(No Model.)

H. C. W. COWDERY & J. H. BACON.

SIGNAL MACHINE.

No. 303,266. Patented Aug. 12, 1884.

Fig. 1.

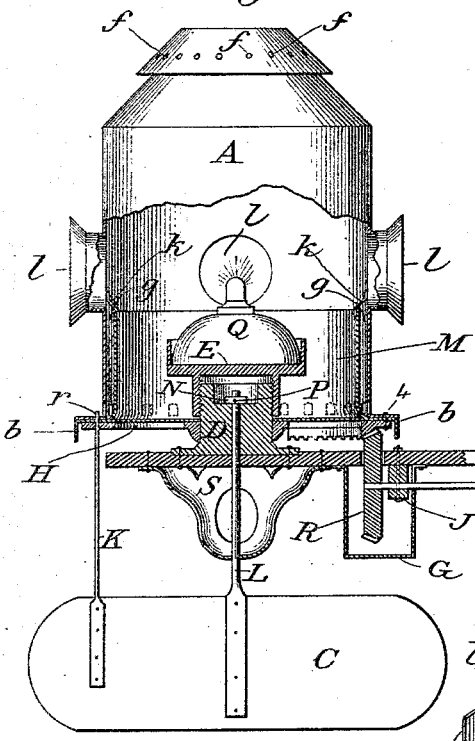
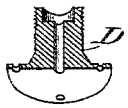


Fig. 2.



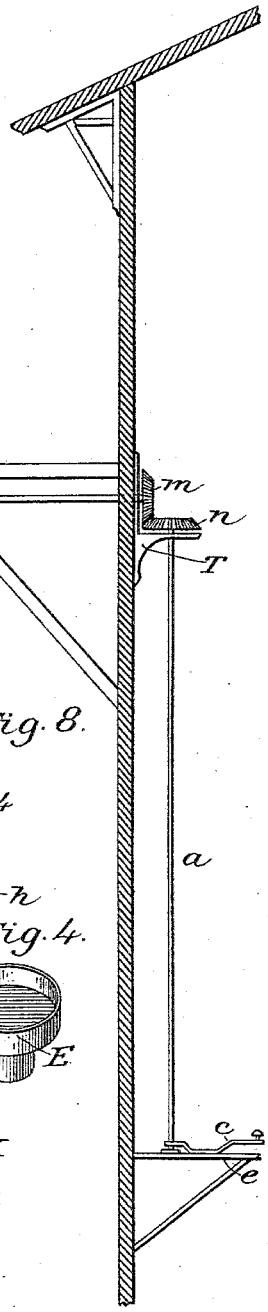


Fig. 8.

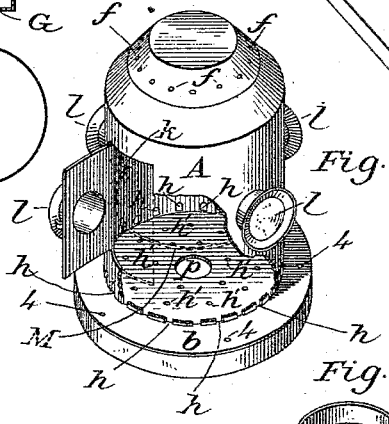


Fig. 6.

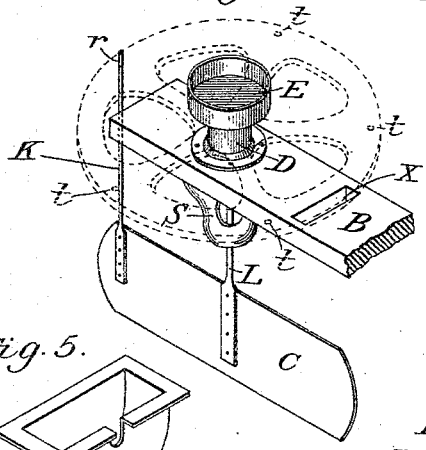


Fig. 4.

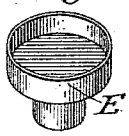


Fig. 3.

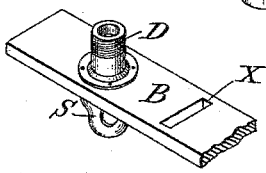


Fig. 5.

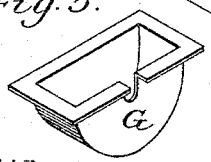
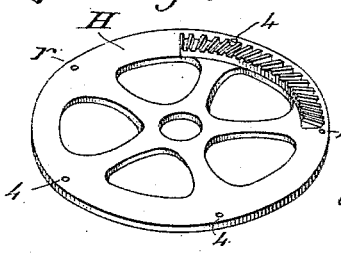


Fig. 7.



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UNITED STATES PATENT OFFICE.

HIRAM C. W. COWDERY, OF CHICAGO, ILLINOIS, AND JOSEPH H. BACON, OF CHARLOTTE, MICHIGAN.

SIGNAL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,266, dated August 12, 1884.

Application filed April 30, 1883. (No model.)

To all whom it may concern:

Be it known that we, HIRAM C. W. COWDERY, of the city of Chicago, in the county of Cook and State of Illinois, and JOSEPH H. BACON, of the city of Charlotte, in the county of Eaton and the State of Michigan, have jointly invented a new and useful Signal-Machine, of which the following is a specification.

Our invention relates to improvements in signals for day and night use, in which the shade covering the lamp rotates, for the purpose of exhibiting different-colored lights in the night-time, in conjunction with the target, which serves as an indicator in the day-time, all of which is operated from within the station-house by means of a crank-lever; and the objects of our improvements are, first, to provide a firm and stationary seat for the lamp; second, to revolve the shade and target, while the light remains fixed and stationary; third, to protect the gear operating the signal from the rain, sleet, and storm; fourth, to prevent the light from being jerked out by revolving; fifth, to insure certainty and ease of operation; sixth, to provide a signal in which the shade used is so ventilated that moisture and soot will not gather upon the inside of the lenses and obscure the light. We obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of the signal. Fig. 2 is a sectional view of the collar. Fig. 3 is a detailed view in perspective of the collar shown in Fig. 2 attached to the arm extending from the building, with the bracket beneath. Figs. 4 and 5 are detailed views in perspective of the cup in which the lamp sets and the cap attached to the bottom of the arm extending from the building, respectively. Fig. 6 is a detailed view of the target attached to the rod passing through the bracket S, and arm B extending from the building into the collar D, about which the wheel, Fig. 7, turns, and upon which the cup, Fig. 4, is screwed. Fig. 7 is a perspective view of the quarter gear-wheel. Fig. 8 is a perspective view in detail of the shade containing the lenses of different color, which is bolted fast to the wheel, Fig. 7, and revolves about the lamp.

Similar letters refer to similar parts throughout the several views.

The collar D, Figs. 1, 2, 3, and 6, has a socket in one end for receiving the bolt, Fig. 1, screwed onto the end of the rod L, which is riveted to the target C, and passes up through the collar D from beneath. The collar D, just described, has also a thread worked on the top end, upon which is screwed the cup E, Fig. 4.

The rod L, Figs. 1 and 6, has a thread cut upon the top end for receiving the nut N. A pin passes through the nut N and the rod L to prevent the nut N from becoming loosened. The cup E, Figs. 1, 4, and 6, has an inside thread, so as to screw down on the collar D, and has a flange on the top for receiving the lamp.

The wheel H, Figs. 1, 6, and 7, has cogs one-fourth the way around it, into which the gear-wheel R, Fig. 1, meshes; also, a hole, *r*, made for receiving the guide-rod K, Fig. 1, attached to the target C, and holes 4 4 4 4 for bolting on the shade A, Fig. 8.

The shade A, Figs. 1 and 8, is constructed of galvanized or sheet iron or tin, provided with lenses *l*, and ventilated at the top by perforated holes *f f f* through the iron, and at the bottom by apertures *h h h* through the shade, where the bottom is fastened on, and through the holes *h h h* in the bottom. The shade A has a lining, M, upon the inside, extending up to the bottom of the lens, made so as to have a space, *g*, Fig. 1, between the shade A and the lining M. The lining M is soldered below to the bottom *b* of the shade A, and is fastened at the top to the shade A only at points between the lenses, as *k k*, by strips of tin soldered to the lining M and the inside of the shade A. The bottom *b* is extended so as to cover the wheel H, and has holes in the bottom suitable for bolting it to the wheel H through the holes 4 4 4 4, and a hole, *p*, in the center for receiving the collar D. The shade A contains two different-colored lenses, and is made to exhibit a different-colored light simply by turning the shade A about the stationary lamp Q. The target C is made to turn one-quarter way around, and to stand at right angles or parallel with the track, as desired.

In the further construction of our invention we attach the crank-lever *c*, Fig. 1, to the rod *a*, which sets in a socket in the table in the station-house, by a key or pin, so that the lever *c* will not turn without turning the rod *a*. We then screw the bracket T to the building, and secure the gear-wheel *w* to the rod *a*, so as to turn with the rod *a*. We then bolt the journal-box J on the arm B, and pass one end of the rod O through the journal-box J and the other end through the bracket T, and attach the gear-wheel *m* on the rod O, so as to mesh into the gear-wheel *n*, and the gear-wheel R to the other end of the rod O. Both gear-wheels R and *m* are attached to the rod O with keys or pins, so as to turn with the rod O. The arm B, as attached to the building, has a mortise, *x*, cut through it, within which turns the gear-wheel R, and a hole bored near the end, through which passes the target-rod L.

To the target C is riveted a short iron rod, K, flattened at the end attached to the target C, and extending up through the wheel H, Figs. 1, 6, and 7, at *r*. We now fasten the bracket S under the arm B, and we fasten upon the arm B the collar D, slightly mortised into said arm B, by screws or bolts over the hole bored through said arm B for receiving the rod L, as shown in Fig. 3. The rod L, secured to the target C, with the guide-rod K attached, is then passed up from beneath through the bracket S, the arm B, and the collar D far enough to screw on the nut N and to put through the pin *p*, and is then returned back into the collar D, as is shown in Fig. 1. The wheel H, Fig. 7, is then placed on the collar D, Figs. 1, 3, and 6, with the guide-rod K, Figs. 1 and 6, extending up through the hole *r* in the wheel H, Figs. 1 and 6. Next we bolt the shade A onto the wheel H at 4 4 4 4, and screw the cup E, Figs. 1 and 6, onto the collar D. We now nail the cup G, Fig. 5, over the gear R and journal-box J into the arm B. The target C is operated by the guide K, passing up through the wheel H at *r*, which in turn meshes into the gear-wheel R, as shown in Fig. 1.

For operating the device shown, we take hold of the crank-lever *c* upon the operator's table *e*, which has been connected with the mechanism intended to work the signal, as before set forth and illustrated, and turn it to the right or left one-quarter way around, which also turns the gear-wheels *n*, *m*, R, and H quarter way round, and so revolve the shade A, which is bolted to the wheel H, and the target C, which is also connected with said wheel H, one-quarter way around.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

An improvement in signals, consisting of the combination of a rotating shade with a lining upon the inside, ventilated around the bottom from the outside and beneath, a gear-wheel for supporting the shade and guiding the target, and a stationary collar to support the light about which the shade revolves, with suitable machinery for operating the same, substantially as set forth and described.

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