(No Model.)

W. GRAY.

SIGNAL DEVICE FOR TELEPHONE PAY STATIONS.

No. 454,470. Patented June 23, 1891.

Fig. 1

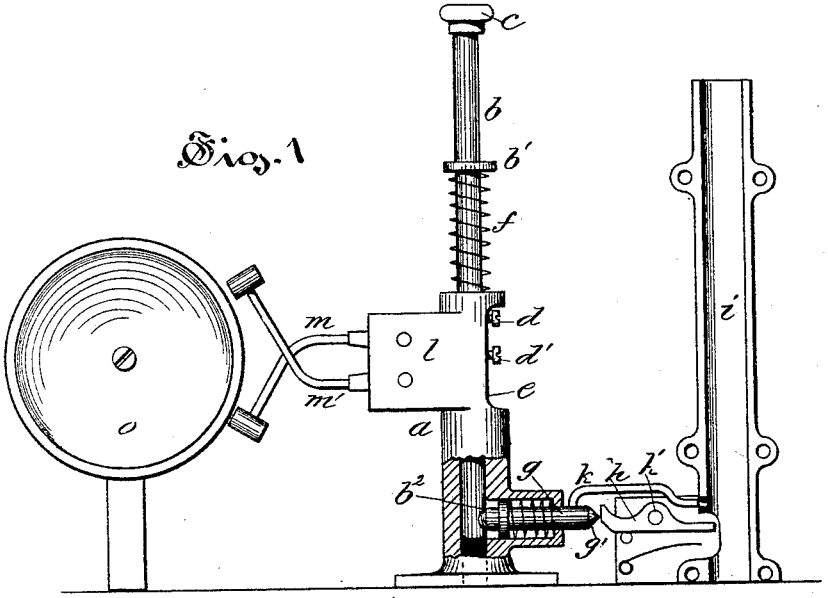


Fig. 2

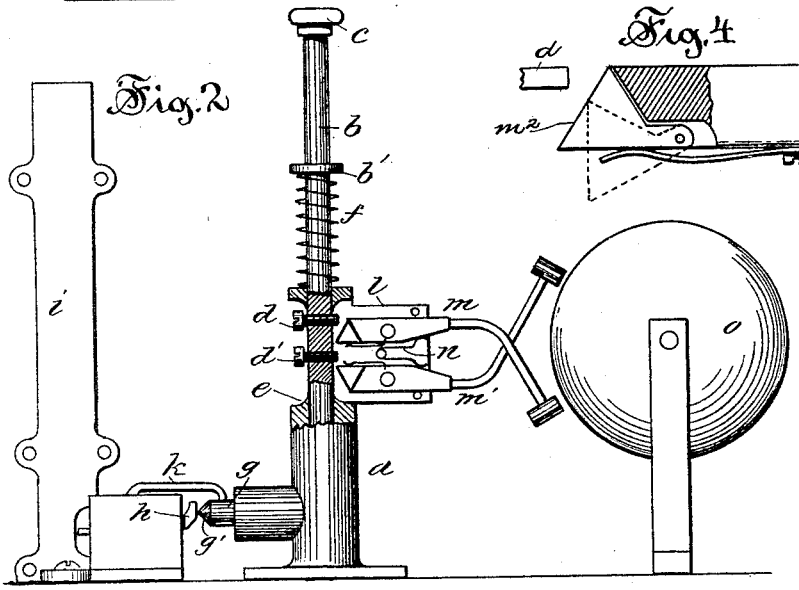


Fig. 4

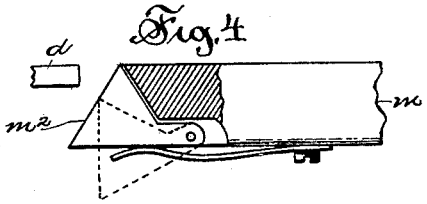
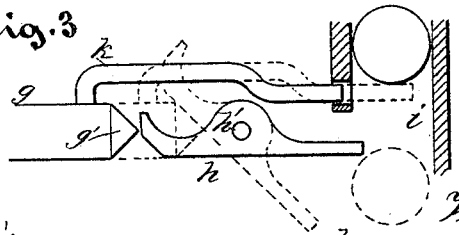


Fig. 3



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UNITED STATES PATENT OFFICE.

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SIGNAL DEVICE FOR TELEPHONE PAY-STATIONS.

SPECIFICATION forming part of Letters Patent No. 454,470, dated June 23, 1891.

Application filed April 19, 1890. Serial No. 348,727. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GRAY, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Signal Devices for Telephone Pay-Stations, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the class of apparatus designed for sending signals by means of a device having a coin-controlled lock; and the object is to provide means for sending two signals on the same bell by a single stroke of the plunger, and also to enable several separate coins to be used in the same chute or coin-channel and a signal sent for each coin.

To this end my invention consists in details of the several parts making up the device as a whole and in their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view in front elevation of the device with parts broken away to show construction. Fig. 2 is a detail view in elevation from the side opposite to that shown in Fig. 1. Fig. 3 is a detail view illustrating the operation of the coin-separator. Fig. 4 is a detail view on enlarged scale, showing the construction of the trip device on the end of the hammer-levers.

In the accompanying drawings, the letter *a* denotes a standard; *b*, a plunger, in this instance arranged vertically in the standard and provided with a pad *c* at the upper end. The plunger has a limited sliding movement in a socket in the standard, the extent of motion being controlled by the heads of the screws *d d'* and the ends of the slot *e* cut into the side of the plunger. The plunger is held at the upper limit of its play by the spring *f*, that thrusts against a shoulder *b'* on the plunger and against the top of the standard at the other end. A cam-surface b^2 on the plunger is in contact with the end of a sliding dog *g*, arranged at about right angles to the path of movement of the plunger in a socket communicating with the plunger-socket in the standard. This dog *g* is held against rotary movement, and its outer end *g'* is tapered or cone-shaped.

In the path of sliding movement of the dog there is arranged a tilting tumbler *h*, that is pivoted in such position that one end is in the path of sliding movement of the dog and prevents its movement unless the tumbler is tilted out of its normal position. The tumbler hangs on a pin *h'*, and its forward end projects into the path of movement of the coin, the edge of the coin-channel *i* being cut away, usually, for the purpose.

The coin-channel consists of a flat tube so arranged that the weight of the coin that is dropped into the channel operates to tilt the tumbler, and when it is thus tilted the plunger may be pushed downward, throwing the dog forward and tilting the tumbler, so that the coin passes by it and drops into a receptacle. Fast to the plunger is a coin-separator *k*, consisting of an arm projecting forward above the tumbler and arranged so that it moves forward into the coin-channel, so as to obstruct the passage through the channel of any coin except the one that immediately operates to tilt the tumbler. If there are several coins above the separator, only the one that has operated to tilt the tumbler can pass beyond it into the receptacle until the separator has been withdrawn by the return action of the plunger, which locks the apparatus again until the weight of another coin upon the tumbler unlocks it. In this manner as many strokes of the plunger are compelled as there are coins placed one above the other in the coin-channel, and in case it is intended to send one signal for each coin the construction and arrangement of parts enables it to be done without error.

A bracket *l* on the standard supports the spring-actuated hammer-levers *m m'* with their inner ends lying in the path of movement of a pin or like part, in this instance the ends of the screws *d d'*, that are borne on the plunger. The end of the screw *d'* when the plunger moves downward trips the hammer-lever *m'*, and its recoil under the impulse of the spring *n* causes the hammer to strike the bell *o* and sound a signal. The end of the screw *d* passes beyond the end of the lever *m*, and in the return movement of the plunger this screw operates to swing the other hammer-lever and strike a second blow on the bell in case two signals on the same bell are to be made. On the rear end of each of the

hammer-levers there is arranged a trip-block m'', that is pivoted to the lever and supported on a spring, so as to yield in one direction to let the pin on the plunger pass to a point beyond the lever in its position of rest. The block, however, is fixed against any reverse movement, so that on the movement of the trip-pin in the reverse direction the hammer-lever will be swung back, so that on its release the hammer will be swung against the bell by the recoil of the lever-spring n. The details of construction of this trip-block are clearly shown in Fig. 4.

This signal device is adapted and intended to be used in combination with a telephone pay-station, such as forms the subject-matter of several pending applications already filed by me.

I claim as my invention—

1. In combination with a sliding plunger, the sliding dog in operative connection therewith, the tilting tumbler having one end arranged in the path of movement of the dog, the coin-separator secured to the dog and moving with it, the coin-channel opening for the entrance of the separator, the tilting hammer-levers, and the signal device, all substantially as described.

2. In a coin-controlled signal device, a coin-channel, a tilting tumbler h, having one end arranged in the path of movement of a coin in the channel, and a sliding dog bearing a coin-separator that is projected into the coin-channel by the movement of the dog, all substantially as described.

3. In a coin-controlled signal device, in combination with the signal, a plural number of swinging hammer-levers, the sliding plunger bearing the trip-pins, the spring adapted to return the plunger to its normal position, the sliding dog in operative connection with the tumbler, the coin-controlled tumbler with one end normally in the path of movement of the sliding dog and the other in the path of movement of the coin, and the coin guide or channel, all substantially as described.

4. In a signal device, in combination with the coin-controlled lock, a spring-seated sliding plunger having trip-pins, the swinging hammer-levers appurtenant to each trip-pin, and the bell, the tilting hammer-levers being mounted so as to be operated in opposite directions by the sliding movement of the plunger, all substantially as described.

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