

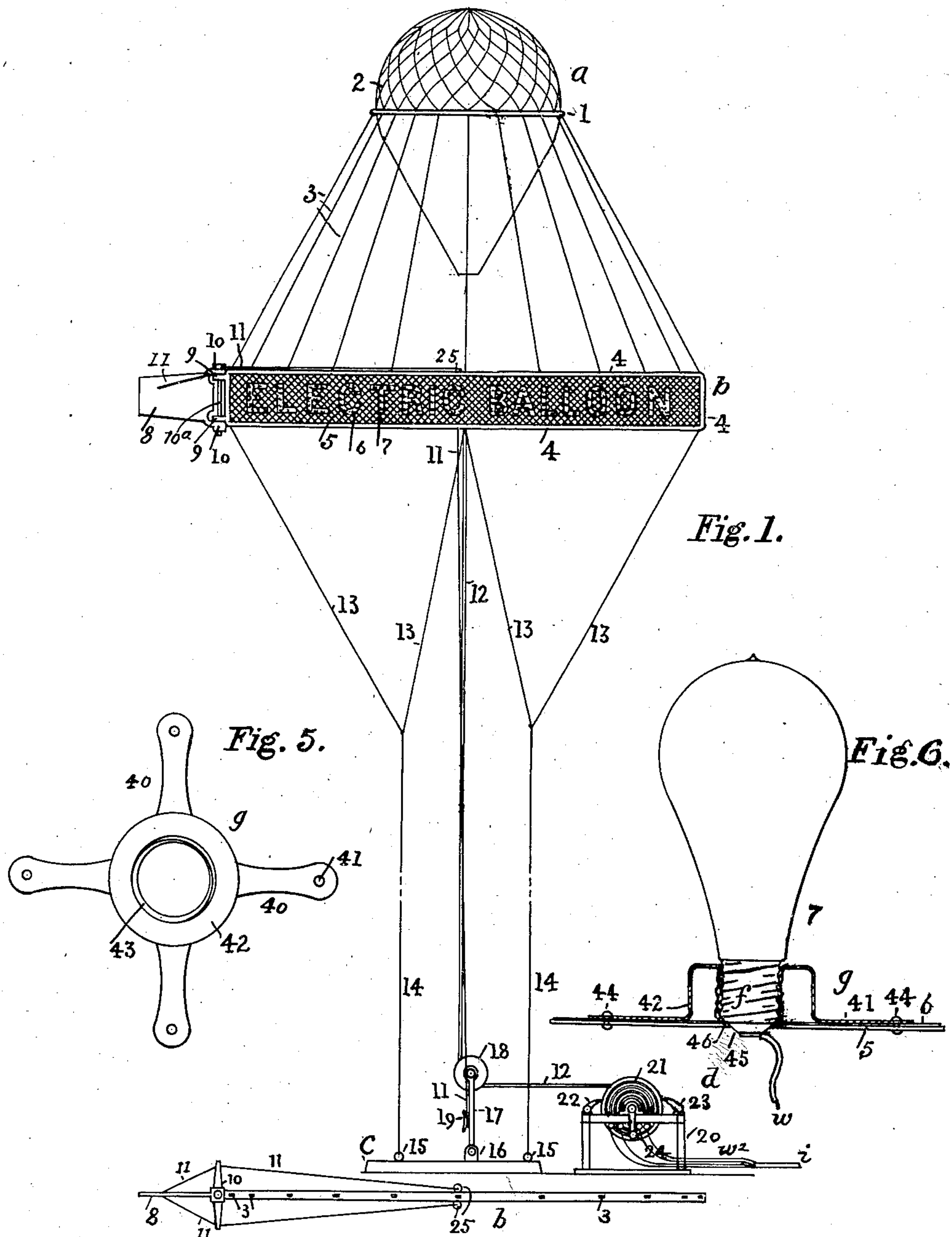
No. 829,640.

PATENTED AUG. 28, 1906.

F. W. ERICKSON.
AERIAL SIGNALING DEVICE.

APPLICATION FILED OCT. 7, 1905.

2 SHEETS—SHEET 1.



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Fig. 3.

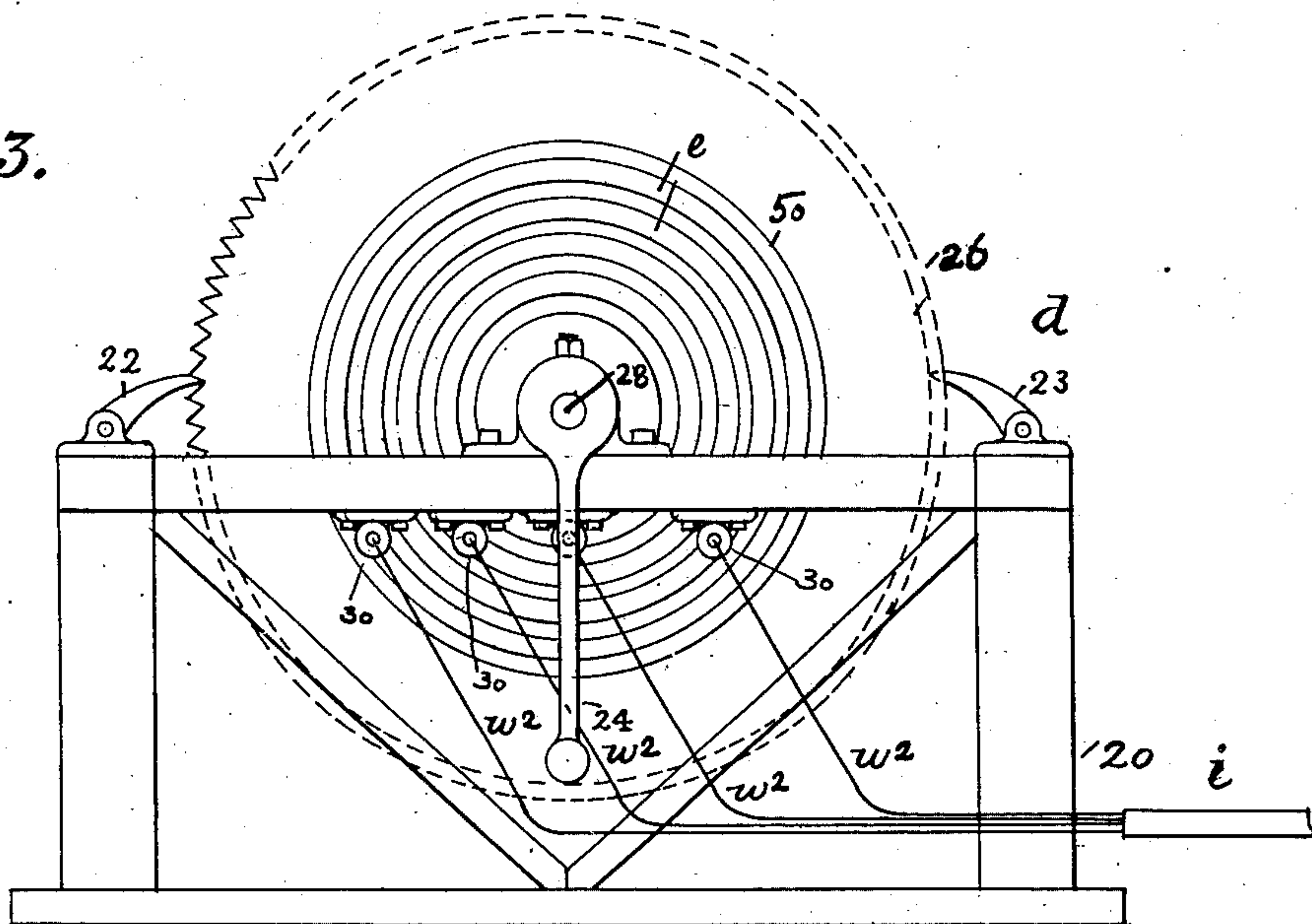
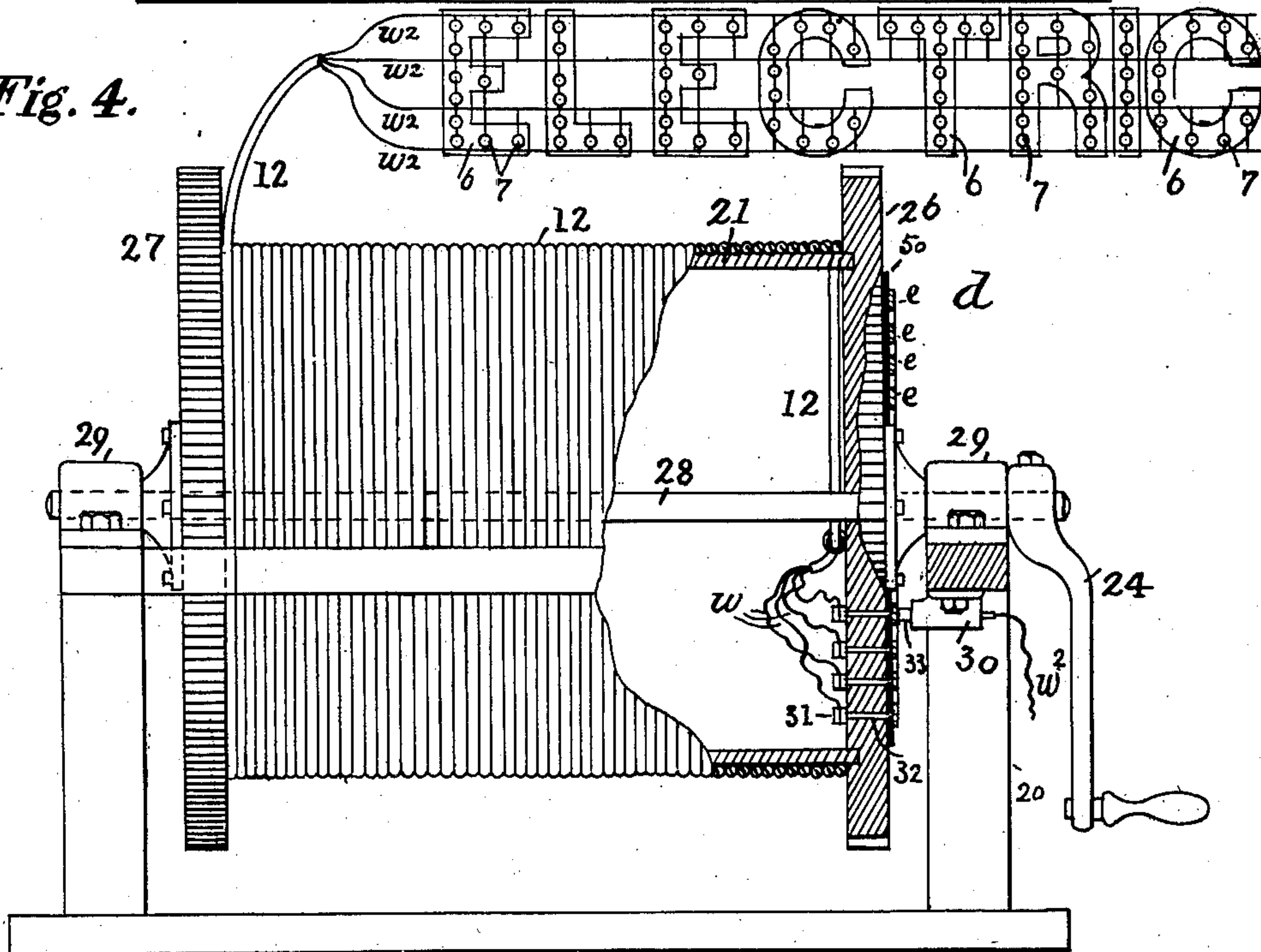


Fig. 4.



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AERIAL SIGNALING DEVICE.

No. 829,640.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed October 7, 1905. Serial No. 281,734.

To all whom it may concern:

Be it known that I, FREDERICK WM. ERICKSON, residing at New York, in the county and State of New York, have invented certain
5 Improvements in Aerial Signaling Devices, of which the following is a specification.

The present invention relates to aerial electric signs, and has reference to a sign suspended from a captive balloon by means of
10 guy ropes or rods, the sign lying in a horizontal direction beneath the balloon and may be of any shape desired, and by means of a rudder the sign can be turned to display the same at the will of the operator.

15 In the drawings, which illustrate the invention, Figure 1 is a view in elevation of the entire apparatus. Fig. 2 is a plan view of the electric sign. Fig. 3 is an end view of the windlass; and Fig. 4 is a side view of the
20 same, partly in section. Fig. 5 is a plan view of a lamp-receptacle; and Fig. 6 is a horizontal section of the same, showing it attached to the sign.

In the drawings, *a* represents a balloon
25 filled with a gas lighter than air, its upper portion covered with a net 2, the strands of which are attached to a girth-ring 1, from which ropes 3 extend to and are connected with a sign *b*, consisting of a frame 4, having
30 a rudder 8 attached at one end. The said end has lugs 9 9 to receive the extensions 10 10 from the rudder, and a rod 10^a extends through the lugs and extensions. The extensions project on each side and at each end receive the tiller-ropes 11, which are attached
35 to the sides of the rudder and extend along the top of the frame 4 and pass through rings 25 25 therein and then are carried to the ground.

40 Between the sides 4 of the frame *b* is a netting 5, on one side of which are placed the letters of the sign 6, made of silk, which are secured to the netting by thread, and at suitable places on each letter are secured the
45 lamp-receptacles *g*, having a central threaded orifice to receive the lamp 7 and with a plurality of feet 40, perforated at their ends to receive rivets 44, which pass through the letters 6 and the netting 5. As indicated in
50 Fig. 4, the wires *w* from the cable 12 extend along the sign, preferably on the opposite side from the letters 6, and the lamps are bridged between them. The cable is suitably

connected to the frame 4, so that strain will be taken from the wires *w*.

55 Anchoring-ropes 13 and 14 connect to the sign *b* and are adapted to be fastened to a base-plate *c* on the ground or other support when the sign is raised. To the said base-plate is secured a bolt 16, pivoted to which is
60 a bar 17, having at its upper end a pulley 18, under which the cable passes. A cleat 19 is provided on one side of the bar, to which the tiller-ropes 11 11 may be secured.

The windlass *d* has a frame 20, having at
65 each end bearings 29 to support the shaft 28, which carries the drum 21, upon which the cable 12 may be wound. The ends of the drum have upon their peripheries ratchets 26 and 27, into which drop the pawls 22 and
70 23, respectively, to serve for holding the drum from turning in either direction. A crank-lever 24 is secured to the shaft 28. Upon one head or end of the windlass is a ring of insulation 50, to which is secured four
75 metal commutator-rings *e*, and extending from each ring through the head is a bolt 32, terminating on the inside of the head with binding-screws 31. Each binding-screw
80 holds one end of a cable-conductor. Collector-brushes 30 are attached to the frame 20, each composed of a conducting-post 33, adapted to bear upon a commutator-ring. Each wire *w* is therefore connected by bolt
85 32 to its ring *e* and brush 33 to wire *w*², which leads to the source of electricity, which may be a battery or other generator.

The operation of the invention is apparent, as when the balloon is down the cable is wound on the drum, and to elevate the same
90 the cable is unwound and the balloon rises by its buoyancy and lifts the suspended elements. When it has reached the proper elevation, it is anchored by the ropes 14, the current is turned on, and the lamps lighted, all in
95 a manner comprehensible from the previous description.

I claim as my invention—

1. In an aerial device, a balloon adapted to be anchored to the earth by guy-ropes, 100 having a sign suspended therefrom, provided at one end with a rudder, ropes secured on each side of the rudder which extend to the center of the sign and downward, whereby the rudder may be turned to an angle with
105 the sign, as set forth.

2. In an aerial device, a balloon with means for anchoring the same, an electric sign suspended therefrom, a rudder attached to the sign with guide-ropes extending therefrom
5 to the sign and downward, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of

two subscribing witnesses, this 4th day of October, 1905.

FREDERICK WM. ERICKSON.

Witnesses:

JAMES M. WATTERS,
WELLINGTON E. SOBEY.