

(No Model.)

2 Sheets—Sheet 1.

C. VREEDE.

CONTACT APPARATUS FOR TELEGRAPHING.

No. 576,243.

Patented Feb. 2, 1897.

Fig. 3

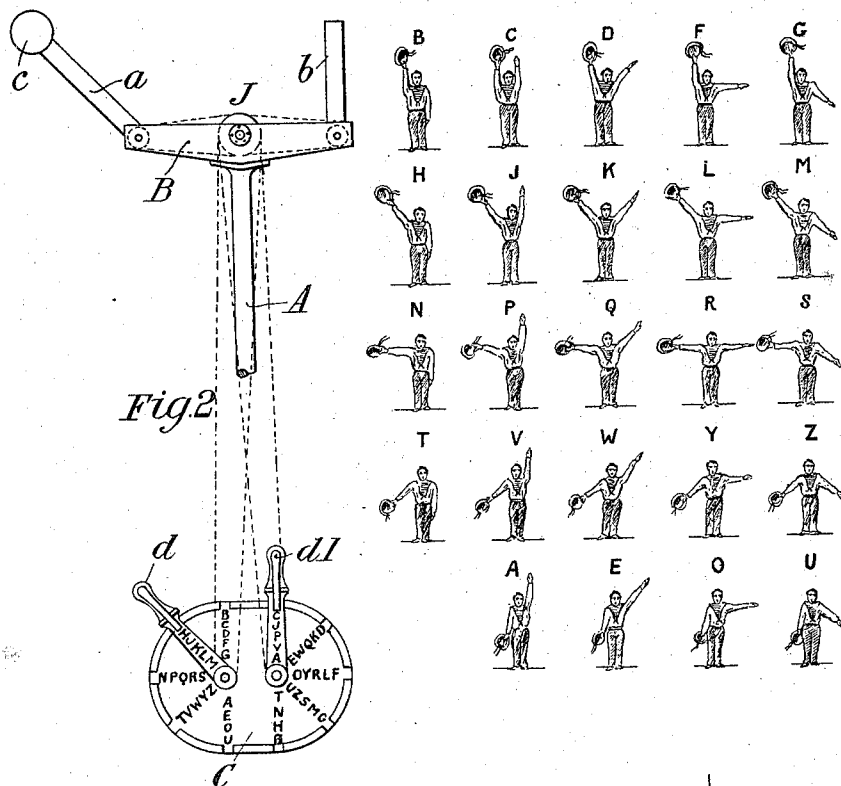
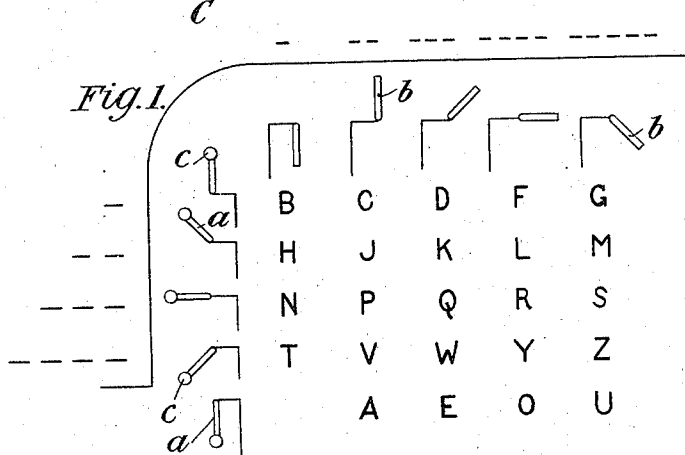


Fig. 1



Witnesses:
L. C. Hall
L. D. Kingberry

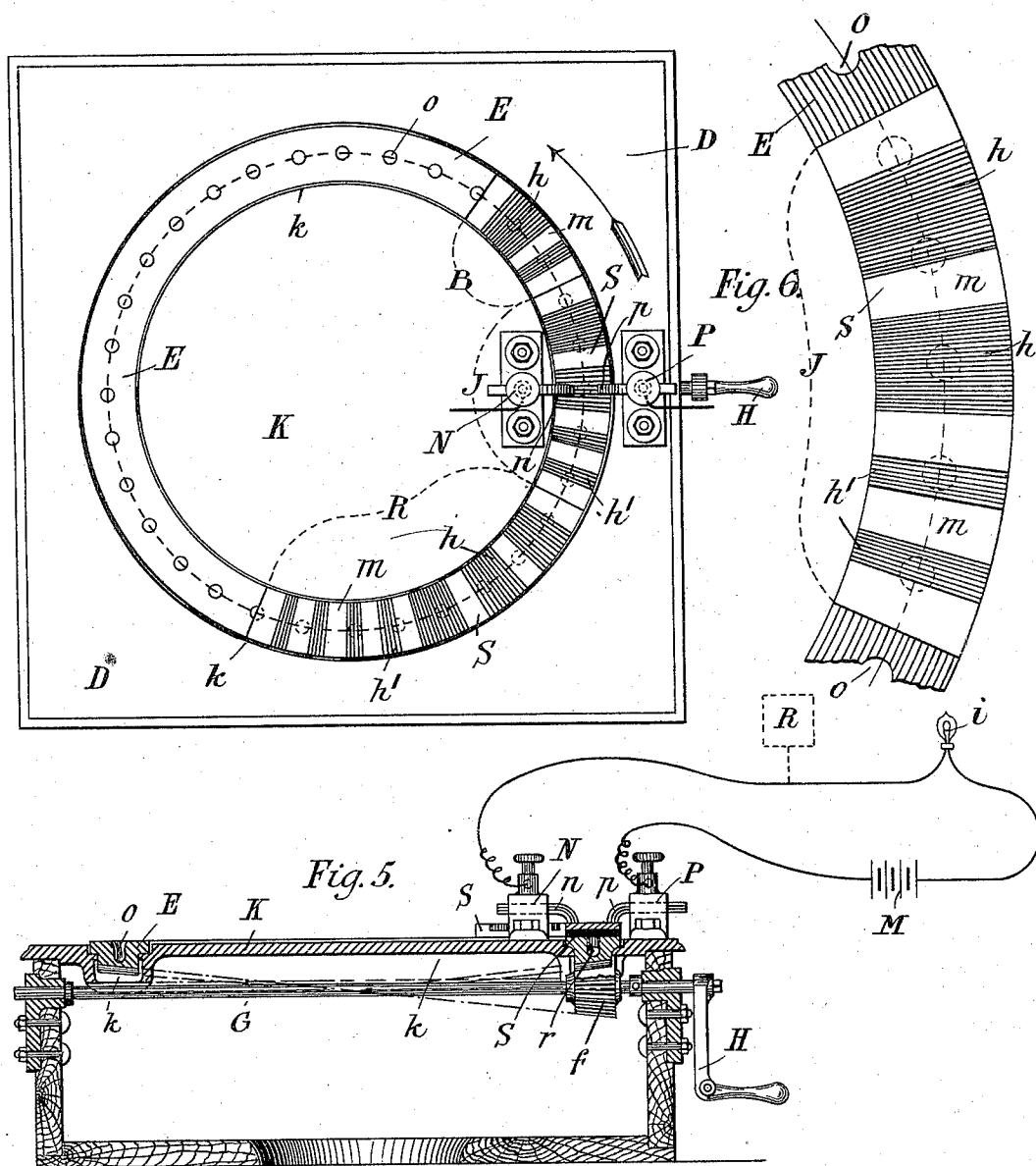
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2 Sheets—Sheet 2.

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Fig. 4.



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UNITED STATES PATENT OFFICE.

CORNELIS VREEDE, OF ROTTERDAM, NETHERLANDS.

CONTACT APPARATUS FOR TELEGRAPHING.

SPECIFICATION forming part of Letters Patent No. 576,243, dated February 2, 1897.

Application filed January 6, 1896. Serial No. 574,503. (No model.)

To all whom it may concern:

Be it known that I, CORNELIS VREEDE, commander Royal Dutch Navy, a subject of the Queen of the Netherlands, and a resident of 29 Avenue Concordia, Rotterdam, in the Kingdom of the Netherlands, have invented a Contact Apparatus for Night Signaling and Telegraphing, of which the following is a specification.

The international code up to date failed in semaphoric, night, and sound signaling, the first being very seldom, the last never used, for the reason, I venture to say, that it lacks a basis or code common to all upon which such signaling may easily, say automatically, be performed. Upon my proposals the Dutch Government has for some years adopted a system of semaphore and semaphoric-arm signaling for the army and naval forces, and I intend its basis or code to be that of night as well as sound signaling. In order to explain this code for arm, night, and sound signaling, I will proceed to describe in the first place how it is used for the arm-signaling and next proceed to describe its use for night and sound signaling and telegraphing.

In the accompanying drawings, Figure 1 is a diagram illustrating a key to the code or basis. Fig. 2 is an elevation of a semaphore employed for day-signaling. Fig. 3 is a diagram illustrating the arm-signaling herein-after referred to. Fig. 4 is a plan and Fig. 5 a vertical section of the signaling apparatus according to my invention; and Fig. 6 is a view of a detail of Figs. 4 and 5, drawn to a larger scale than that of the two latter figures.

Like letters indicate like parts throughout the drawings.

With reference first to the key represented in Fig. 1 of the annexed drawings, the different letters of the alphabet are placed in five horizontal rows. Any letter will be signed by the signal at the beginning of the horizontal row upon which the said letter is placed, and to which will be added that at the top of the vertical line of the same letter. I think this will explain sufficiently why, for instance, the letter "J" will be signaled by the semaphore, as is shown in Fig. 2 of the draw-

ings. This semaphore A has at both ends of a horizontal frame B equilibrated arms *a* and *b*, one of which is provided with a disk plate *c*, while at the foot a board C, with two handles *d* and *d'*, one for each arm *a* and *b*, is provided. The semaphore A, with the board C, may be made to turn toward the observer. The different letters are inscribed on the board C.

The arms of the semaphore are worked by endless chains or in any other suitable way, signaling being performed immediately by bringing the handles *d* and *d'* in the positions of the desired letter marked on the board C.

A code for arm-signaling identical to the semaphoric signaling is shown in full in Fig. 3 of the accompanying drawings and needs no special explanation.

At night the different letters are signaled by means of long and short flashes of one white brilliant light and by sound by means of long and short or of high and low tuned blasts of the steam-whistle.

In Fig. 1 flashes and blasts are represented by long and short dots, the long dots being arranged on the left-hand side and the short ones above the code. So the letter "J" will be signaled thus ——— (long dots) of the horizontal and — — (short dots) of the vertical line on which this letter is placed, making altogether four flashes or blasts thus: — — — —.

The letter "X" will be signaled by a combination of the letters "K" and "S," whereas the vowels at night and by sound will be signed by one, two, three, or four short flashes or blasts, preceded by a pair of three shorter ones. This, as will be seen, differs from the day vowel-signaling.

Numerals, if required, may be represented by signs as well.

The Washington Conference set forth after close examination that night-signaling should be based on the principle of long and short flashes of one white light, and I believe my apparatus will be found to suit their intention, whereas I believe by experience this code is to be got much easier at one's fingers' ends than ever Morse's will do.

Having now set forth it to be my intention

to give the international code or any other a basis upon which signaling may be performed as well at day, by night, or by sound, which basis is common to all, I will now proceed to
5 describe the contact apparatus for night or sound signaling and telegraphing.

In a box D a non-conducting ring E is mounted in a groove *k* of the lid K. The ring E is toothed at the under side and may be
10 rotated by means of a bevel-wheel *f*, mounted on a horizontal axle G, a handle H being provided outside the box for rotating the axle G. The ring E should be revolved regularly and can as well be rotated automatically by means
15 of clockwork. Upon the said ring E sectors S may be readily put in place and after use readily removed. These sectors are inlaid with radial conducting-strips *h h'* of two different breadths, say three to one, to correspond to the "longs" and "shorts" of the
20 alphabetic scheme, Fig. 1, and to the flashes representing the vowels, if desired. The parts *m* between the strips *h h'*, being non-conducting, represent the eclipses. All the
25 sectors will be inscribed with the letter which they represent, one sector being devoted to one letter. Other sectors representing the attention-signal and the stop and answering signal, &c., will be provided for.

30 The letter "J," consisting of two long strips (flashes) *h h* and two short strips *h' h'*, is represented in Fig. 4 just touching the contacts P and N. The scope of the sector is indicated by a dotted "brace." The sectors S bear pins
35 *r r* at the bottom, which fit in holes *o* of the ring E, and in this way the sectors can be readily inserted in place and firmly held on the ring E and are to be removed with the same ease.

40 Although pins are indicated to enter the holes in the ring E, such joint does not make part of my invention, and I accordingly reserve the right to make use of any other suitable means for fixing the sectors S to the ring
45 E, so as to be able to place them on the ring or to take them off again in the shortest possible time.

Fig. 6 represents in plan one of the sectors on the revolving ring which I use to sign electrically the different long and short flashes.
50

The box D is placed in an electric circuit, as shown in Fig. 5, which includes a battery or dynamo at M and signal-lamp *i*, or when on shore includes the receiving-station R.

55 The dots or dashes shown by the signal-lamp *i* will enable a man to open during the same time by hand the steam-whistle or the screen of a search-light. This is preferred to the use of a magnetic device for performing the same
60 operation.

At the box D the electric current from the dynamo M is cut off at the contacts N and P by the non-conducting revolving ring E or its non-conducting sectors, suitable brushes *n*
65 and *p* or equivalent contacts being provided,

which bear upon the conducting-strips when they pass by.

As the sectors revolve with the ring E when the hand or clockwork or other motor is at work, the electric current, which was cut off
70 at N and P, will be allowed or not to pass through to the signal-lamp *i* or to the receiving-station, the conducting-strips *h* and *h'* re-establishing for a longer or shorter period the circuit.
75

By placing the wished-for lettered sectors in due succession on the ring E (in Fig. 4 the sectors for the letters "B," "T," and "R" are in place) and controlling the letters or the word to be telegraphed before starting any-
80 body can signal at first sight without any difficulty, free from mental influences, better than a telegraphist can do.

The "longs" and "shorts" will be reproduced at the receiving-station just as is done
85 now, while the observer at sea may be provided with an apparatus by means of which the "longs" and "shorts" are traced by pushing a pencil on a paper strip moved automatically.
90

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a contact apparatus for night signaling and telegraphing, the combination with
95 an electric circuit normally interrupted, a source of electrical supply, a support, a ring rotatably mounted on said support, segmental strips of non-conducting material removably
100 secured to the ring, conducting-strips carried by the segmental strips, said conducting-strips being of varying widths as specified, and being separated electrically from each other, and electrical contacts adapted to come in contact
105 with the different conducting-strips when the ring is rotated, and close the electric circuit, in the manner set forth.

2. In a contact apparatus for night signaling and telegraphing, the combination with
110 an electric circuit normally interrupted, a source of electrical supply, a support, a ring rotatably mounted on said support, segmental strips of non-conducting material carried by the ring, conducting-strips carried by the segmental
115 strips, and being separated electrically from each other, and electrical contacts adapted to come in contact with the different conducting-strips when the ring is rotated and close the electric circuit in the manner
120 set forth.

3. In a contact apparatus for night signaling and telegraphing, the combination with
125 an electric circuit normally interrupted, a source of electrical supply, a support, a ring rotatably mounted on said support, segmental strips of non-conducting material removably secured to the ring, a motor or operating
130 shaft, gearing between the latter and the ring, conducting-strips carried by the segmental

strips, the conducting-strips being separated electrically from each other, and electrical contacts adapted to come in contact with the different conducting-strips when the ring is
5 rotated and close the electric circuit in the manner set forth.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of two witnesses, this 19th day of December, 1895.

CORNELIS VREEDE.

Witnesses:

AIRE H. VOORWINDEN,
L. S. REQUE.