

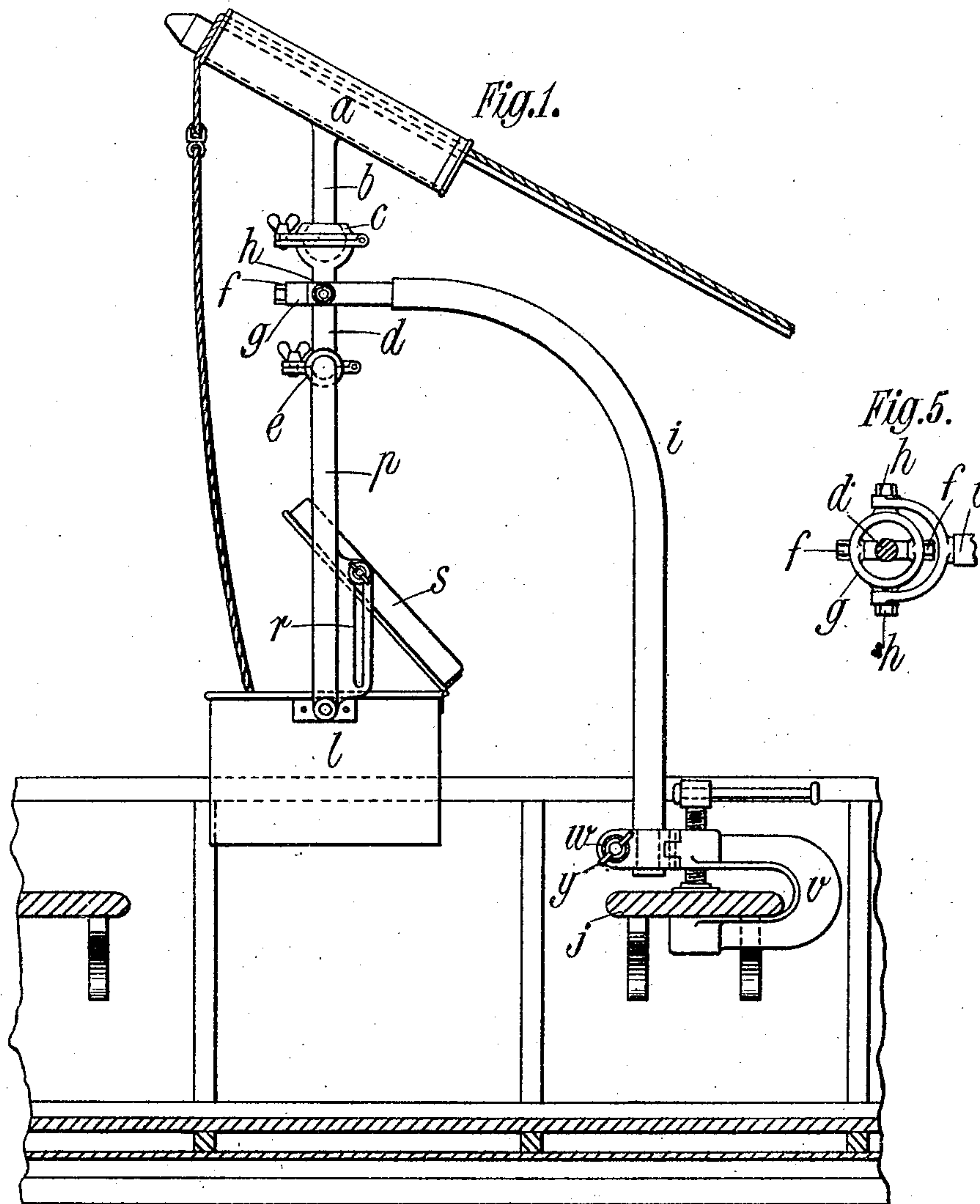
No. 764,682.

PATENTED JULY 12, 1904.

W. SCHERMULY.
LINE THROWING APPARATUS.
APPLICATION FILED DEC. 6, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
F. MacDonald.
R. Ellsworth.

Inventor:
William Schermuly.
By his attorneys,
Baldwin, Davidson & Wright.

No. 764,682.

PATENTED JULY 12, 1904.

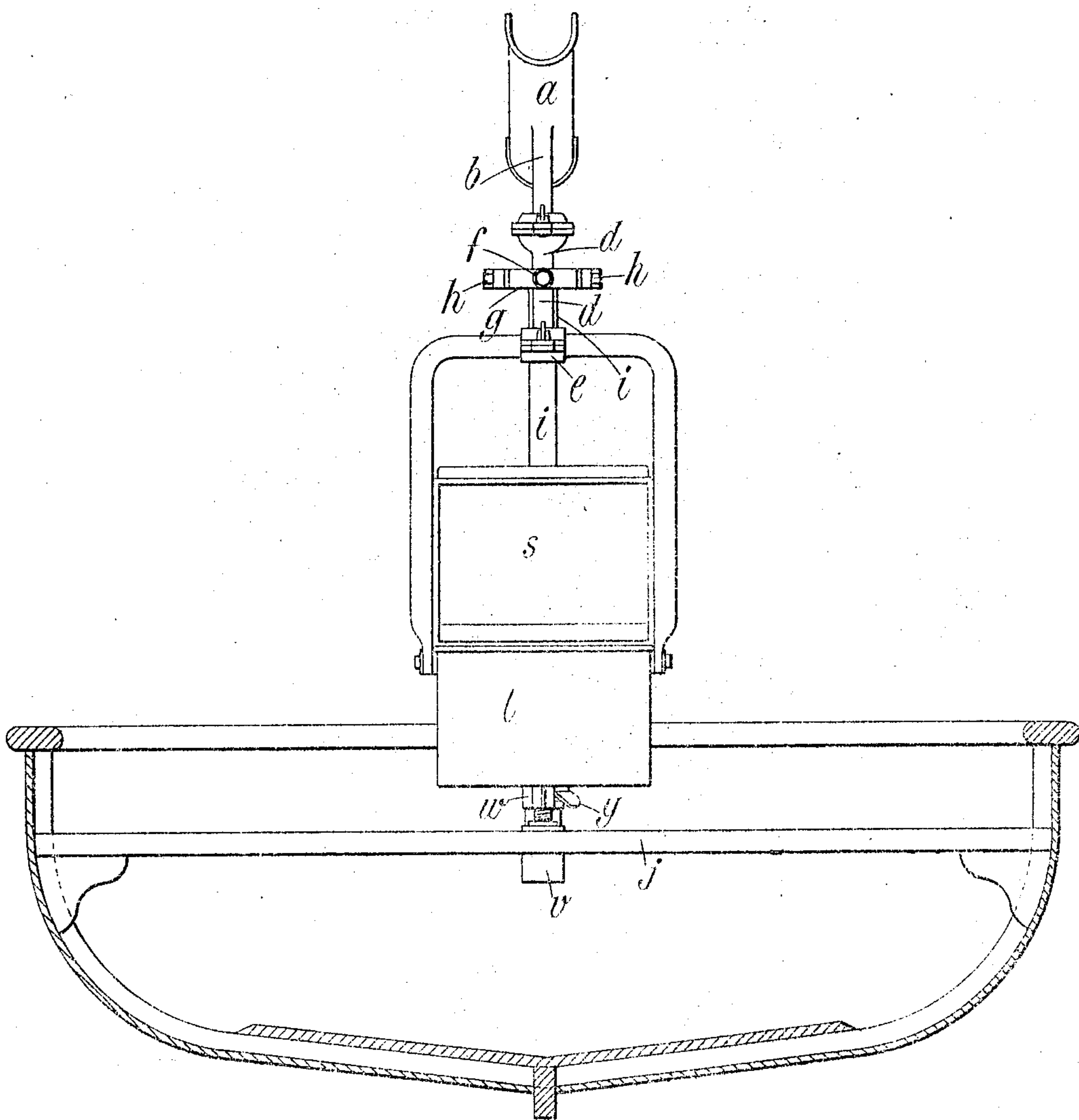
W. SCHERMULY.
LINE THROWING APPARATUS.

APPLICATION FILED DEC. 6, 1902.

NO MODEL.

3 SHEETS—SHEET 2

Fig. 2.



Witnesses:
James McDonald
R. Clunville.

Inventor:
William Schermuly
By his Attorneys
Baldwin, Davidson & Wright.

W. SCHERMULY.
LINE THROWING APPARATUS.
APPLICATION FILED DEC. 6, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

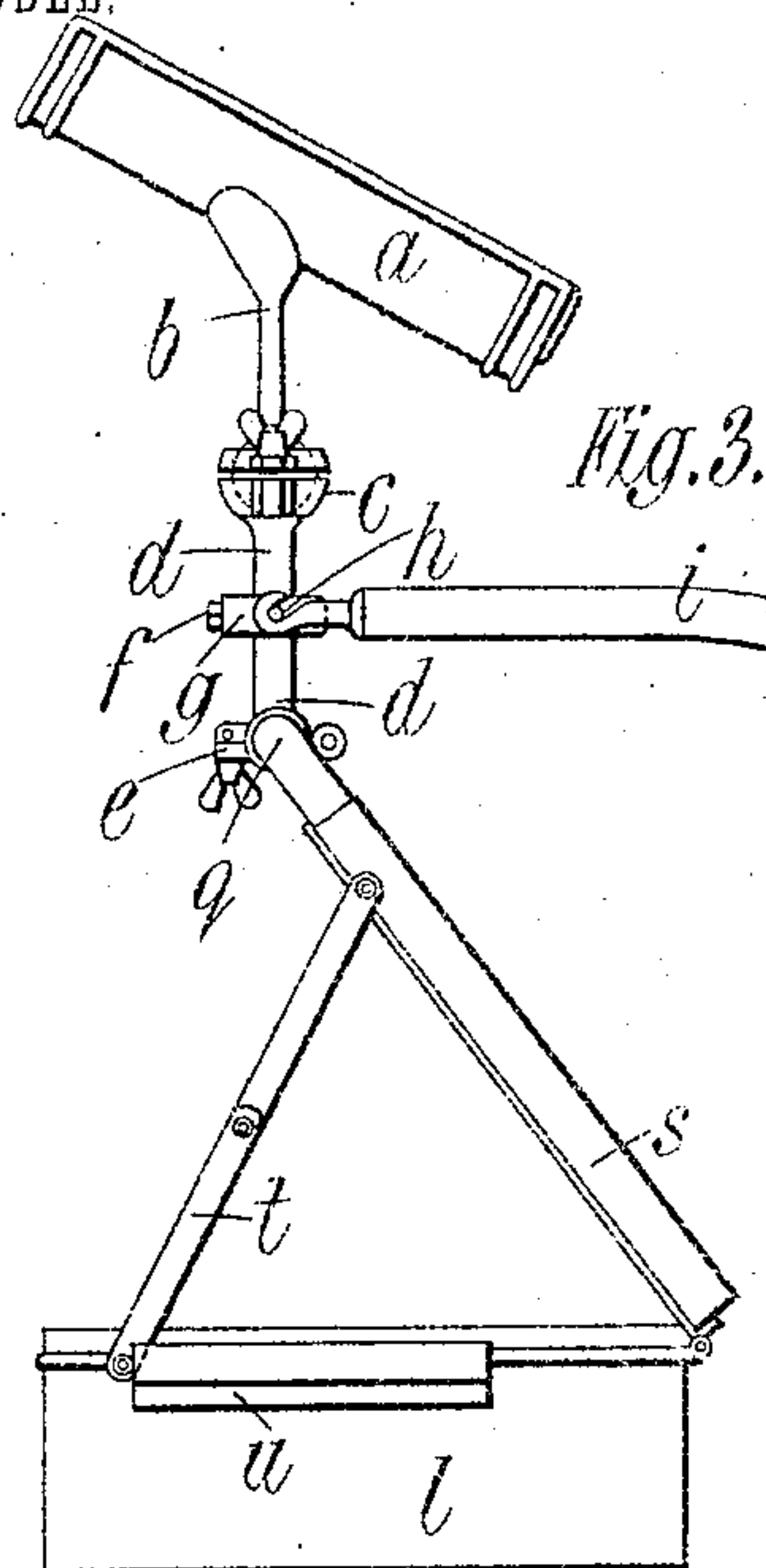


Fig. 3.

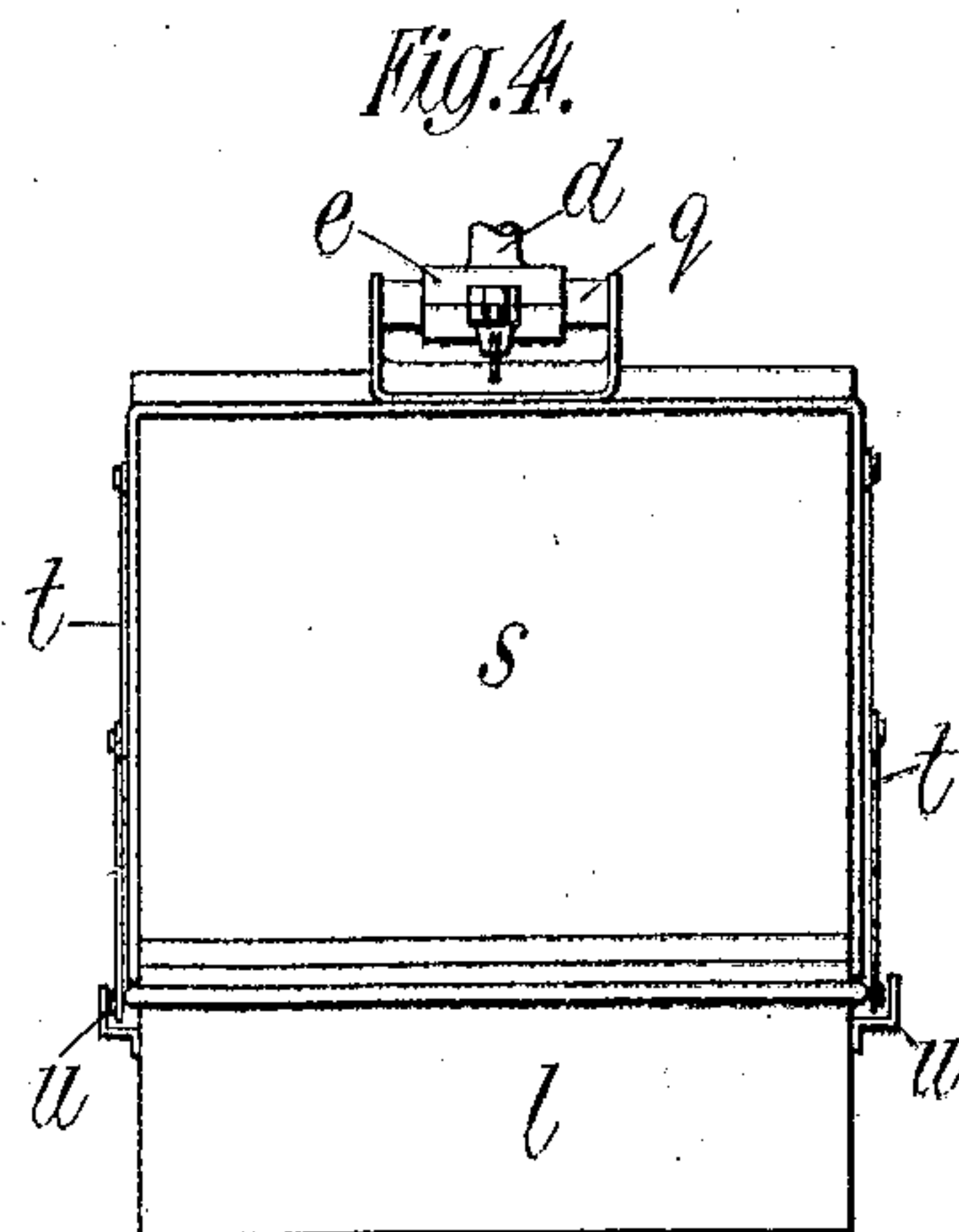


Fig. 4.

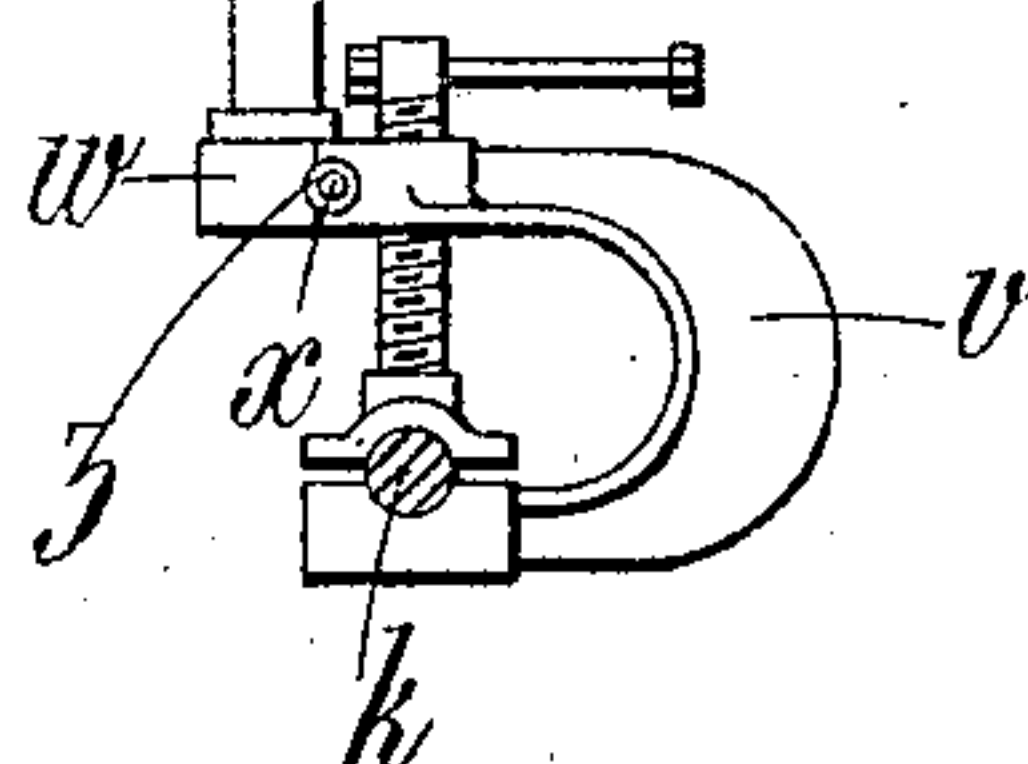


Fig. 5.

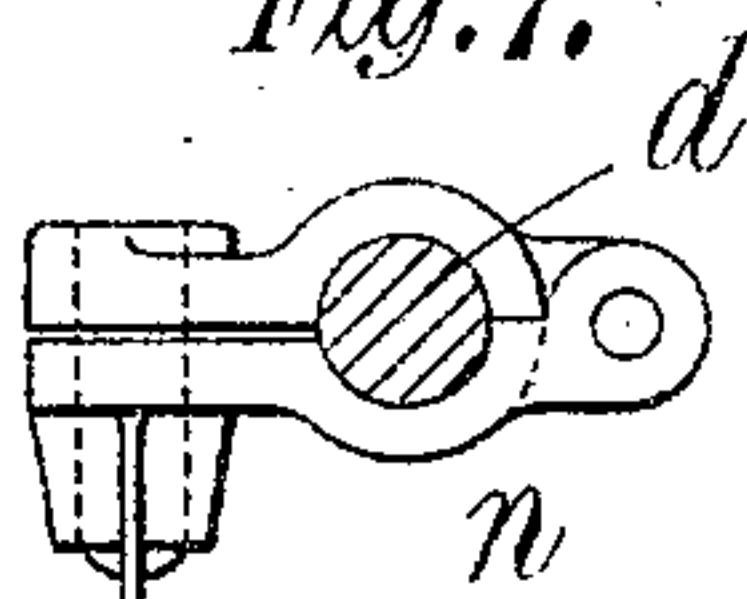


Fig. 6.

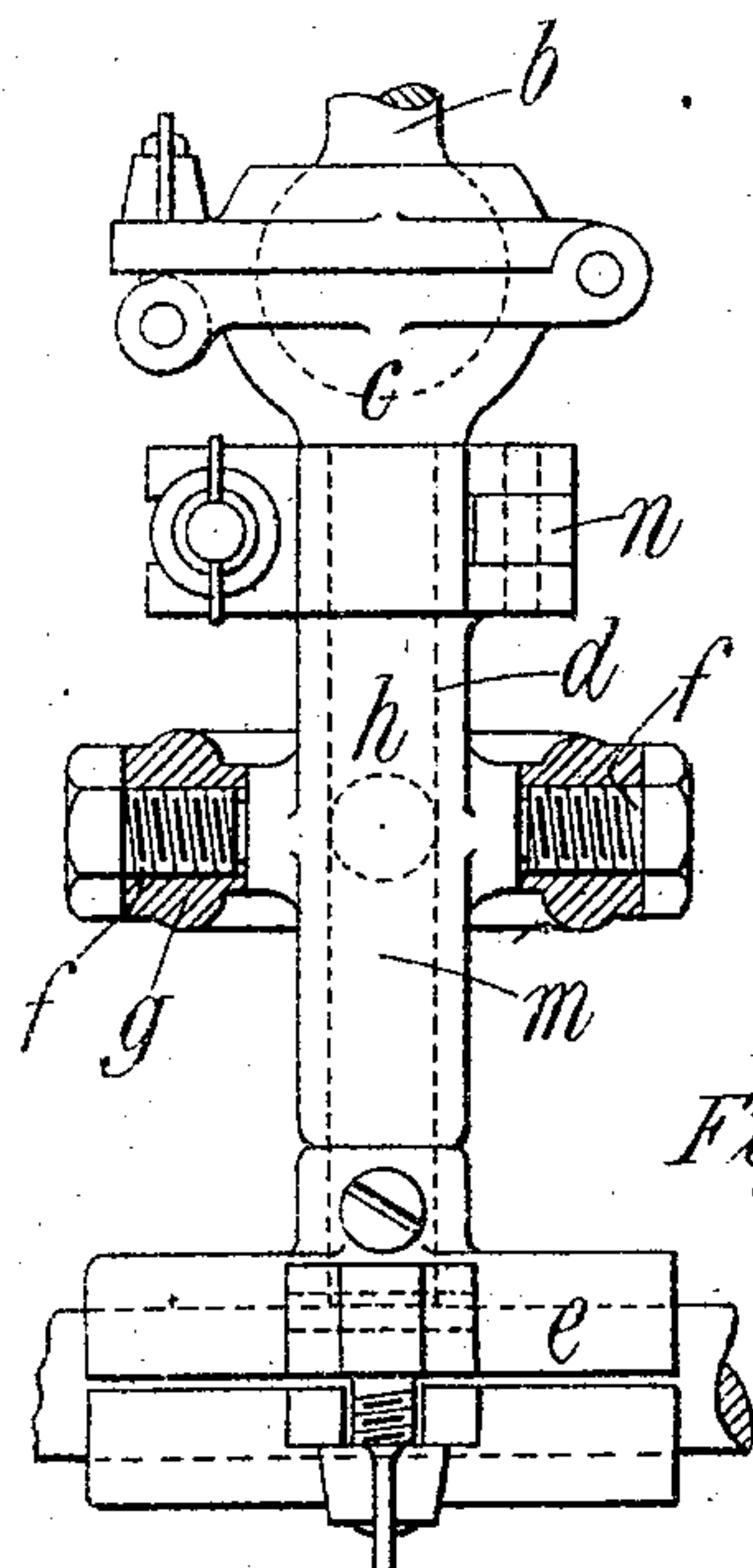


Fig. 7.

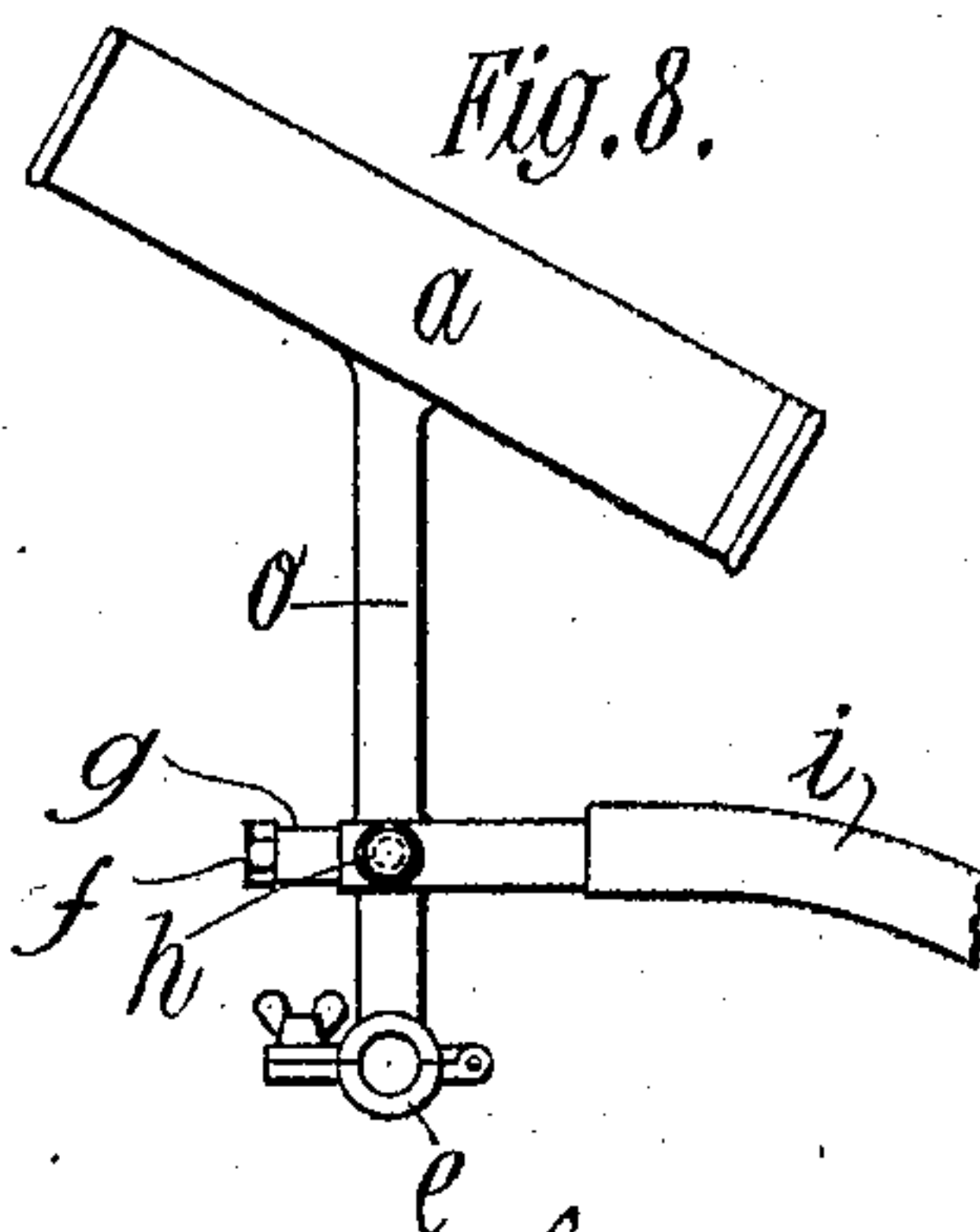


Fig. 8.

Witnesses:
L. A. Macdonald.
R. Ellsworth.

Inventor
William Schermuly,
By his Attorneys
Baldwin, Davidson & Wright.

UNITED STATES PATENT OFFICE.

WILLIAM SCHERMULY, OF POPLAR, COUNTY OF MIDDLESEX, ENGLAND.

LINE-THROWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 764,682, dated July 12, 1904.

Application filed December 6, 1902. Serial No. 134,179. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHERMULY, a subject of His Majesty the King of Great Britain, residing at Poplar, in the county of Middlesex, England, have invented new and useful Improvements in and Connected with Line-Throwing Apparatus, of which the following is a specification.

My invention relates to apparatus employed to throw a line to otherwise inaccessible points. It is specially designed to throw a line from a moving object—such, for instance, as a life-line from a life-boat to a ship or from a ship to the shore or to another ship—and it is particularly directed to the apparatus forming the subject-matter of my application for a patent, Serial No. 79,112, filed on October 18, 1901. In the specification accompanying the said application the rocket-trough is combined with a universal joint, by which it is adjusted to the required inclination and direction and by which also, combined with a counterweight, it automatically adjusts itself to compensate for the rolling or pitching of the vessel or object on which it may be situated.

It is with the object of improving such arrangement that I have chiefly devised the present invention, and I attain my end by the employment of a gimbal-ring or its equivalent and a heavy counterbalance, preferably constituted by a part of the apparatus.

In the accompanying drawings, with reference to which I will fully describe my present improvements, Figure 1 is a side sectional elevation showing the application of the apparatus to a life-boat, and Fig. 2 is a transverse sectional elevation thereof. Fig. 3 is a side sectional elevation representing the application to a ship's bulwark-rail, and Fig. 4 is part transverse elevation of the same. Fig. 5 is a detail plan of the gimbal-ring illustrated in Figs. 1, 2, and 3. Fig. 6 is a fragmentary sectional elevation of a modification of the arrangement of the universal joint and the gimbal-ring represented in Figs. 1, 2, and 3, and Fig. 7 is a plan of the same, while Fig. 8 is a fragmentary elevation of a further modification of the arrangement of the rocket-trough stem and the gimbal-ring shown in Figs. 1, 2, and 3.

In the following description and in the several figures the same letters of reference designate the same or corresponding parts.

a is the rocket-trough, and, as described in the specification previously referred to, *L* is its stem, which is provided at the lower extremity with a ball or the like, forming a component of a universal joint *c* of the ball-and-socket type, whose socket or equivalent is composed of two parts which are hinged together at one side and provided with a clamp or the like at the other. Thus by slackening and tightening the clamp the rocket-trough *a* can be adjusted to assume any required elevation or direction and be there maintained. The lower part of the socket is furnished with a depending stem *d*, having a hinge-clamp *e* or like device formed or appropriately secured at its lower extremity and, as shown best in Fig. 5, lateral extension or pivots *f* at a convenient point, by means of which it is centred within a gimbal-ring *g*. The ring *g* in turn is revolubly mounted at opposite points *h*, situated at right angles to the pivots *f* within the forked end of a davit *i*, which is supported upon a thwart *j* of a boat, Figs. 1 and 2, or upon a ship's rail *k*, Fig. 3. The pivots *f* and *h* may be obtained in any appropriate way, and the end of the davit *i* may be closed, as in Fig. 1, or slotted, as in Fig. 3, in which event a hinged clasp or cap may be applied to prevent the pivots *h* jumping out.

The clamp or device *e* is designed to receive and hold a line-box *l*, which thus hangs therefrom and serves the purpose of the counterbalance before alluded to. This box may be the one containing either the life or rocket line or the hauling-line, as represented, respectively, in Figs. 1 and 2 and in Figs. 3 and 4. By employing the latter box there is less chance of the balance being impaired, as it may be with the other box in the event of futile shots, though ordinarily this box is heavy enough of itself; but if it is not it may be weighted. When the rocket-line box is not used as the counterbalance, it is situated in suitable relation to the trough *a*.

It will now be seen that the trough *a* is not supported by the box *l*, as originally, but by the gimbal-ring *g* and davit *i*, and that it is

quite free to adapt itself to any movement of the vessel or object, maintenance of the necessary vertical position being effected by the suspension of the box *l*.

5 In the arrangements illustrated in Figs. 1, 2, 3, and 4 when the trough *a* is turned axially to the requisite direction by adjusting the ball on the end of its stem *b* in the socket the box *l* is not turned to assume the same di-
10 rection, and as this at times is inconvenient I adopt the device shown in Figs. 6 and 7. In this device the stem *d* is inclosed in a sleeve *m*, on which the extensions or pivots *f* are provided for centering in the ring *g*. The
15 upper end of this sleeve is fashioned as a clamp *n*, so that on slackening and tightening it the trough *a* and box *l* can be simultaneously set to the desired direction and fixed there without interfering with the joint *c*.
20 The clamp *n* is illustrated in Fig. 7, and though its bolt is shown permanently secured to the fixed portion it may be hinged thereto in the usual manner, thus avoiding the necessity of entirely removing the nut when com-
25 plete opening is required.

Though I prefer to use the joint *c* to permit of the adjustment of the elevation of the rocket-trough *a*, it may be dispensed with in both designs, in which event the stems *b* and
30 *d* are merged into one, and the alteration of direction in the arrangement shown in Fig. 6 is solely accomplished by turning the stem in the sleeve *m* and in the other by turning the davit *i* in its support. The last-mentioned
35 plan is represented in Fig. 8, in which *o* denotes the merged stems *b* and *d*, on which the pivots *f* are provided for pivoting in the ring *g*.

In Figs. 1 and 2 the box *l* is disposed as in
40 my previous invention; but the rail or part *p*, which is received and held by the clamp or device *e* and by which, therefore, the box *l* is hung, does not now constitute the support for the trough *a*. Consequently it can be abol-
45 ished and a simple handle *q* substituted, as in the case of the box shown in Figs. 3 and 4. In this way I also avoid the slotted contrivance *r* for staying the box-lid *s* when open and employ instead a simple hinged stay *t* of
50 any construction, which when the lid *s* is closed reposes in a recess *u*, which, though shown furnished at the outside of the box *l*, may be placed inside, as will be obvious without illustration.

55 As before explained, the davit *i* is supported upon a thwart *j* or upon a rail *k*. This may be effected in any appropriate manner; but I find a most convenient way is to employ a clamp *v*. Hence such is shown in the draw-
60 ings. The clamp is furnished with an eye *w*, which may take the form of a hinged clamp of ordinary form, as in Figs. 1 and 2, or it may be a split socket and the davit end secured by a bolt *x*, as in Fig. 3. In either case
65 it will be seen that by slackening and tighten-

ing the nuts *y* and *z*, respectively, the davit, and with it the supported parts, may be swung into the desired position and held there.

It will now be seen that by my invention I supply a very convenient and efficient appa- 70
ratus which when not required for use can be readily taken to pieces and compactly stowed away.

What I claim as my invention, and desire to secure by Letters Patent, is— 75

1. A line-throwing apparatus comprising, in combination, a rocket-trough, a gimbal- 75
ring in which said trough is pivoted, a davit in which said ring is revolubly mounted, and a counterbalance connecting with said trough. 80

2. A line-throwing apparatus comprising, in combination, a rocket-trough, a gimbal- 80
ring in which said trough is pivoted, a universal joint intervening between said trough and ring, a davit in which said ring is revo- 85
lubly mounted, and a counterbalance connecting with said trough.

3. A line-throwing apparatus comprising, in combination, a rocket-trough, a stem on 90
said trough terminating in a ball forming one component of a universal joint, a socket forming the other component of said joint, means for permitting adjustment at said joint, a stem depending from said socket and termi- 95
nating in a connecting and disconnecting device, a gimbal-ring in which said latter stem is pivoted, a davit in which said ring is revolubly mounted, and a counterbalance consti-
tuted by a line-box and having a part which is received and held by said device. 100

4. A line-throwing apparatus comprising, in combination, a rocket-trough, a stem on 105
said trough terminating in a ball forming one component of a universal joint, a socket forming the other component of said joint, means for permitting adjustment at said joint, a stem depending from said socket and termi- 105
nating in a connecting and disconnecting device, a sleeve surrounding said latter stem and having means for permitting the adjust- 110
ment thereof, a gimbal-ring in which said sleeve is pivoted, a davit in which said ring is revolubly mounted, and a counterbalance constituted by a line-box and having a part which is received and held by said device. 115

5. A line-throwing apparatus comprising, in combination, a rocket-trough, a stem de- 120
pending from said trough and terminating in a connecting and disconnecting device, a sleeve surrounding said stem and having means per- 120
mitting the adjustment thereof, a gimbal-ring in which said sleeve is pivoted, a davit in which said ring is revolubly mounted, and a coun-
terbalance constituted by a line-box and hav- 125
ing a part which is received and held by said device.

6. A line-throwing apparatus comprising, in combination, a rocket-trough, a stem de- 130
pending from said trough and terminating in a connecting and disconnecting device, a gim-

bal-ring in which said stem is pivoted, a davit
in which said ring is revolubly mounted, and
a counterbalance constituted by a line-box
and having a part which is received and held
5 by said device.

7. A line-throwing apparatus comprising,
in combination, a rocket-trough, a gimbal-
ring in which said trough is pivoted, a davit
in which said ring is revolubly mounted, ad-

justable means for supporting the davit on 10
any required part, and a counterbalance con-
necting with said trough.

In testimony whereof I have hereunto sub-
scribed my name.

WILLIAM SCHERMULY.

Witnesses:

A. F. SPOONER,
J. ANDREW.