J. H. McCARTHY.

SIGNAL DEVICE.

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1,092,732.

Patented Apr. 7, 1914.

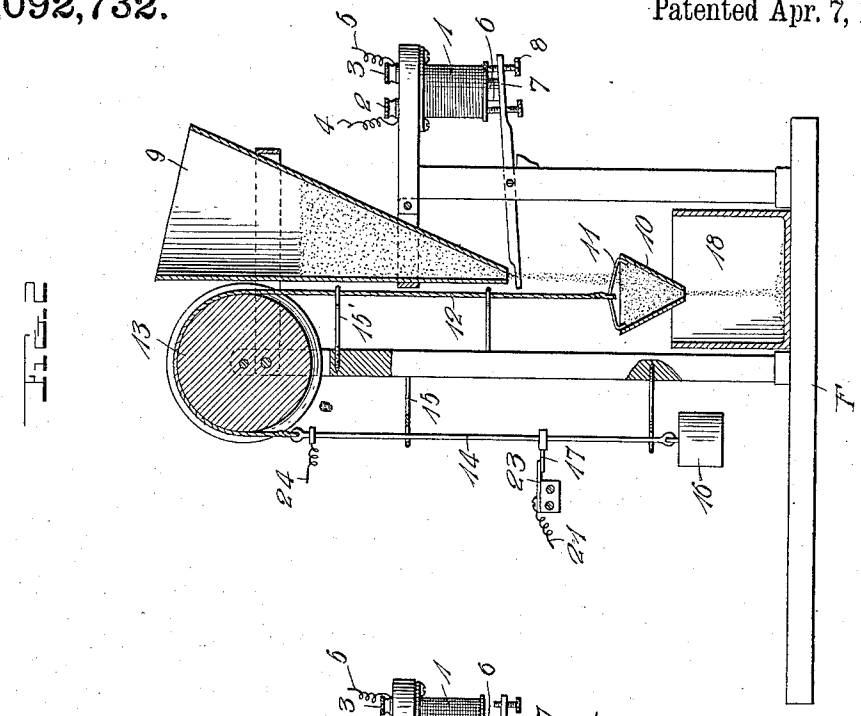


FIG. 2

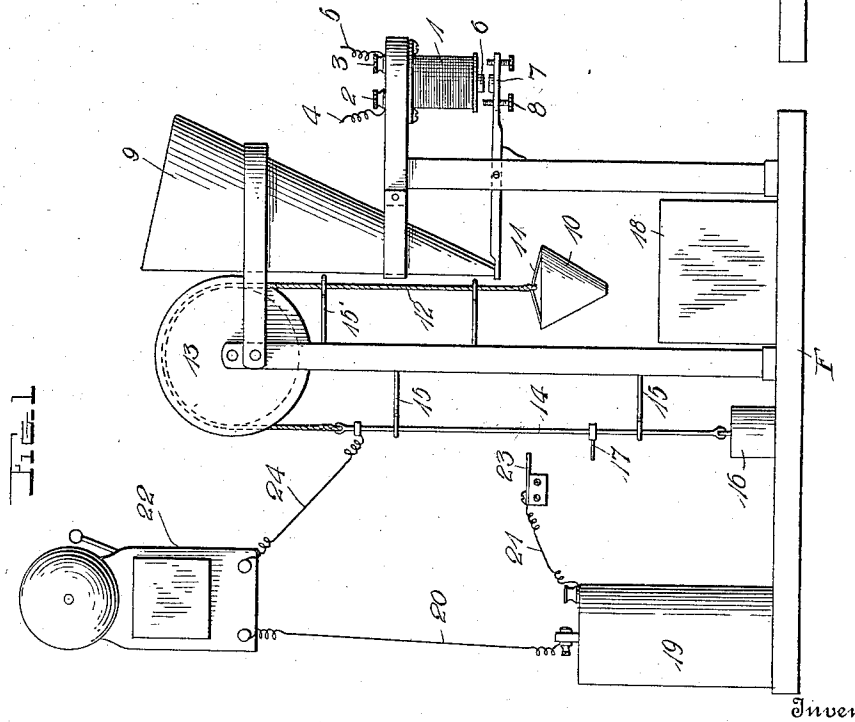


FIG. 1

Witnesses
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SIGNAL DEVICE.

1,092,732. Specification of Letters Patent. Patented Apr. 7, 1914.

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To all whom it may concern:

Be it known that I, JOHN HENRY McCARTHY, a citizen of the United States, residing at Stafford Springs, in the county of Tolland and State of Connecticut, have invented certain new and useful Improvements in Signal Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in electric signals and more especially to signals for use in wireless telegraph stations.

The object of the invention is to provide a simply constructed device for notifying the operator when a message comes in thereby avoiding the necessity of his wearing the receiving apparatus on his head except when taking a message.

With this and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 represents a side elevation of a signal apparatus constructed in accordance with this invention and with the parts in normal or inoperative position; Fig. 2 is a side elevation partly in section of a portion of the apparatus with the parts in the position which they assume when a message comes in.

In the accompanying drawing a suitable supporting frame is shown on which is mounted a powerful magnet 1 with the posts 2 and 3 of which are connected the wires 4 and 5 which receive the message. The core 6 of this magnet extends below the magnet and an armature 7 is arranged opposite said projecting core end, said armature being here shown in the form of a lever fulcrumed intermediately of its ends on the supporting frame with one end arranged opposite the magnet and provided with adjustable stops 8 for limiting the upward movement of the lever. The other end of the lever 7 extends under the small end of a funnel 9 supported on said frame by any suitable means and which is designed to contain sand or other material for actuating the signal in a manner hereinafter to be described. This funnel has one upright side and one flared side for a purpose to be described. When the parts are in inoperative or normal position as shown in Fig. 1 this inner end of the lever closes the lower small end of the funnel and prevents the escape therefrom of the signal actuating medium.

Disposed in alinement with the lower end of the funnel 9 is a smaller inverted cone-shaped receptacle 10 having an opening in the apex thereof much smaller than the opening in the small end of the funnel 9. This receptacle 10 is shown provided with a bail shaped handle 11 extending across its upper wide end and which is secured midway its length to one end of a flexible element 12 which passes over a pulley 13 arranged adjacent said funnel and is connected at its other end with a rod 14. This element 12 extends parallel with the straight or upright side of the funnel 9 and in close proximity thereto to provide for the positioning of the receptacle 10 in alinement with the opening in the bottom of said funnel 9. This rod 14 passes through suitable guide eyes 15 and has a weight 16 connected with its lower end, said weight being designed to overcome the weight of the receptacle 10 when said receptacle is empty as shown in Fig. 1, said weight 16 resting on the supporting base or floor F when the parts are in this position. The flexible element 12 also passes through suitable guide eyes 15′ extending opposite to the eyes 15 to hold the receptacle 10 in proper position to be at all times below the funnel 9. An arm 17 extends laterally from the rod 14 intermediately of its ends preferably between the eyes 15 and is designed for closing an electric circuit when the weight is raised a predetermined distance as will be hereinafter described. A vessel 18 is preferably disposed below the receptacle 10 for catching the sand or other signal actuating medium as it flows out through the small opening in the apex of said receptacle.

A battery 19 is disposed at a suitable point and the positive and negative wires 20 and 21 leading therefrom connect respectively with a bell 22 and a contact arm 23 which latter is arranged in the path of the arm 17 carried by the rod 14. Another wire 24 leads from the bell 22 to the rod 14 and completes the bell circuit.

In the operation of this device the funnel 9 being filled with sand or other suitable material has its lower end closed by the inner end of the lever 7 and when a message comes into the station the magnet 1 is energized and attracts the armature 7 drawing the

outer end upward into contact with the core 6 of said magnet and thus lowering its inner end and removing it away from the opening at the end of the funnel 9 and said lever remains in this position while the magnet is energized. The sand from funnel 9 then flows out through the opening in its lower end into the receptacle 10 disposed in alinement below said opening and the opening at the apex of said receptacle 10 being much smaller than that of the funnel 9, said receptacle rapidly fills and the weight thereof overcomes the weight 16 causing said weight 16 to be lifted and the contact arm 17 thereof to engage the contact 23 and thus close the bell circuit thereby ringing the bell and notifying the operator that a message is coming into the station. He can then adjust the receiving apparatus on his head and take the message.

When the magnet is deënergized the outer end of the lever which is provided with the stops 8 overcomes the weight of the other end of the lever and causes said inner end to rise into engagement with the lower end of the funnel 9 thereby cutting off the discharge of sand therefrom and when the sand is so cut off that remaining in the receptacle 10 passes out through the opening in its apex into the vessel 18 and when empty the weight 16 overcomes the weight of said vessel 10 and drops into the position shown in Fig. 1 thus separating the contacts 17 and 23 and stopping the ringing of the bell.

While I have described my invention with more or less minuteness as regards details and as being embodied in certain precise forms, I do not desire to be limited thereto unduly any more than is pointed out in the claims. On the contrary, I contemplate all proper changes in form, construction and arrangement, the omission of immaterial elements and substitution of equivalents as circumstances may suggest or render expedient.

I claim as my invention:

1. An electric signal comprising a supporting structure, an upright substantially funnel shaped receptacle mounted thereon and open at one end, said receptacle having one perpendicular side and one flared, a magnet mounted in said structure, an armature for said magnet fulcrumed on said structure and having one end extending adjacent said magnet and the other end under said receptacle, the end extending under said receptacle normally closing the open end of said receptacle, a movable funnel shaped receptacle positioned below said first mentioned receptacle and having an opening therein, a bail extending across the wide upper end thereof, a flexible element connected with said bail mid-way its ends and extending parallel with the perpendicular side of said first mentioned receptacle, a pulley over which said flexible element passes, means connected with the other end of said flexible element for normally overcoming the weight of the receptacle attached thereto, an alarm circuit, a circuit closing contact carried by said flexible element and a coöperating contact projecting into the path of said movable contact and an actuating medium in said first mentioned receptacle adapted to be discharged therefrom into said movable receptacle on the energizing of said magnet whereby said movable contact is brought into engagement with the contact in its path for closing the circuit and sounding the alarm.

2. An electric signal comprising a supporting structure, a funnel shaped member mounted thereon, a magnet mounted in said structure, an armature for said magnet fulcrumed on said structure and having one end extending under said magnet and the other end under said funnel, the end extending under said funnel normally closing the smaller end thereof, an inverted cone shaped receptacle positioned below said funnel and having an opening in its apex, a flexible element connected with said cone shaped member and mounted on said supporting structure, and means connected with the other end of said flexible element for normally overcoming the weight of said cone shaped receptacle, an alarm circuit, a circuit closing device carried by said flexible element, and an actuating medium in said funnel adapted to be discharged therefrom into said cone shaped receptacle on the energizing of said magnet.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN HENRY McCARTHY.

Witnesses:
ALBERT A. BABT,
RUPERT H. CHEENEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."