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A. J. MYER, OF BUFFALO, NEW YORK.

IMPROVED SYSTEM OF SIGNALING.

Specification forming part of Letters Patent No. **31,256**, dated January 29, 1861.

To all whom it may concern:

Be it known that I, A. J. MYER, of Buffalo, in the county of Erie and State of New York, have invented a new and improved mode of signaling for out-of-door or field use by which signals of any meaning can be made with apparatus easily portable and capable of being used for purposes of communication between points distant from each other on land; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figures 1, 2, 3, and 4 represent an apparatus for illustrating the operation of my invention.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists in the combination of motion with a signal or signals, either day or night signals, the motions or combinations of motions of the signal or signals indicating any required information.

The combination of motion with a signal or signals is used, first, because signaling may thus be more rapid and of varied meaning, there being added to the value of the signal the value of the motion combined with it, this motion having meaning; the time is saved that otherwise is lost in rests; second, that the signals may be legible at greater distances than signals at rest or stationary can be legible; third, that signals may be made for long distances, by day or night, with more simple, convenient, and portable apparatus or appliances than it appears have hitherto been used for any complete or systematized plan of field signaling or telegraphing—*i. e.*, a plan intended to convey messages of any length or description.

The mode differs from the plans of semaphores or of flag signals in the fact that by them signs or signals have no meaning unless at rest or occupying a fixed position, and indeed cannot be read until they are put and allowed to remain in such fixed position, such fixed position of the objects relatively to each other being the understood sign or signal, the motions of the objects in going to the position or from the position or to another position being of no meaning and not being read or considered. By my mode the signal or signals need have no meaning in any fixed position they may be put or may occupy, but all motions with which the signals is combined are of value and have meaning.

To enable others skilled in the art to fully understand and employ my mode of signaling, I will proceed to describe it minutely.

Letter F indicates the fixed position at which the movable signal-staff is attached by a joint. S is the attached signal. Its meaning may be varied by increase of number or change of color or position. The signal-staff might be attached by a universal joint, as at F^2, or the portion of the staff and the signal below the joint F^2 may be dispensed with. The position F and the signal S are marked by lights at night. Now the signal-staff at rest with the signal S occupying any of the positions 1 2 3 4 5 6, &c., no meaning is indicated, (the signs of semaphores, on the contrary, have no meaning unless they are so at rest,) but while making the movement necessary to attain any of the marked positions 1 2 3 4 5, &c., the direction and length of the movement may have value. The staff having attained the position either remains at rest or returns to its original position, or commences and makes another movement, so as to combine two or more movements, each movement or combination of movements having its value. Thus if leaving its position 1 the signal S describes the quarter-circle from S to 2, or the semicircle from S to 5, or the entire circle from S through 5 to S, moving to the left, or if (the joint F^2 being universal) the signal S drops vertically in the line S through F to 5, or being put in the position 3 is moved horizontally, as from 3 through F to 7, or in the reverse direction, each of these movements combined with the signal becomes visible and indicative of meaning. So by combinations of these movements, as from S, by the left to 7, then back through S to 3, a quarter-circle combined with a half-circle, or from S to 7, then from 7 through S to 3, then from 3 to S to 7, then back from 7 to S, a quarter-circle to the right combined with a half-circle to the left and a half-circle to the right and a quarter to the left again to the original position, may these meanings be combined, as are the motions, to any desired extent.

It is held that by such a mode movements

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having meaning may be used to convey information more rapidly than any other signals can convey information, because there is no loss of time by rests. Now vocabularies may be formed and each of the above motions or combinations of motions may indicate sentences, characters, or numerals. If the quarter-circle S to 3 back to S is known as one, S to 7 and back to S as two, the semicircle from 7 to 3 through S as three, and the semicircle from 3 to 7 through S as four, then *a* may be indicated by 1 and made by the combination of the signal with the proper motion for that letter. B may be known and made as 2, C as 13, D as 23, E as 22, F as 11, the combination of the motion with the signal having no value when the signal is returning to the position of rest. Thus *a* or 1 is made by moving the signal S to the position 3 and returning the signal to its original position. B is made by moving the signal to 7 and returning to the original position; C, by moving the signal to position 3, then back to 7 and to its original position; D, by moving the signal to 7, then through S to 3, then back to S; E, by moving the signal to 3, back to S, again to 3, and again to S. All letters, figures, or characters are thus indicated by a few motions combined with the signal.

It is known that the combinations required for outdoor signaling may be made with much simplicity. The desideratum has been to secure rapidity in making signals and in combining them. These signals may be made with a rapidity only limited by the power of the eye to recognize the motion and the combinations such as readily follow each other in the natural sequence of the motions.

It is evident that for many purposes the signals may be made and combined by a proper signal-staff and signals held in and moved by the hand, and these will be visible and legible, sufficing for ordinary purposes.

I am aware that motions have been used in some sense as field-signals. Thus flags have been waved to start and equally to stop railroad-trains; but this was really to make the flag visible and to attract attention. The hand is sometimes waved by surveyors to indicate motion to the right or to the left; but this is for short distances and not for conveying arbitrary messages. I am aware, also, that objects have been put in motion to indicate some prearranged information. I do not claim such use; but I believe I have been the first who by study, experiment, and practical use has devised, brought into practicable shape, and demonstrated as ready for use by intelligent persons anywhere the combination of motion with signals for out-of-door or field use for the purpose of conveying any information or intelligence or message whatever by day or night without the necessity of ponderous apparatus or complicated instructions.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of motion with a signal or signals, either day or night signals, for out-of-door or field use as applied to a complete system of field-signaling, in which all letters or figures or combinations of letters or figures are indicated by distinct motions or combinations of motions, each motion or combination having a separate and understood value, substantially as set forth.

The above specification of my improvement in signaling signed by me this 21st day of August, 1860.

A. J. MYER.

Witnesses:

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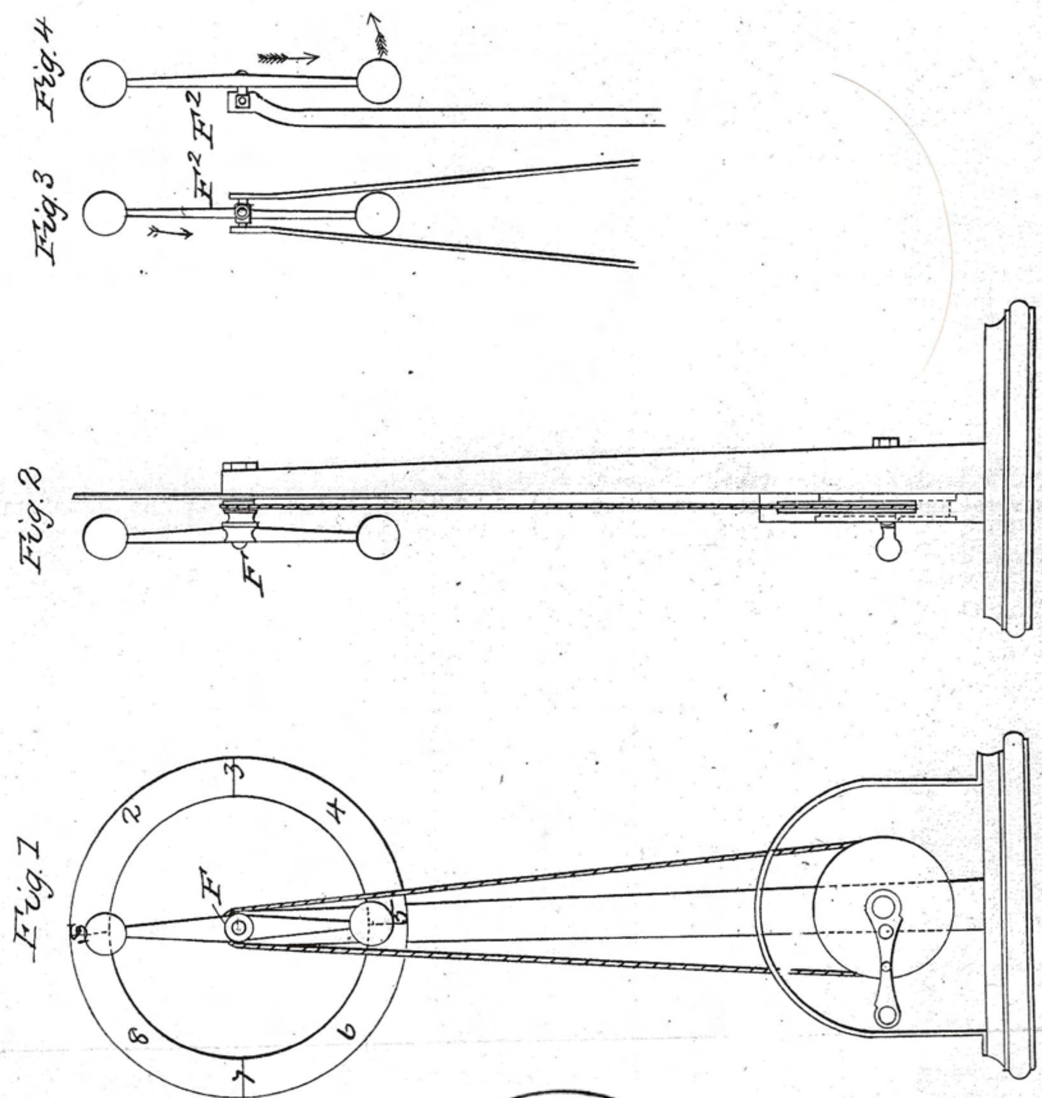
ERWIN D. SPINK.

A. J. MYER.

Signaling Apparatus.

No. 31,256. Patented Jan'y 29, 1861.



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