J. J. BUCKLEY.

SIGNALING APPARATUS.

APPLICATION FILED JUNE 18, 1917.

1,338,210.

Patented Apr. 27, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

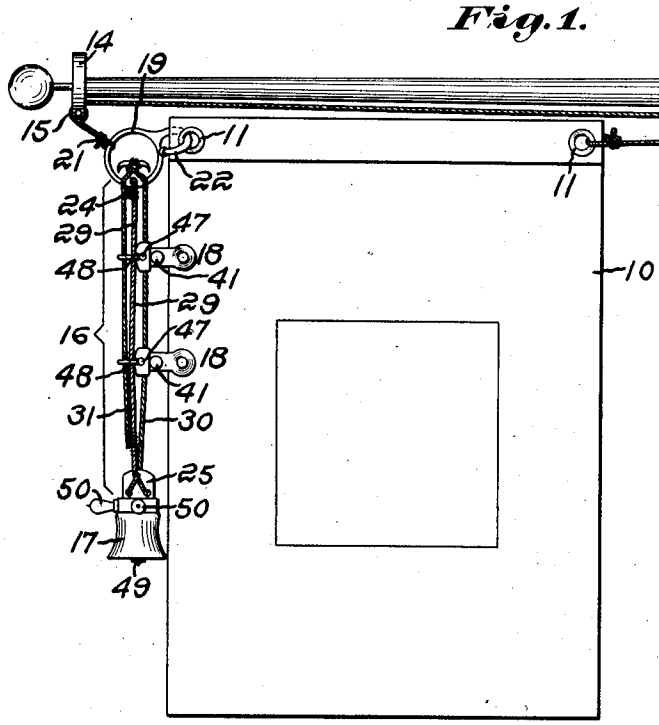


Fig. 2.

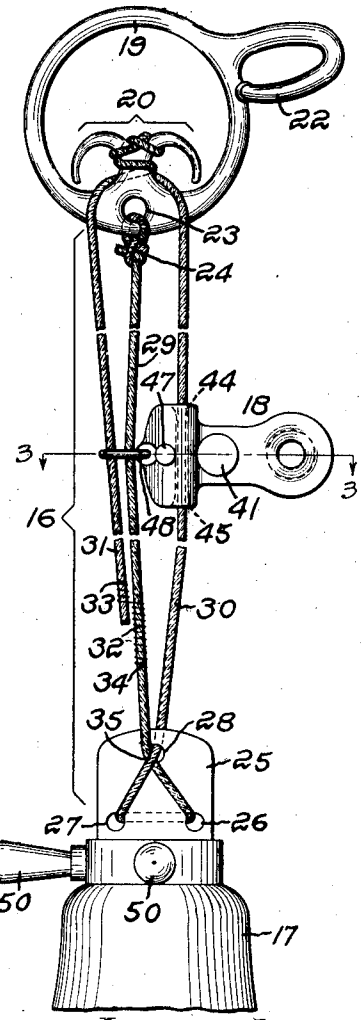


Fig. 3.

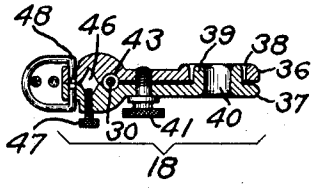
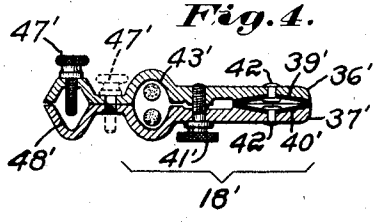


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

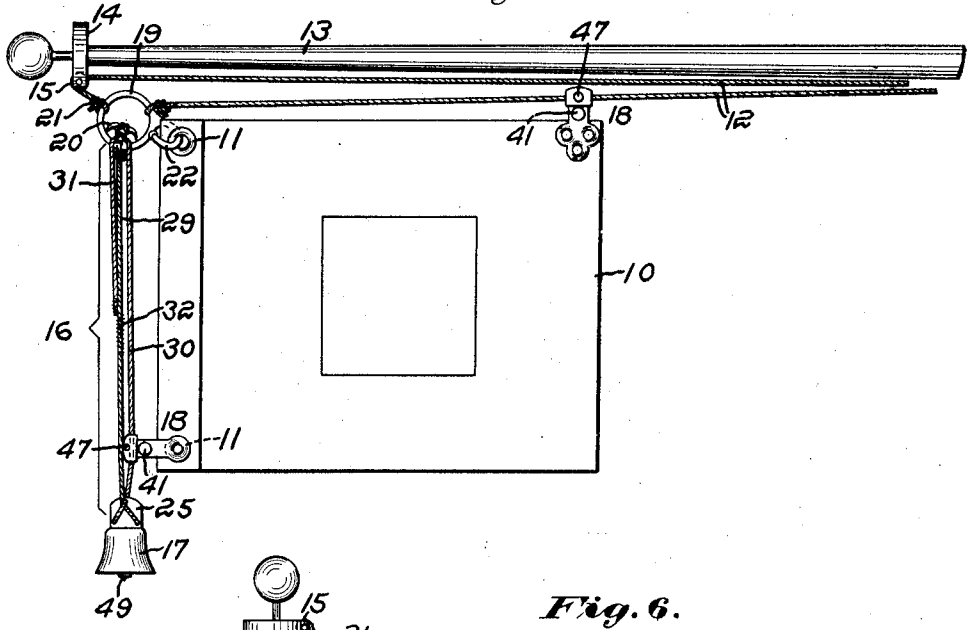


Fig. 6.

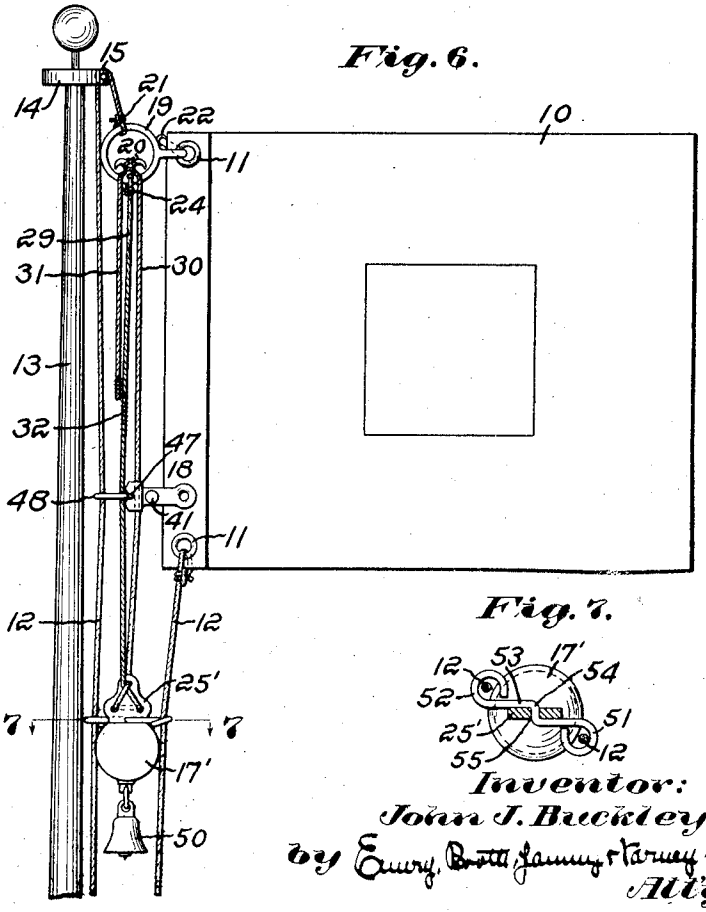


Fig. 7.

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UNITED STATES PATENT OFFICE.

JOHN J. BUCKLEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO WILLIAM T. DAVIDSON, OF BOSTON, MASSACHUSETTS, AND TWO-THIRDS TO CHARLES A. SCHMITZ, OF WEST MEDFORD, MASSACHUSETTS.

SIGNALING APPARATUS.

1,338,210. Specification of Letters Patent. Patented Apr. 27, 1920.

Application filed June 18, 1917. Serial No. 175,308.

To all whom it may concern:

Be it known that I, JOHN J. BUCKLEY, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Signaling Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invenetion relates to signaling apparatus, both audible and visual, and is more especially concerned with means for supporting, controlling and operating of signaling devices. One phase of the invention has more particular reference to the control of signals such as flags, pennants and banners, and to means for preventing them from becoming tangled and torn.

My invention will be best understood by reference to the following description when taken in connection with the acompanying drawings of certain specific embodiments thereof, while its scope will be more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevation of one form of signaling apparatus embodying my invention;

Fig. 2 is a detail elevation on an enlarged scale of some of the parts shown in Fig. 1;

Fig. 3 is a detail sectional view on line 3—3 of Fig. 2, illustrating one of the clamping weights;

Fig. 4 is a detail sectional view similar to Fig. 3, showing another form of clamping weight;

Fig. 5 is a side elevation of a modification of signaling apparatus;

Fig. 6 is a side elevation of a second modification of signaling apparatus; and

Fig. 7 is a detail plan section on an enlarged scale on line 7—7 of Fig. 6.

Referring to Figs. 1, 2 and 3 of the drawings, and to the embodiment of my invention which is there exemplified, I have shown a signaling apparatus comprising a suitable visual signal 10, which may be of any desired character, as for example a flag, pennant or banner, the same being herein provided with usual gromets or eyelets 11, to which it is customary to attach in some appropriate manner a usual halyard 12. The latter may be supported in any usual or desired manner, as for example upon a flagpole 13, or for the latter there may be substituted a usual cable extending from one suitable support to another, as for instance between two buildings. In some cases, it may be desirable to dispense with the staff or cable altogether, and to rely solely upon the halyard itself as a means of support. In any case, the support may be either horizontal, vertical or inclined. While in Fig. 1 a generally horizontal flagpole is shown, the invention is by no means restricted to this arrangement, but may be used in connection with vertical flagstaffs, as will appear hereinafter. The flagstaff or pole 13 is herein provided with a usual truck 14, having a sheave wheel 15 for the halyard 12.

In the use of flags, pennants and banners of all kinds, there is more or less trouble experienced, owing to the fact that they become tangled with their halyards and supports, and torn, and under such circumstances, it is often difficult to take in the flag. Many attempts have heretofore been made to overcome these difficulties, but the results have not been entirely satisfactory. It has been found in practice that the devices themselves are apt to cause tearing of flags due to shrinkage of the latter and various other causes, and that such devices lack the flexibility and freedom of motion essential to graceful and natural flying of the flag, as well as to the prevention of tearing of the same. One aim of my present invention is to overcome these difficulties.

To this end, I have herein provided flexible, automatically acting flag-controlling means, including a suitable element 16, which may be and preferably is flexible, a main or master weight 17 suspended thereby, and one or more auxiliary weights 18, the latter being herein in the form of clamps adjustably secured to one margin of the flag 10, and suitably connected with the flexible element 16. The latter may be supported by any appropriate means, herein a support 19, which it may be convenient to refer to as a cleat ring, since it is provided with a cleat 20 for adjustably attaching the

flexible member 16 thereto. This cleat ring may be secured to the flag and to the halyard in any suitable manner, but herein the latter is tied to the cleat ring by the use of a suitable knot 21, and the cleat ring is provided with an appropriate hook 22 hooked into the gromet or eyelet 11 at the adjacent corner of the flag, the hook being preferably given a downward inclination toward its free end, thereby to prevent its accidental detachment from the flag. One end of the flexible element 16 may be secured to the cleat ring in any suitable manner, but herein the latter is provided with an eye or hole 23, through which the flexible element is passed and fastened by an appropriate knot 24.

The master weight 17 is adjustable as to its height so as to accommodate flags of different dimensions, and to this end, is provided with an upwardly projecting plate 25, having perforations 26, 27 and 28, arranged in the form of a triangle, and adapted to receive the flexible elements 16. One lead 29 of the latter extends from its point of attachment at the eye 23 along the front face of the plate 25 through the perforation 26, thence along the rear face of the plate and through the perforation 27 onto the front face, thence along the front face and through the perforation 28 to the rear face, and has a lead 30 extending upwardly to the cleat 20 to which it is fastened in a usual and well-known manner. The free end 31 may be, and is herein, secured to the lead 29 by suitable means in the form of a wire-retaining element 32, the latter having one end inserted at 33 in the free end or terminal portion 31, about which the wire is wound several turns in one direction, and then several turns in the opposite direction about the lead 29, to which its free end may be secured at 34. It may be conveniently secured at 33 and 34 by simply bending one end of the wire to form a spur or hook which is inserted in the flexible element to which it is attached, the latter being preferably in the form of a rope. By this means, the terminal portion 31 of the flexible element 16 is adjustably secured to the lead 29, and may be placed at any suitable point along the latter as circumstances may require. The retaining element 32, moreover, constitutes a spring which, when properly adjusted, serves to relieve the flagpole and other parts from shock as the master weight 17 moves up and down. To this end, the element 32 may be secured to the terminal portion 31, and the lead 29 slipped along through the element 32 until there is somewhat of a slack in the lead 29 above the element 32, after which the latter is secured at 34. When now the downward pull of the weight 17 is exerted on the lead 29, the slack will be taken up to a greater or less extent and the element 32 tensioned.

It should here be noted that the lead 30 passes across the lead 29 at a point 35 intermediate the two perforations 26 and 27, and thus constitutes a non-slipping, quickly adjustable means of attachment of the flexible element 16 to the master weight 17. The binding effect of this crossing of the flexible element is such that the harder it is pulled, the tighter it grips, and even though either of the leads 29 and 30 should become broken, the master weight cannot drop.

Referring now to the auxiliary weight or weights 18, I have previously stated that these are secured to the margin of the flag 10, preferably by clamping them thereto. The clamping means may take various forms. In Fig. 3, I have shown one form comprising two clamping members 36 and 37, one having an opening 38 and the other a projection 39 extending thereinto. For the sake of lightness, the latter is herein provided with a perforation 40, extending therethrough. Any suitable means, such for example as a screw 41 passing through one clamping member and threaded into the other, may serve as a means for furnishing the desired clamping action by drawing one toward the other. It will be understood that to clamp the margin of the flag between the jaws of this device, the latter is opened to admit the flag, and in closing the jaws the fabric is forced into the opening 38 by the projection 39, and a firm non-slipping grip is secured without danger of tearing the flag.

In the modification shown in Fig. 4, the weight 18′ comprises clamping members 36′ and 37′, whose opposed faces are provided with flag-engaging members 39′ and 40′ of some suitable yielding material, such for example as felt, secured thereto by appropriate means in the present instance consisting of rivets 42. In this case, the clamping screw 41′ serves to furnish the desired clamping action.

Reverting now to the weight 18 shown in Fig. 3, the latter is provided with one or more suitable guides for one or more leads or strands of the flexible member 16, there being sufficient clearance so that the latter can slide with perfect freedom. This being so, it must be evident that the described construction possesses several marked advantages. Among them may be mentioned the fact that no tearing of the flag can result from any unequal swelling and shrinking of the flag and the rope, since these parts are free to adjust themselves automatically with relation to each other at all times. Another advantage is that as the flag moves to and fro in the wind, the auxiliary weights 18 can slide up

and down on the lead or leads, which constitute a guide therefor, and will always resume their initial positions as soon as the breeze dies down and lets the flag relax. The master weight 17 controls the auxiliary weights 18, and thus in turn controls the flag 10, so that there is no danger of the latter being carried over the pole 13. Still another advantage of the described arrangement is that any number of the auxiliary weights 18 may be employed according to the circumstances and the dimensions of the particular flag, and they can be adjusted through a large range of sizes of flags.

It will be remembered also that the flexible element 16 is also adjustable as to length and as to the height of the master weight 17, thus providing a wide range of adjustability of the device to suit varying conditions. In practice, that part of the weight 18 which is toward the left (Figs. 1, 2 and 3) of the center of the lead 30 is made sufficiently heavy to prevent the other end from sagging down and causing a cramping action on the lead 30. In the form shown in Fig. 3, the weight 18 is provided with a guide passage 43 to receive the lead 30 of the flexible member 16. Preferably the upper and lower ends of the passage 43 are flared or rounded as at 44 and 45 to facilitate an easy sliding action along the flexible member 16 under all conditions of use.

If desired, the weight 18 may be provided with an additional passage 46 to serve as a guide for the flexible member 16, and a coöperating thumb-screw 47 to serve as a clamping means for said member for use when the device is rigged in other ways hereinafter described. The passage 46 may be of any suitable cross-sectioned shape but, as shown in Fig. 3, it consists of two opposed V shaped grooves constituting jaws which, when properly proportioned, may be caused to clamp the flexible member 16 without the use of the set screw 47. The weight 18 may be further provided with a ring 48 to encircle one or more leads of the flexible member 16, if desired, and in Figs. 1, 2 and 3 I have shown the leads 29 and 31 passing through and guided by said ring. The preferred form of clamping weight is shown in Fig. 4, in which the weight 18′ is provided with a passage 43′ large enough to receive a plurality of leads of the flexible member 16, and provided with a second passage 48′ to receive one or more leads. A set-screw 47′ may be associated with the passage 48′ to clamp a rope therein or when said passage is to be used simply as guide, the screw may be removed and placed in another threaded hole as shown in dotted lines. Any suitable audible or visual signaling means may be associated with a flag 10 to attract attention to the latter. In Figs. 1 and 2, I have shown the master weight 17 in the form of a bell having a tongue 49, and I have provided a plurality of incandescent electric bulbs 50. The latter serve not only as a means for attracting attention to the flag, but also to illuminate the described controlling devices at night to facilitate their adjustment. When the master weight is in the form of a bell, as it is swung to and fro by the action of the flag flying in the breeze, the bell is rung and attention is attracted thereto. On the other hand, the weight of the bell controls the flag and prevents the latter from being carried over its pulley and becoming tangled.

Referring now to Fig. 5, I have there shown a signaling apparatus similar in most respects to that hereinbefore described, but in which the flag is hung horizontally instead of vertically, and therefore its gromets 11 are disposed one above the other. In this case, an auxiliary weight 18 is clamped onto the flag at or near the lower gromet 11, while a similar device 18 clamped onto the upper margin of the flag supports the latter by being suitably connected to the halyard 12, preferably by carrying the latter through the passage 46 shown in Fig. 3 and securing the halyard therein by the clamping screw 47. In other respects, this form of my invention is or may be the same as or similar to the arrangement shown in Fig. 1.

Referring now to Figs. 6 and 7, I have there shown my invention as applied to a flag flying from a vertical flagstaff. Here most of the parts are the same as in the forms previously described, except for some slight re-arrangements and modifications to adapt them to the vertical arrangement. In this form, I have shown a master weight 17′ consisting of a ball which may be hollow and filled with lead shot to increase its weight, and from this ball is hung a suitable bell 50. An upwardly projecting plate 25′ similar to the plate 25 hereinbefore described serves an additional purpose by carrying a pair of guides 51 and 52 for the two leads respectively of the halyard 12. These guides may be of any suitable construction, but herein they are formed by providing a wire or rod 53 with an offset portion 54 which extends through a perforation 55 in the plate 25′, as best shown in Fig. 7. Preferably, the guides 51 and 52 are in the form of eyes which are bent as shown in Fig. 6 to facilitate the insertion of the leads of the halyard and to prevent the latter from becoming accidentally detached therefrom.

In this form of my invention, the master weight 17′ serves as a controller for the flag and halyard, and even though both should become wrapped about the flagpole 13, yet the weight exerts a constant downward tension serving to unwind the flag and halyard from the pole as soon as the breeze

dies down to such an extent as to allow the flag to become relaxed. In other respects, the parts are identical with those hereinbefore described, and differ only as to slight details and relative arrangement.

It should now be evident that the apparatus is capable of adjustment to suit flags of a wide range of sizes, and also various conditions, such for example as the relative arrangement of the flag and flagpole in either horizontal or vertical positions of each.

While I have herein shown and described certain forms or embodiments of my invention for illustrative purposes, and have disclosed and discussed in detail the constructions and arrangements incidental to several specific applications thereof, it is to be understood that the invention is limited neither to the mere details or relative arrangements of parts, nor to its specific embodiments herein shown, but that extensive deviations from the illustrated forms or embodiments of the invention may be made, without departing from the principles thereof.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to a generally vertical edge of said flag, and a generally vertical member on which said weight or weights are mounted to slide in a generally vertical direction.

2. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, a member on which said weight or weights are mounted to slide in a generally vertical direction, and another weight carried by said member.

3. In a signaling apparatus, the combination of supporting means, a flag supported thereby, a member suspended freely in a generally vertical position adjacent the margin of said flag, and a weight secured to said margin and mounted to slide in a generally vertical direction on said member.

4. In a signaling apparatus, the combination of supporting means, a flag supported thereby, a member suspended freely adjacent the margin of said flag to swing laterally with relation to said supporting means, a weight carried by said member to govern its movements, and another weight secured to said margin and mounted to slide up and down on said member.

5. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, a freely suspended weight, and freely suspended flexible means connecting said weight with said flexible signaling means to control the latter.

6. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, and flexible controlling means supported in part directly by said flexible signaling means and in part by said supporting means.

7. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, and flexible controlling means including one or more fastening elements secured to said flexible signaling means, and a freely suspended flexible element which guides said fastening element or elements vertically.

8. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, and flexible controlling means including one or more fastening elements secured to said flexible signaling means, a flexible element secured to said fastening element or elements, and a weight suspended by said flexible element.

9. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, a freely suspended weight, and vertically extensible flexible means connecting said weight with said flexible signaling means to control the latter.

10. In a signaling apparatus, the combination of supporting means, flexible signaling means supported thereon, and flexible controlling means including one or more fastening elements secured to said flexible signaling means, a flexible element seemed to said fastening element or elements, and means providing for adjustment of the effective length of said flexible element.

11. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, and a flexible element providing a guide on which said weights are freely slidable.

12. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, a flexible element connecting said weights and another weight suspended from said flexible element.

13. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights having means for adjustably securing them to said flag, a flexible element connecting said weights and another weight suspended from said flexible element.

14. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights having clamping means for securing them to said

flag, a flexible element connected to said weight or weights, and another weight suspended from said flexible element.

15. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag and provided with guiding means, a flexible element guided by said guiding means and another weight suspended from said flexible element.

16. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, a flexible element connected to said weight or weights, means providing for adjustment of the effective length of said flexible element, and another weight suspended from said flexible element.

17. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, a flexible element connected to said weight or weights, and another weight having means for adjustably securing the same to said flexible element.

18. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including one or more weights secured to said flag, a flexible element connected to said weight or weights, a support to which said flexible element is adjustably secured, and another weight suspended from said flexible element.

19. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including a weight secured to said flag, a flexible element connected to said weight, a support for said flexible element, and another weight suspended from said flexible element, said flexible element being adjustably secured to said support and to the last-mentioned weight.

20. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including a weight having clamping means whereby it is secured to said flag, and having also guiding means, a flexible element guided by said guiding means, a support for said flexible element including a cleat and an eye, another weight suspended from said flexible element, said flexible element being secured to said eye and extending therefrom in a downward direction to the last-mentioned weight, then in an upward direction to said cleat to which it is secured, and having its terminal portion extending in a downward direction, and means adjustably to secure said terminal portion to another part of said flexible element.

21. In a signaling apparatus, the combination of supporting means, a flag supported thereby, and flag-controlling means including a weight having clamping means whereby it is secured to said flag, and having also guiding means, a flexible element guided by said guiding means, a support for said flexible element including a cleat and an eye, another weight suspended from said flexible element, said flexible element being secured to said eye and extending therefrom in a downward direction to the last-mentioned weight, then in an upward direction to said cleat to which it is secured, and having its terminal portion extending in a downward direction, and means adjustably to secure said terminal portion to another part of said flexible element, the last-mentioned means comprising a wire wound about said terminal portion and about such other part of said flexible element.

22. In a signaling apparatus, the combination of supporting means, a flag supported thereby, a halyard connected to said flag, and flag-controlling means including a weight secured to said flag and having means to receive said halyard and having guiding means, a flexible element guided by said guiding means, and a weight suspended from said flexible element.

23. In a signaling apparatus, the combination of supporting means, a flag supported thereby, a halyard connected to said flag, and flag-controlling means including a weight secured to said flag and having means to receive said halyard and having guiding means, a flexible element guided by said guiding means, and a weight suspended from said flexible element, the last-mentioned weight having guiding means for said halyard.

24. In a signaling apparatus, the combination of visual signaling means, audible signaling means, and means flexibly supporting and uniting both of said signaling means in coöperating relationship.

25. In a signaling apparatus, the combination of supporting means, a flag supported thereby, a member suspended freely adjacent to the margin of said flag to swing naturally therewith, and a weight secured to said margin and mounted to slide up and down on said member.

In testimony whereof I have signed my name to this specification.

JOHN J. BUCKLEY.

Correction in Letters Patent No. 1,338,210.

It is hereby certified that in Letters Patent No. 1,338,210, granted April 27, 1920, upon the application of John J. Buckley, of Boston, Massachusetts, for an improvement in "Signaling Apparatus," an error appears in the printed specification requiring correction as follows: Page 4, line 101, claim 10, for the word "seemed" read *secured;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 25th day of May, A. D., 1920.

[SEAL.]

M. H. COULSTON,

Acting Commissioner of Patents.

Cl. 116—173.