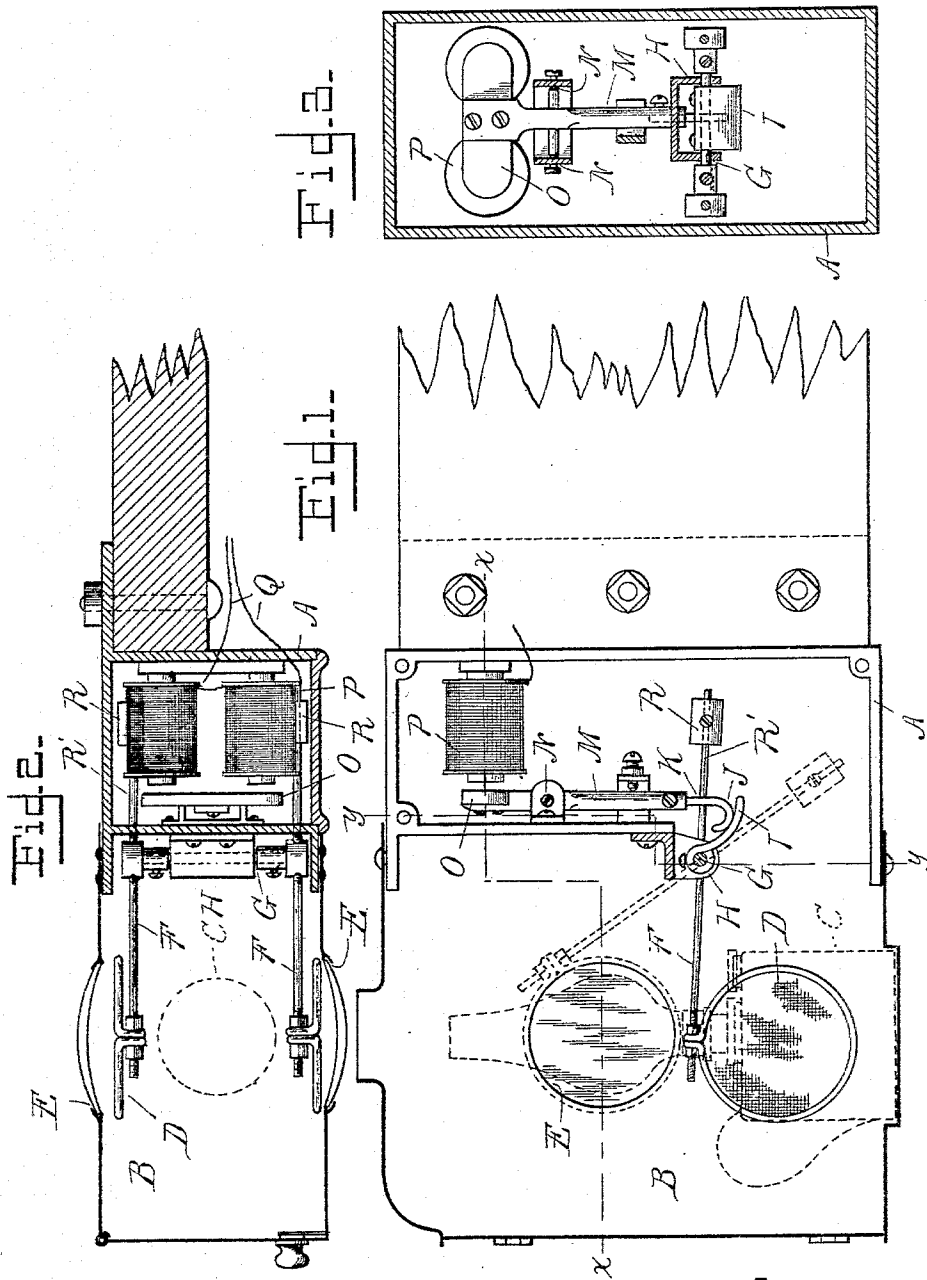


(No Model.)

H. A. PARRISH.
ELECTRIC SEMAPHORE SETTING DEVICE.

No. 532,009.

Patented Jan. 1, 1895.



—Witnesses—
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UNITED STATES PATENT OFFICE.

HOMER A. PARRISH, OF JACKSON, MICHIGAN.

ELECTRIC SEMAPHORE-SETTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 532,009, dated January 1, 1895.

Application filed February 10, 1894. Serial No. 499,998. (No model.)

To all whom it may concern:

Be it known that I, HOMER A. PARRISH, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Electric Semaphore-Setting Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to that class of electric signals in which the power for setting the signal is entirely derived from a battery or equivalent source of electricity. Such signals are very liable to fail as soon as the battery becomes weak and the main cause of this is that the work demanded of the electric current is not commensurate with the fluctuating power of the battery current. To overcome this objection I have devised a signal
15 in which the electric setting apparatus requires such a small amount of power that a few battery jars can, with ordinary care in renewing them from time to time be safely relied on to do the work at all times.

25 To this end my invention consists in an electric setting apparatus having but few parts, the weight of which is so inconsiderable that there is little loss from friction. At the same time the parts are at all times so
30 near a balanced condition that by the attraction of an armature on closing the battery circuit the signal moves from an almost perfect condition of balance to a slightly unbalanced condition, sufficient to restore the signal by
35 gravitation as soon as the circuit is opened, all as more fully hereinafter described and shown in the accompanying drawings, in which—

40 Figure 1 is an elevation partly in section of my improved signal apparatus as applied to a so-called order board for a signal station. Fig. 2 is a horizontal section thereof, substantially on line *x x* in Fig. 1. Fig. 3 is a vertical cross-section on line *y y* in Fig. 1.

45 A is the casing inclosing the setting devices, and B a head inclosing the lamp C and banner D, all so arranged as to safely house the parts in a compact form convenient of access and permit of mounting the signal to a suitable post or bracket.

The signal is formed by the usual glass

lenses secured in apertures E in the sides of the head in connection with banners D formed of red transparent fabric stretched over a light hoop which in turn is adjustably secured
55 by a screw-threaded connection or otherwise to the end of an arm F, substantially as shown. The two banners are adapted to move in proximity to the sides of the head. They are carried at the opposite ends of a rock shaft G
60 which is journaled in bearings H. The rock shaft G has centrally secured upon it a curved arm I preferably formed of a bent piece of polished brass or other metal plate not liable to rust, but somewhat pliable so that its form
65 may be slightly altered by bending, if necessary for the exact adjustment of the device. This curved arm is in contact with the curved foot J of an extension piece K adjustably secured in any suitable manner to the lower end
70 of a pendulous lever M which is pivotally supported in centers N from the side of the casing and carries at its upper end a cross piece O forming the armature of a double electro magnet P. This magnet is adapted to be energized from a suitable battery (not shown)
75 which may be placed in the room of the operator and from there connected by suitably protected leads Q in circuit with the magnets, and with a switch (not shown) under control of
80 the operator for opening or closing the circuit at will.

R is a counterweight adjustably secured upon an arm R'. I use preferably two such arms and counterweights, one for each banner, secured to the rock shaft diametrically
85 opposite to the arms F which carry the banners, for the purpose of counter balancing the same.

In practice the parts being arranged and
90 constructed substantially as described and shown they are intended to operate as follows: The magnet P upon closing its energizing circuit attracts the armature O and oscillates the lever M in a manner to cause it to
95 rock the shaft G through a sufficient angle of motion to raise the banners from the position below the lenses to the position in front of the lenses as shown in dotted lines and as long as the magnet remains energized the signal is
100 held up. Now if the counter-weights have been so adjusted that in the position from

which the banners are raised, the parts are in a perfect balance or nearly so, it will be seen that on account of the banners being eccentrically secured to their arms while the counterweights are substantially in a horizontal plane, the balance will be disturbed in favor of the banners in raising them up to the lenses so that on breaking the circuit of the magnets the banners will be restored by gravitation again to their lower position. This adjustment of the banners in relation to their counterweights, and also to a horizontal plane, forms an important part of my invention, as it will be seen that it conforms to the best conditions for the efficient work of the magnets, in attracting the armature from its further position into contact with the poles. The position of the arm I also assists in the same direction, and the construction and arrangement of the other parts is calculated to require a minimum of power in operation, whereby the operation of the device is made reliable and permanent.

My device may be adjusted to work either way, that is, the signal may be set by closing the circuit of the magnet as described and

shown in the drawings or the connections of the arms on the rock shaft may be so adjusted that the banner is in position behind the lenses, when the circuit of the magnet is open. With the latter adjustment the banner upon closing the circuit would be lifted up and drawn to the right, and to this end suitable room is provided for in the head.

What I claim as my invention is—

In an electric signal, the combination with the head, of the electro-magnets P, the armature O, the pendulous lever M carrying said armature and provided with the adjustable extension K, the rock shaft G, the curved arm I on the rock shaft, the arms F and R' carried by said rock shaft and the banner C and counter-weight R carried by said arms, all arranged to operate substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HOMER A. PARRISH.

Witnesses:

M. B. O'DOHERTY,
O. F. BARTHEL.