

No. 749,815.

PATENTED JAN. 19, 1904.

R. W. EARLE & N. GOODYEAR.

SIGNALING APPARATUS.

APPLICATION FILED JULY 11, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 2.

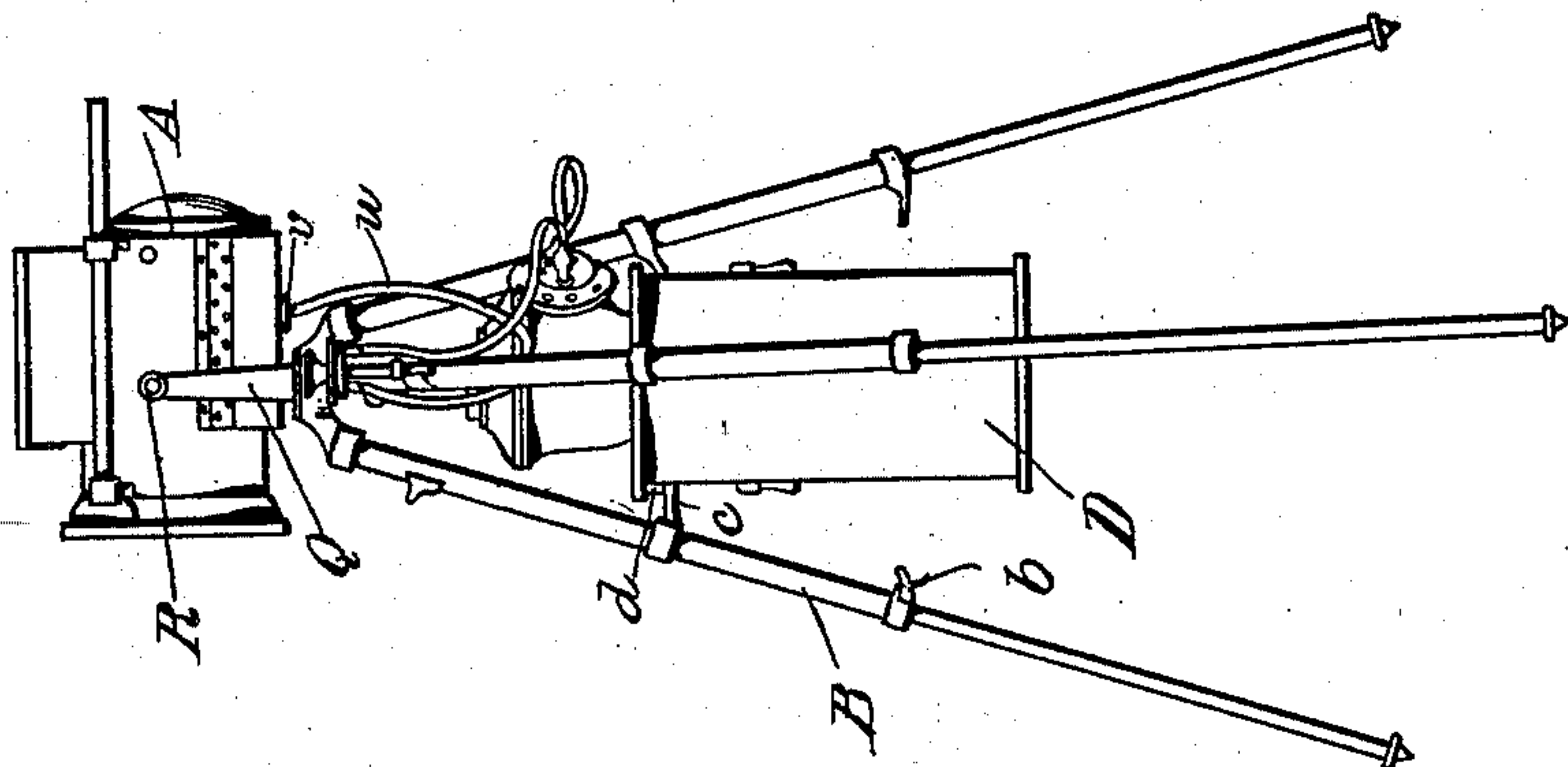
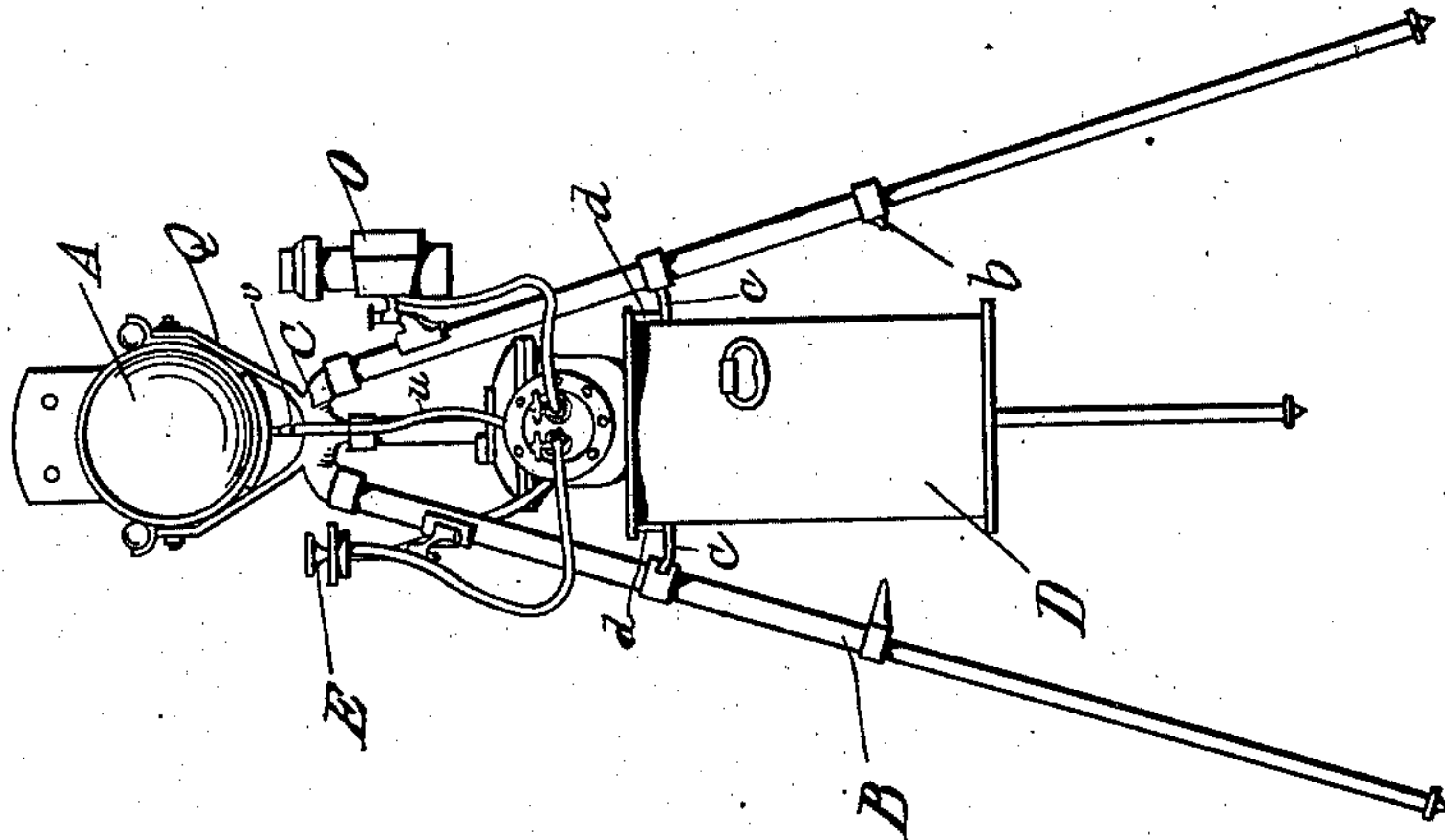


Fig. 1.



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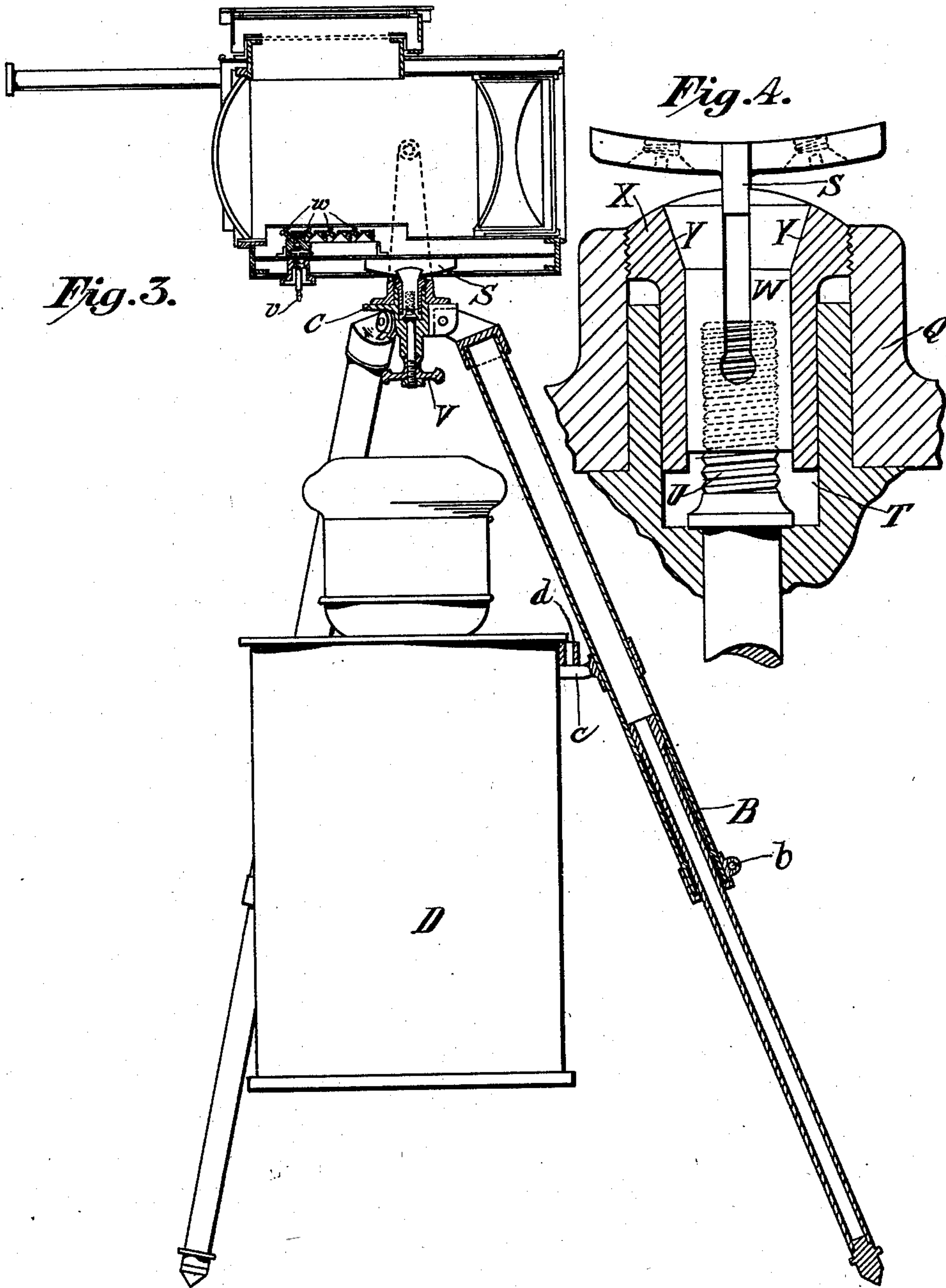
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

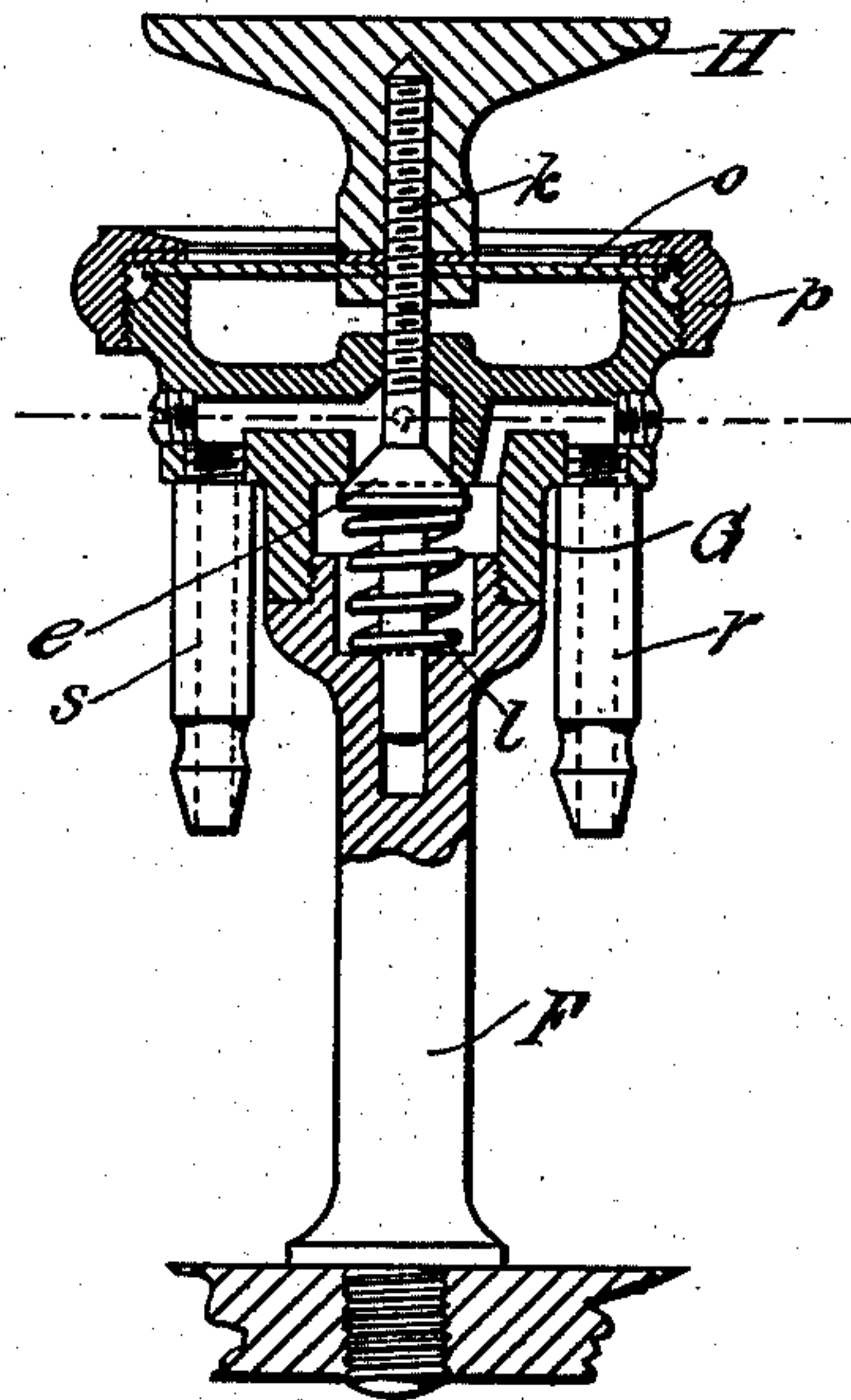


Fig. 6.

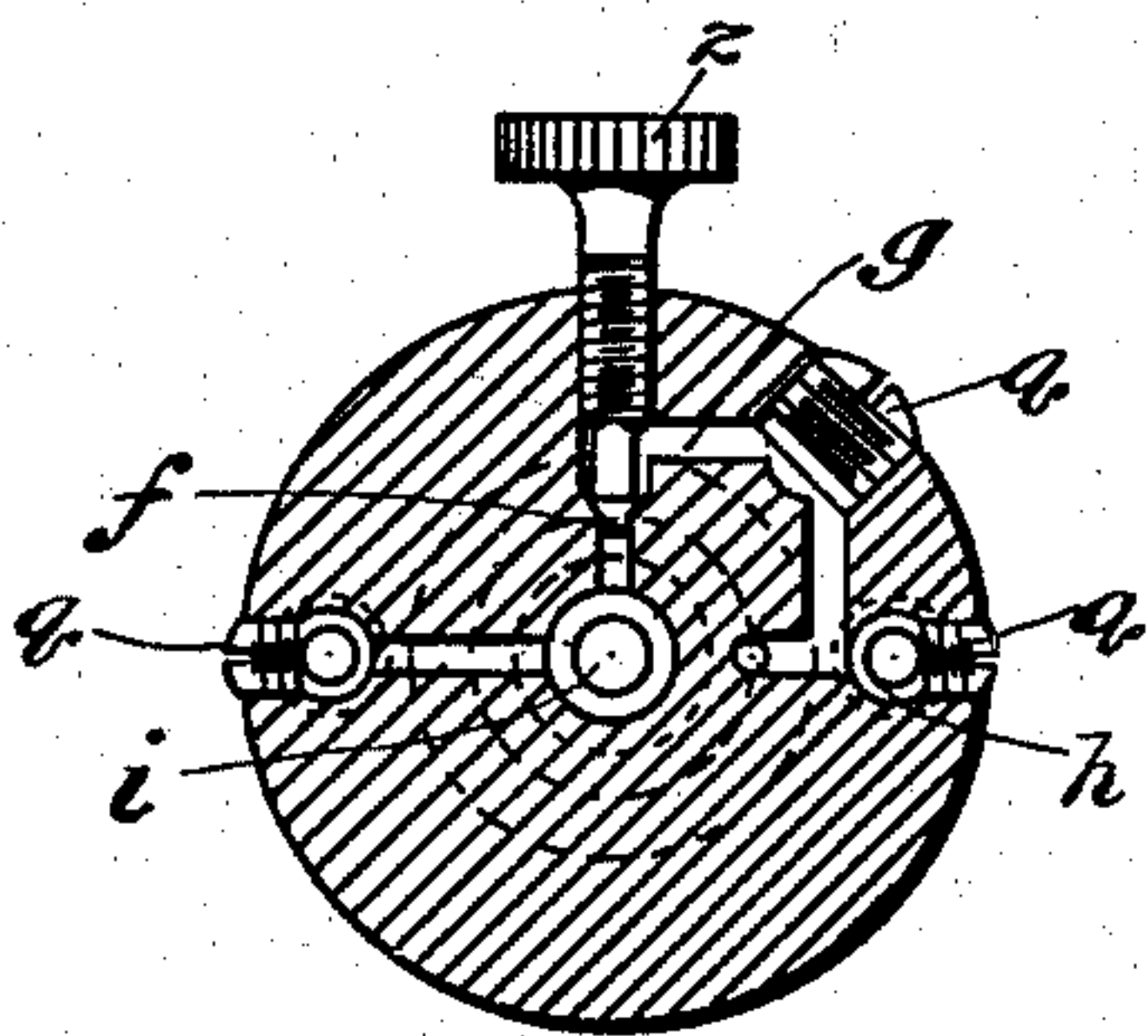
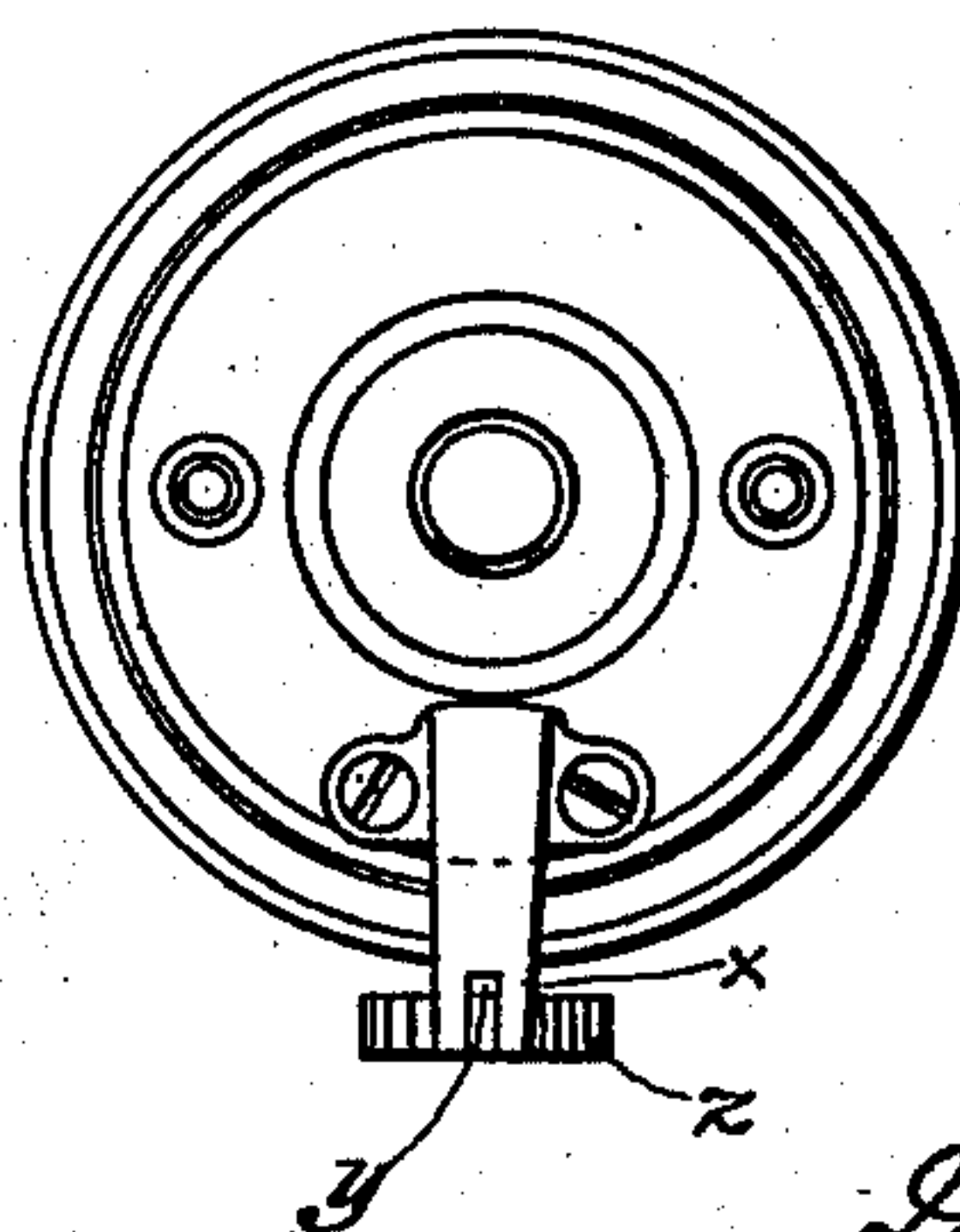


Fig. 7.



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UNITED STATES PATENT OFFICE.

REGINALD W. EARLE, OF BROOKLYN, AND NELSON GOODYEAR, OF FLUSHING, NEW YORK, ASSIGNORS TO J. B. COLT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 749,815, dated January 19, 1904.

Application filed July 11, 1902. Serial No. 115,164. (No model.)

To all whom it may concern:

Be it known that we, REGINALD W. EARLE, residing in the borough of Brooklyn, city and county of New York, and NELSON GOODYEAR, residing at Flushing, Long Island, State of New York, citizens of the United States, have invented certain new and useful Improvements in Signaling Apparatus, of which the following is a description accompanied by drawings.

Our invention relates to signaling apparatus, but more particularly to that class of such apparatus operated by means of flash-lanterns.

The objects of our invention are to simplify and strengthen such apparatus and improve its efficiency of operation, to enable the lantern to be readily adjusted, and to afford ready means for securing the generator to the apparatus and removing it therefrom.

Further objects of our invention will hereinafter appear; and to these ends our invention consists in apparatus for carrying out the above objects arranged and constructed and having the general mode of operation substantially as hereinafter fully described and shown in this specification and accompanying drawings, in which—

Figure 1 is a rear elevation of a tripod and signaling apparatus embodying our invention. Fig. 2 is a side elevation of the same. Fig. 3 is a side elevation of the apparatus, partly in section, with the reading-lamp and signaling-key removed. Fig. 4 is a detail sectional view of the means for adjusting the signaling-lantern. Fig. 5 is an enlarged detail sectional view of the signaling-key. Fig. 6 is a sectional plan view of the key on the line 6 6 of Fig. 5, and Fig. 7 is a top plan view of the signaling-key.

Our invention is adapted more particularly for use in acetylene flash-lanterns for use in signaling apparatus, although we are not to be understood as limiting ourselves to any one class of lantern.

While we have shown our invention as applied to a portable signaling apparatus, some

of the features of our invention may be used in connection with other signaling apparatus of any type to which they may be applicable.

Referring more particularly to the drawings, any suitable lantern for signaling is supported upon a suitable frame or support, (shown in this instance as a tripod B,) the legs of which are preferably extensible and are shown as telescopic, with means provided, as at *b*, for adjusting their length. The lantern A may be removably attached to the frame or tripod B and packed in any suitable receptacle for transportation, and the tripod itself may be dismounted or taken apart and packed for transportation, the legs of the tripod being secured in any suitable manner to the central frame or table C.

The flash-lantern A in this instance is illustrated as an acetylene-lantern to which acetylene gas must be supplied from a suitable source, and D represents an acetylene-generator of any preferable or desirable type, which is removably attached to the frame or support of the lantern. According to our invention means are provided for securing the generator D to the legs of the tripod B, and while various means may be provided for accomplishing this end we prefer to use hooks on either the tripod or the generator and pieces or members coöperating therewith, so that the generator may be hooked to the tripod. As shown in this instance, there is a hook *c* on each leg of the tripod, with which the hollow lugs or eyes *d* on the generator coöperate, so that the generator may be hung between the legs by means of the hooks and lugs. This construction serves not only to securely support the generator, but it also strengthens the apparatus and affords means for keeping the legs in proper position, thus providing a rigid structure.

In transporting the apparatus the generator may then be removed from the frame and packed and carried as desired.

Suitable gas connections must be arranged between the generator D and the lantern A—

as shown, flexible pipes being provided for this purpose—and in the gas connections between the generator and the lamp is provided a signaling-key E in order to cause the lamp
5 to flash and transmit the signals. Figs. 5, 6, and 7 show the construction of the key in detail—as shown in this instance, the key itself being removably secured to one of the legs of the tripod by any suitable means, so that it
10 may be removed therefrom as desired and cleaned or adjusted when necessary, at the same time the liability of injury in the course of transportation being prevented.

The key E is provided with a main valve *e*
15 and an auxiliary valve *f*, shown in this instance as a needle-valve, which controls a by-pass *g*, connecting the inlet *h* with the main duct *i* of the valve in such manner that, although the main valve may be closed, gas
20 may always be admitted through the by-pass, the amount admitted being controlled by the needle-valve *f*. To the frame or stem F of the key is shown secured the valve-casing G, within which are arranged the by-pass and
25 main duct, while the stem *k* of the main valve *e* is vertically movable in the stem F and casing G, a suitable spring *l* or other means being adapted to press the valve *e* against its seat. A suitable finger-piece H, which may
30 be of hard rubber, is connected to the valve-stem *k*, and preferably a flexible diaphragm *o* is adapted to be secured over the top of the casing G by means of the cap *p*, said flexible diaphragm therefore operating as a stuffing-
35 box to prevent leakage, while at the same time allowing vertical movement of the valve *e* and valve-stem *k*. In order to afford ready means for cleaning the passages in the casing G, screw-plugs *q* or other suitable means are ar-
40 ranged in the casing G, by removal of which access may be obtained to the valve-passages. The valve-casing G is also provided with inlet and outlet pipes or nipples, the inlet-nipple being represented by *r* and the outlet-nipple
45 by *s*.

The signaling-key having been secured to one of the legs of the tripod B, flexible or other pipe connections are arranged between the generator D and the inlet-nipple *r*, while
50 a flexible connection *u* is arranged between the outlet-nipple *s* and the lantern A, the pipe connection *u* leading to the lantern being preferably attached to a nipple *v* on the lantern, which connects with the lantern-burners.
55 Each burner on the lantern is provided with a screw-plug or valve *w*, so that any particular burner may be cut out should it become broken or should it be desired to cut off the flow of gas to any burner. Means are pro-
60 vided for maintaining the needle-valve *f* in any given position to which it has been adjusted, as shown, there being a spring *x* secured to the casing G and having a notch *y* at its end, with which the serrations on the

thumb-screw *z* of the valve *f* are adapted to 65 coöperate to maintain the valve in any given position.

In operating or signaling with the flash-lantern the by-pass key or valve *f* is screwed in until the flames are quite low—say about 70 a quarter of an inch high—and then pressure on the button or finger-piece H of the signaling-key will turn the flames up instantly, producing a flash. The key is operated in substantially the same manner as a telegraph in- 75 strument, but more slowly.

According to our invention, in order to afford means for reading in addition to the flash-lantern we arrange a reading lantern or lamp O on the frame or tripod B and preferably removably secure the reading-lamp O to 80 one of the legs of the tripod in any suitable manner, as by means of a screw coöperating with a lug on the tripod. With this provision means are at hand for reading printed 85 matter or other messages. As shown, there is a gas connection arranged between the generator D and the reading-lamp O, which may be removed when the apparatus is dismantled and taken apart. 90

Suitable means are provided for adjusting the lantern on the tripod, both horizontally and vertically, in an angular direction. In other words, means are provided for pointing the lantern in any direction desired. As shown, 95 the supporting frame or table C is adapted to carry the lantern-fork Q, the base of the fork resting upon the table C when the lantern is in position. The lantern is pivoted, as at R, to the fork Q and is provided with a 100 segment S at its under portion, coöperating with means for clamping the same in position to adjust the lantern at any angle with the horizontal.

A table or frame C, as shown in this in- 105 stance, is provided with a socket T, within which a screw U is arranged, the shank of which extends downwardly beneath the table and is provided with a thumb-piece V, securely attached thereto, so that by turning 110 the thumb-piece V the screw U will be turned. The fork and frame of the lamp are adapted to be placed over the sides of the socket T, while a split member or plug W is provided with a screw-threaded socket adapted to fit 115 over the screw U. This split member W is loosely supported within the outwardly screw-threaded sleeve X, coöperating with the inner screw-threads on the fork Q, and the member W is provided with shoulders Y, adapted to 120 bearing portions on the sleeve X, whereby when the screw U is rotated by means of the finger-piece V in a given direction the member W will be withdrawn inwardly into the sleeve X and socket T, thereby tending to 125 close the split in said member and clamp the segment S securely in any position to which it has been moved by angular movement of

the lantern. By loosening the screw V the lantern may be turned about a vertical axis, so that by the construction described means are provided for adjusting the lantern in any desired position.

Obviously some features of our invention may be used without others and our apparatus may be embodied in widely-varying forms. Therefore without limiting ourselves to the construction shown and described and without enumerating equivalents, we claim, and desire to obtain by Letters Patent, the following:

1. In a signaling apparatus, the combination with the supporting-legs of the apparatus and a signaling-lantern thereon, of a generator of illuminating-gas, detachably connected between the legs of the apparatus beneath the signaling-lantern and thereby serving to brace the legs of the tripod and fix their position, for substantially the purposes set forth.

2. In a signaling apparatus, the combination of the supporting-tripod and a gas-generator supported by and acting to brace said tripod, one of which is provided with hooks and the other with coöperating means, whereby the generator may be detachably connected to the legs of the tripod and serve as a brace for the same, substantially as and for the purposes set forth.

3. In a signaling apparatus, the combination with the supporting legs or frame, of a signaling-lantern, means for adjusting it upon said frame, consisting of a segment connected to the lantern, a table carried by the frame and upon which the segment is rotatably mounted, and a split member carried by the frame and within which the segment fits, and means for clamping the segment within said split member, substantially as and for the purposes set forth.

4. In a signaling apparatus, the combination with the supporting legs or frame, of a signaling-lantern, means for adjusting it upon said frame, consisting of a segment rigid with the lantern, a table carried by the frame and upon which the segment is rotatably mounted, and a split member carried by the frame for coöperating with the segment, and means for clamping the segment within said member, substantially as set forth.

5. In a signaling apparatus, the combination with the supporting legs or frame, of a signaling-lantern pivotally supported in forks, and means for adjusting said lantern in said forks, consisting of a segment connected to the lantern and movable therewith, a stationary split member carried by the support in a socket within which member the segment fits, and means for withdrawing the split member within the socket, whereby the segment may be clamped in any desired position to adjust the lantern, substantially as and for the purposes set forth.

6. In a signaling apparatus, the combination

with a support or frame, of a flash-lantern, an acetylene-generator removably supported on the frame, connections for gas between the generator the burner of the lantern, a signaling-key and a spring-actuated valve operated thereby and arranged in said gas connections, whereby gas may be rapidly supplied to the lantern and signals flashed therefrom, substantially as and for the purposes set forth.

7. In a signaling apparatus, the combination with a support or frame, of a flash-lantern, an acetylene-generator supported on the frame, connections for gas between the generator and the burner of the lantern, and a signaling-key and plunger-valve arranged in said gas connections and provided with a by-pass for maintaining a small flame in the lantern, whereby the lantern may be suddenly supplied with gas and flashed by operating said key, substantially as and for the purposes set forth.

8. A signaling-key for a flash-lantern, consisting of inlet and outlet pipes with a main quick-action spring-actuated plunger-valve between the same adapted to be operated by pressure, a by-pass connection between said inlet and outlet pipes, and controlled by an adjustable valve, whereby a small flame may be maintained in the lantern by means of the gas entering through the by-pass connection while the admission of gas to said flame for signaling is controlled by the main valve, substantially as and for the purposes set forth.

9. In a signaling apparatus, the combination of a flash-lantern, a support or frame therefor, an additional lamp also supported upon said frame, a common source of fuel-supply mounted on the frame, and detachable connections between the said source and the lantern and lamp respectively, with provision for controlling said connections, for substantially the purposes set forth.

10. The combination of a flash signal-lantern, connections therewith from a suitable source of illuminating-gas under pressure, a plunger-valve controlling the supply of gas to the lantern, and a signaling-key connected to the valve, a resilient diaphragm supporting said key, whereby when the key is depressed the valve is quickly opened to permit free flow of gas to the lantern to flash the same.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

REGINALD W. EARLE.
NELSON GOODYEAR.

Witnesses to the signature of Reginald W. Earle:

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HAROLD BINNEY.

Witnesses to the signature of Nelson Goodyear:

HELEN L. OBERTEUFFER,
H. G. OGDEN, Jr.