

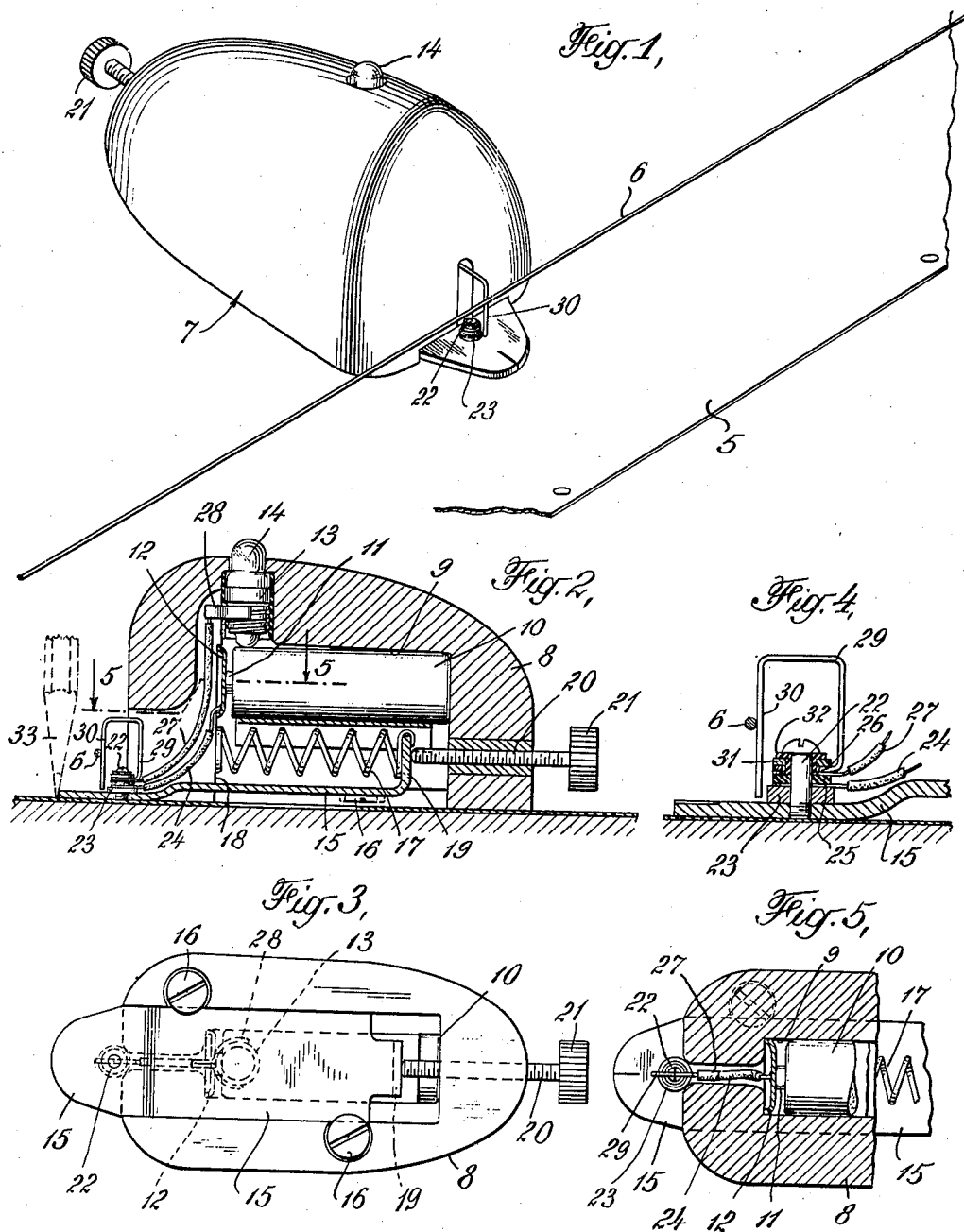
Oct. 12, 1943.

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2,331,669

DEVICE TO FACILITATE DRAWING OF STRAIGHT LINES

Filed Dec. 30, 1942



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UNITED STATES PATENT OFFICE

2,331,669

DEVICE TO FACILITATE DRAWING OF
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Application December 30, 1942, Serial No. 470,701

8 Claims. (Cl. 33—86)

This invention relates to a device to facilitate drawing straight lines of considerable length with greater speed and accuracy.

Where drawings of airplanes, ships and the like are made on a large scale, it is necessary to define straight lines much longer than the usual straight-edge employed ordinarily in drafting. In the conventional method of defining such lines, a piano wire is stretched under considerable tension between two fixed points along the lofting platform about one-half inch above the surface. The loftsmen then takes his square or steel block and moves it into contact with the stretched wire. To work accurately, he must examine the point of contact through a magnifying glass. When he is satisfied that the contact is accurate, the loftsmen marks the loft surface and proceeds to determine other points. Finally, the points are connected with the aid of a straight-edge.

It is extremely difficult, even when a magnifying glass is used, to determine the point of contact with the wire accurately. The element of judgement by the loftsmen is a constant source of possible error, and it is frequently necessary to recheck the line several times before it can be accepted. The procedure is extremely tiring to the loftsmen and it consumes a lot of valuable time.

It is the object of the present invention to provide a simple, compact and effective device which is adapted to avoid the defects mentioned.

Another object of the invention is the provision of an electrically activated device to indicate quickly to the loftsmen the point of reference which he wishes to establish.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and the accompanying drawing, in which

Fig. 1 is a view in perspective illustrating the device and its application;

Fig. 2 is a longitudinal section through the device;

Fig. 3 is a plan view of the under surface of the device;

Fig. 4 is an enlarged view illustrating the contact mechanism of the device; and

Fig. 5 is a section on the line 5—5 of Fig. 2.

Referring to the drawing, 5 indicates a lofting surface and 6 a tensioned wire above the surface arranged to permit determination of the desired line. These are conventional arrangements as previously indicated.

The device 7, forming the subject matter of

the invention, comprises a housing 8 of wood or plastic or preferably of metal to afford the desired weight so that the device will not be too easily moved from any position on the lofting surface 5. A recess 9 in the housing 8 affords space for a dry cell battery 10 having a pole 11 which is adapted to engage a contact terminal 12 consisting preferably of a dished metal disc resting against an abutment at the end of the recess 9. A lamp socket 13 is disposed in the recess above the battery 10 and engages the outer shell thereof. A lamp 14 is disposed in the socket.

A slidable member 15 is supported by screws 16 in the bottom of the device and is biased by a spring 17 bearing on a shoulder 18 and on the upturned end 19 of the member 15 against a screw 20 having a head 21 which is adapted for manipulation. Thus the member 15 may be advanced or retracted by adjustment of the screw 20.

Near its outer end the member 15 is provided with a post 22 carrying a metal washer 23 which is connected by a wire 24 to the contact terminal 12. An insulating washer 25 is disposed on the post 22 and a second metallic washer 26 is disposed above it and connected by a wire 27 to a clip 28 which engages the lamp socket 13.

The washer 26 carries a whisker 29 in the form of a stiff but flexible wire bent to provide a depending leg 30 which is adapted to engage the wire 6 above the lofting board. A washer 31 and an insulating sleeve 32 hold the washer 26 in place on the post 22. The whisker 29 is thus connected electrically to the lamp socket 13 while the washer 23 is connected to the contact terminal 12 and the whisker is normally insulated from the washer 23. When the whisker engages the washer 23, the circuit is closed through the battery and lamp and the lamp is lighted.

In the use of the device, the stretched wire 6 is used as in the conventional operation. The loftsmen places the device 7 in position so that the leg 30 of the whisker 29 is nearly in engagement with the wire. By turning the screw 20, the member 15 is advanced until the leg 30 engages the wire 6 and is deflected sufficiently to engage the washer 23 and close the circuit, thus lighting the lamp 14. The loftsmen then reverses the movement of the screw to withdraw the member 15 to the point where the circuit is broken and the lamp 14 is extinguished. He then scribes a mark on the lofting surface 5 at the end of the member 15 with a pencil 33 as indicated in Fig. 2.

Having determined one point, the operation is repeated along the lofting surface until a sufficient number of points have been scribed. The points can be connected then with a straight-edge to form a straight line.

While I prefer to employ a battery as a source of current within the body of the device, current may be derived from any convenient source and supplied through an ordinary extension cord to conductors within the body including the whisker and contact to complete the circuit to the lamp. A low voltage lamp may be used and the voltage of an ordinary lighting circuit may be reduced by the usual transformer. If desired, the wire 6 may be a part of the circuit, thus permitting the use of a single conductor to connect the device to the source of current. These modifications with respect to the source of current are well known adaptations in electrical practice.

As is obvious, the use of the electric current to facilitate the determination of the point desired ensures the maximum possible accuracy with the minimum of effort. The circuit can be closed and opened by a relatively minute movement of the screw 29, and hence each point determined is at precisely the same distance from the wire. No magnifying glass is necessary, and the tedious operation heretofore performed by the loftsmen is no longer necessary.

Various changes may be made in the form and arrangement of the device without departing from the invention or sacrificing the advantages thereof.

I claim:

1. A device to facilitate drawing of straight lines comprising a body having a chamber, a source of electric current therein, a lamp, and a normally open circuit connected to the source of electric current and the lamp including a flexible whisker and a contact adapted to be engaged by deflection of the whisker.
2. A device to facilitate drawing of straight lines comprising a body having a chamber, a source of electric current therein, a lamp, and a normally open circuit connected to the source of electric current and the lamp including a flexible whisker and an adjustable contact adapted to be engaged by deflection of the whisker.
3. A device to facilitate drawing of straight lines comprising a body having a chamber, a

source of electric current therein, a lamp, a normally open circuit connected to the source of electric current and the lamp including a flexible whisker and a contact adapted to be engaged by deflection of the whisker, a longitudinally adjustable member carrying the contact and threaded means manually operable to adjust the member.

4. A device to facilitate drawing of straight lines comprising a body having a chamber, a source of electric current therein, a lamp, a normally open circuit connected to the source of electric current and the lamp including a flexible whisker and a contact adapted to be engaged by deflection of the whisker, and a longitudinally adjustable, resiliently biased member carrying the contact.

5. A device to facilitate drawing of straight lines comprising a body having a chamber adapted to receive a source of electric current, a contact terminal and a lamp socket disposed in the chamber and a normally open circuit connected to the contact terminal and the lamp socket including a flexible whisker and a contact adapted to be engaged by deflection of the whisker.

6. A device to facilitate drawing of straight lines comprising a body having a chamber adapted to receive a source of electric current, a contact terminal and a lamp socket disposed in the chamber and a normally open circuit connected to the contact terminal and the lamp socket including a flexible whisker and an adjustable contact adapted to be engaged by deflection of the whisker.

7. A device to facilitate drawing of straight lines comprising a body, a lamp socket disposed therein, and a normally open electrical circuit comprising conductors connected to the lamp socket and including a flexible whisker and a contact adapted to be engaged by deflection of the whisker.

8. A device to facilitate drawing of straight lines comprising a body, a lamp socket disposed therein and a normally open electrical circuit comprising conductors connected to the lamp socket and including a flexible whisker and an adjustable contact adapted to be engaged by deflection of the whisker.

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