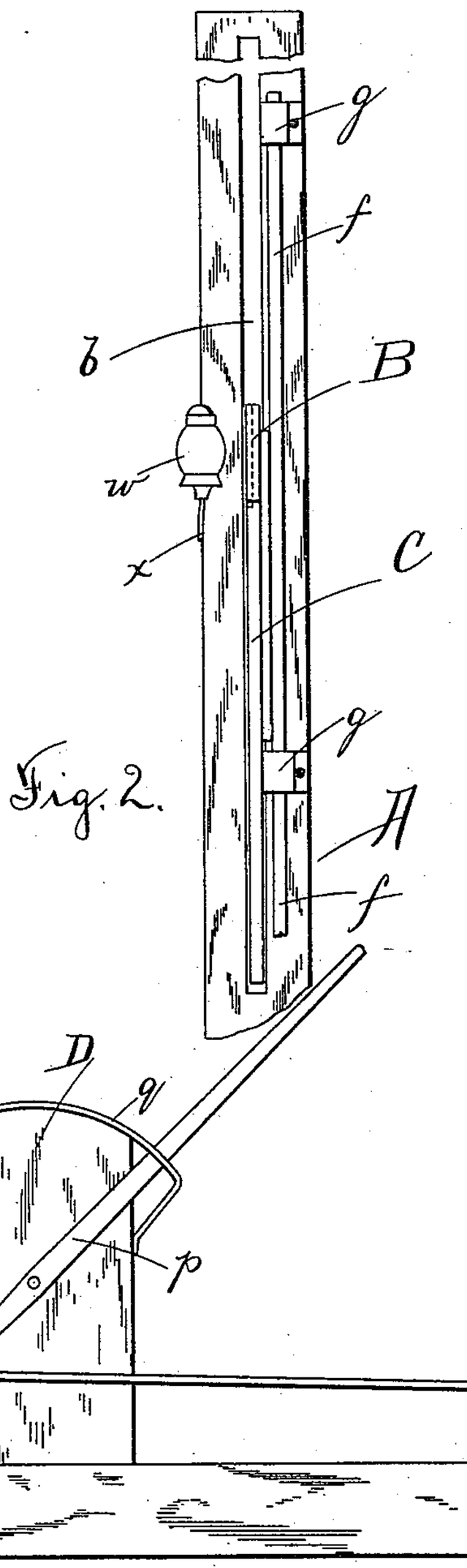

Fig. 2.

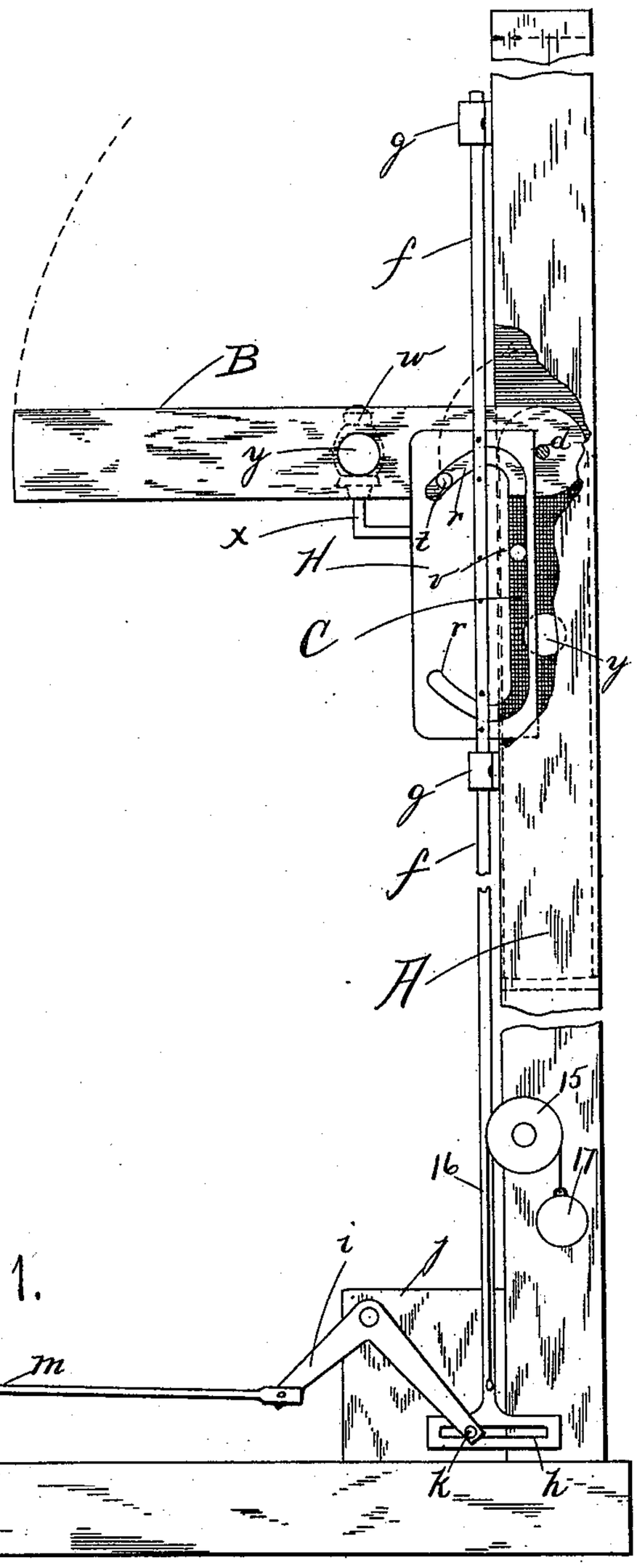

Fig. 1.

Witnesses
M. F. Engan
N. Dunfee.

Inventor
George H. Johnson,
Per C. A. Snow & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE H. JOHNSON, OF FITCHBURG, MASSACHUSETTS.

SEMAPHORE SIGNAL DEVICE.

SPECIFICATION forming part of Letters Patent No. 434,084, dated August 12, 1890.

Application filed June 11, 1890. Serial No. 355,060. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. JOHNSON, of Fitchburg, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Semaphore Signal Devices, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved device, a portion of the standard being broken away; and Fig. 2, a front elevation of the same.

Like letters and figures of reference indicate corresponding parts in both figures of the drawings.

My invention relates especially to mechanism for signaling railway-trains; and it consists in certain novel features, hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the standard, which is located in any suitable position at the side of the track. The upper portion of the standard is chambered vertically at *b*. Within said chamber two semaphore-arms B C are arranged at right angles to each other and mounted on the same pivot *d*. This arrangement admits of one of the arms being projected outward at right angles to the standard while the companion arm is concealed within the chamber. A vertically-arranged rod *f* is fitted to slide in eyes or loops *g* on the front of the standard at the side of the chamber. The lower end of the rod is provided with a rectangular link *h*. A bell-crank lever *i* is pivoted to a standard *j* at the foot of the standard A. One arm thereof is provided with a pin *k*, which works in said link. A connecting-rod *m* is pivoted to the opposite arm of said lever and leads to a signal-house or other suitable position where it is pivoted to a vertical hand-lever *p*, mounted on a standard D and working in a curved guide *q* in the ordinary manner. On the rod *f* a cam-plate H is mounted, said plate being provided with an eccentric-groove *r*, in which pins *t v* on the arms B C respectively slide. A lantern *w* is mounted on a bracket *x* on the standard A in such position that the light therefrom will show through the circular opening *y* in the arms B C when projected. The arms B C are painted in colors, indicating "safety" or "danger" in the usual manner, and colored glasses for the same purpose are disposed in the openings *y* of said arms. A pulley 15 is mounted on the standard A, and a cord 16, secured to the lower end of the rod *f*, passes over said pulley and is provided with a counterbalance-weight 17.

In the use of my improvement by throwing the hand-lever *p* from right to left, as viewed in Fig. 1, the rod *f* is forced upward by the bell-crank lever *i*, causing the pin *t* on the arm B to move into the vertical portion of the cam-track *r*, and the pin *v* on the arm C to move into the lower arm of said cam-track. This disposes the semaphore-arm B vertically in the upper portion of the chamber *b*, concealing it, and at the same time throws the arm C outward at right angles to the standard and into view of the engineer of the train. By reversing the movement of said lever the arm B may be projected outward again. The counter-balance 17 assists in elevating the rod and preventing it from falling too rapidly. For signaling in the dark the device is operated in the same manner, the lantern *w* being lighted, and the light therefrom showing through the colored glasses in the openings *y* of said arms serving to indicate the different signals.

Having thus explained my invention, what I claim is—

1. In a railway signal device, a standard, signal-arms mounted on the same pivot therein, a rod fitted to slide on said standard and provided with a cam-groove in which pins on said arms work, and a lever for actuating said rod, combined substantially as set forth.

2. In a semaphore signal device, the combination of a standard provided with a vertical chamber, semaphore-arms pivoted in said chamber, a rod fitted to slide vertically in

said standard, a plate mounted on said rod and provided with a cam-track in which pins on said arms work, and levers for actuating said rod, all being arranged to operate substantially as described.

3. In a semaphore signal device, the combination of a standard, two signal-arms pivoted in said standard and provided with glazed openings, a rod fitted to slide vertically on said standard, a plate mounted on said rod and provided with a cam-track in which pins on said arms work, levers for actuating said rod, and a lantern mounted on a bracket on said standard in position to register with the openings in the arms when said arms are projected, substantially as set forth.

4. In a semaphore signal device, the combination of a standard provided with a vertical chamber, signal-arms pivoted in said chamber, a rod fitted to slide vertically on said standard and provided with a plate having a cam-track in which pins on said arms work, a bell-crank lever having an arm working in a link on said rod, and its opposite end connected with a hand-lever, substantially as described.

5. In a semaphore signal device, the standard A, provided with the chamber *b*, in combination with the pivoted arms B C, the sliding rod *f*, provided with the plate H, having the cam-track *r*, substantially as set forth.

6. In a semaphore signal device, the standard and pivoted arms, in combination with the rod *f*, provided with the plate H, having the cam-track *r*, in which pins on said arms work, levers for actuating said rod, and a counter-balance for regulating the movement thereof, substantially as described.

7. The combination of the standard A, pivoted arms B C, provided with pins *t v*, openings *y*, the rod *f*, provided with the plate H, having the track *r*, the lantern *w*, and mechanism for actuating said rod, substantially as and for the purpose set forth.

GEORGE H. JOHNSON.

Witnesses:
K. DURFEE,
O. M. SHAW.