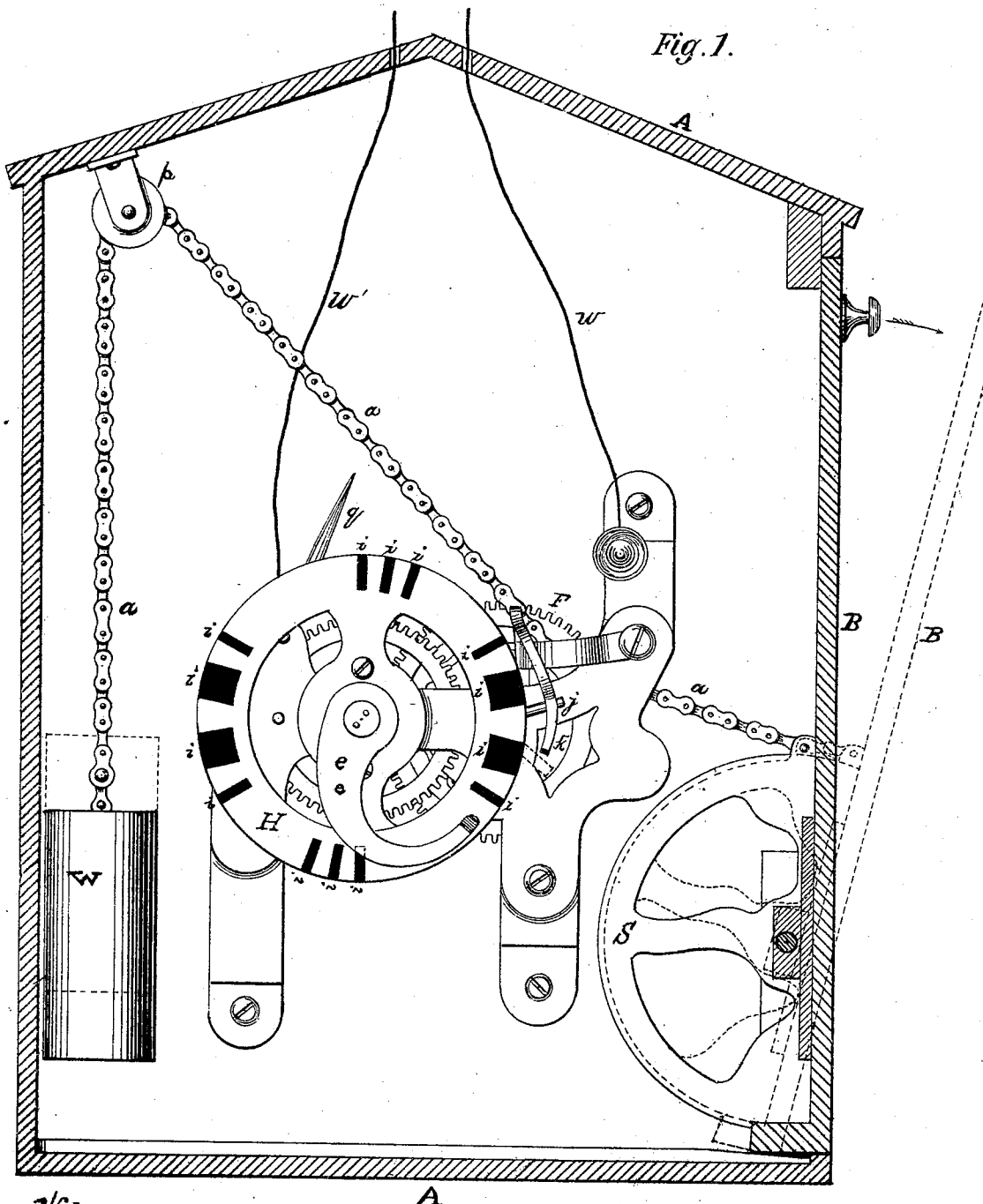


G. WRIGHT, M. Y. HOLLEY, & H. R. MILES.  
Improvement in Automatic Signal Boxes for Fire  
Alarm Telegraphs.

No. 123,970.

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Witnesses:

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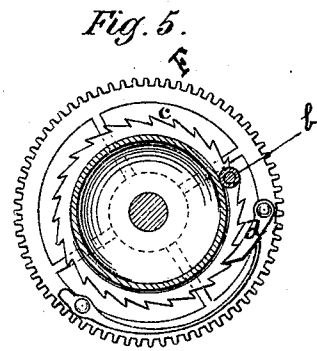
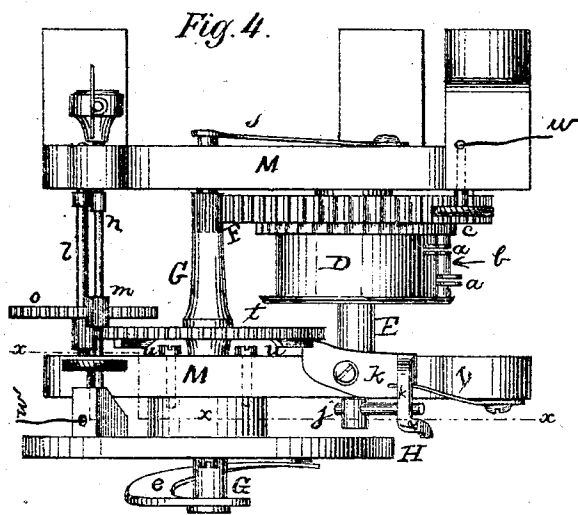
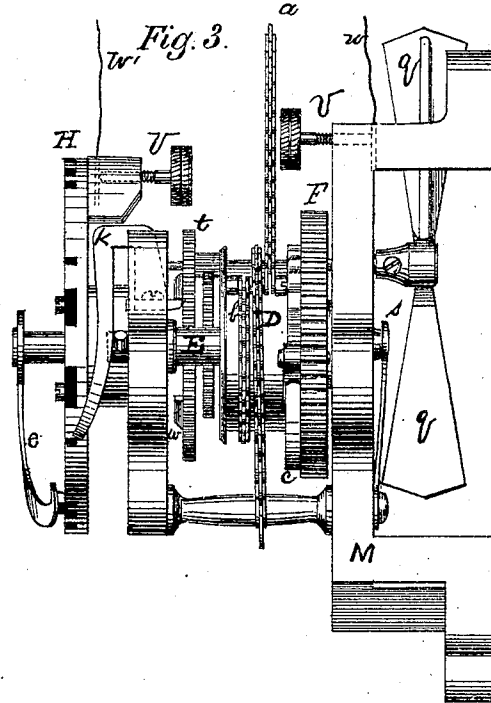
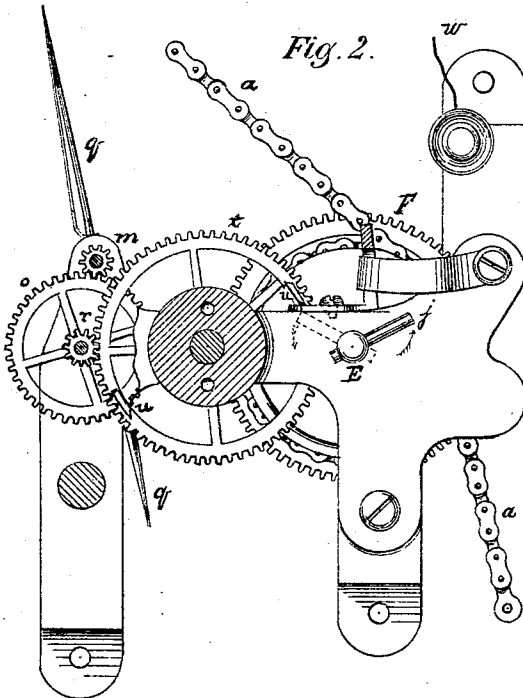
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# UNITED STATES PATENT OFFICE.

GEORGE WRIGHT, MINARD Y. HOLLEY, AND HENRY R. MILES, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN AUTOMATIC SIGNAL-BOXES FOR FIRE-ALARM TELEGRAPHS.

Specification forming part of Letters Patent No. 123,970, dated February 20, 1872.

Specification describing certain Improvements in Automatic Signal-Boxes for Fire-Alarm Telegraphs, invented by GEORGE WRIGHT, MINARD Y. HOLLEY, and HENRY R. MILES, of the city and county of Washington and District of Columbia.

The nature of our invention will be fully explained by the following description pertaining to the accompanying drawing illustrating our invention.

A represents the box or outside covering of our apparatus. It may have a front door, as usual. It also has a side door, B, hinged at the bottom, working in a vertical plane. To this door, which is used for winding up or putting into operation the apparatus, is attached a sector, S, grooved or with a plain face, upon which bears a chain, *a*, or its mechanical equivalent, wire, twine, &c., said chain being secured to the top of the sector. A pulley may take the place of a sector. This chain *a* is attached to a pin, *b*, which is a part of the drum D. Another chain is attached to pin *b*, and it passes over a pulley, *p*, at the top of the box, and at the bottom of which chain is a weight, W. The chain *a* may be continuous, and have a "turn" around the drum, the aim being to have one revolution of the same. The full lines show the machine closed, or in its normal position, the dotted lines showing it partially wound up.

The machine may be put in operation through a front door, necessitating beveled or other gearing. The drum D and its shaft E carry a ratchet-wheel, *c*. On the same shaft is a toothed-wheel, F, working loosely on the same. It carries a pawl or dog, *d*, (Fig. 5,) which engages with the teeth of the ratchet-wheel *c*, and this attachment carries the toothed wheel around with the drum D. Wheel F, Fig. 4, engages with a pinion on shaft G, to the front end of which is attached a curved metallic spring arm, *e*, which revolves and is in frictional contact with an insulated stationary dial, H, Fig. 1, secured to the frame M of the machine, and is insulated, *x*, therefrom thoroughly. (See Fig. 4.) One of the electrical wires, *w'*, is in contact with this dial. (See Fig. 3.) The other wire, *w*, in Fig. 2, transmits its current, which passes into the frame M, Fig. 4, through a spring, *s*, which bears against the inner end

of the shaft G, which carries the curved spring-arm *e*. This completes the circuit, save when it is broken as the end of the arm *e* passes over the insulated spaces *i* on the face of the dial H, Fig. 1. Shaft G carries a toothed wheel, *t*, which engages with a pinion-wheel, *r*, on a shaft, *l*, which also carries a toothed wheel, *o*, which engages with a pinion, *m*, on a shaft, *n*, which shaft on its inner extremity carries a fan-wheel, *q*, used to regulate the motion, Figs. 2 and 4. The wheel *t* has on its front surface one or two lugs, *u*, which act as a stop or stops, so as to close circuit at a certain point when the machine is not in motion. Shaft E carries an arm, *j*, which revolves with it, Fig. 4. To the front part of frame M is pivoted a curved lever or break, *k*, Fig. 3, kept in position by spring L. When the arm *j* in its revolution comes in contact with the inner curved surface of this, it throws its lower arm outward and its top part inward close to the front face or surface of wheel *t*, which carries the lugs *u*, and when either one of the lugs *u* in their revolution comes in contact with the lever *k* the operation of the machine is stopped. One revolution of the drum D causes the curved spring-arm *e* to pass around the dial H nine times, thereby repeating the signal eighteen times, or twice at each complete revolution, giving ample time for the operator at the central office to get the alarm, when by reason of obstruction on the line-wires a very delicate adjustment may be required. V, Fig. 3, represents thumb-screws, by which the line-wires *w* are connected with frame M and dial H. The insulated dots and dashes shown on insulated dial H indicate station 35. The shaft G, bearing the arm *e*, passes through a circular hole in the face of the dial-plate H, not in frictional contact with the same.

We claim—

1. In combination with an automatic signal-box for fire-alarm telegraphs, a stationary insulated dial-plate, H, and in conjunction therewith, and additional thereto, a revolving metallic spring-arm, *e*, for breaking and closing the circuit, automatically and continuously rotated by means of a weight or spring exerted through a suitable train of gearing, substantially as described.

2. Also, a metallic spring, *s*, to bear against

the inner or transverse end of shaft G, on which the curved metallic spring-arm *e* (or circuit-breaker) revolves, for the purpose of securing a perfect connection for the transmission of electric current, substantially as described.

3. Also, the combination of lugs *u*, arm *j*, curved lever *k*, and spring L, used for stopping the machinery, substantially as described.

4. The door B, in combination with the sector S, chains *a*, drum D, pulley *p*, and weight W, or their equivalents, for the purpose of

winding up and setting in motion a train of gearing for operating an automatic signal-box by simply opening and closing the door, substantially as described.

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Witnesses:

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