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No. 684,105.

Patented Oct. 8. 1901.

C. ROSCUSVÄRD & N. TELANDER.
ROLLING PLATFORM FOR USE IN THE PRELIMINARY INSTRUCTION OF SEAMEN
IN THE MANUAL OF GUNNERY.

(Application filed July 6, 1901.)

(No Model.)

Fig. 1.

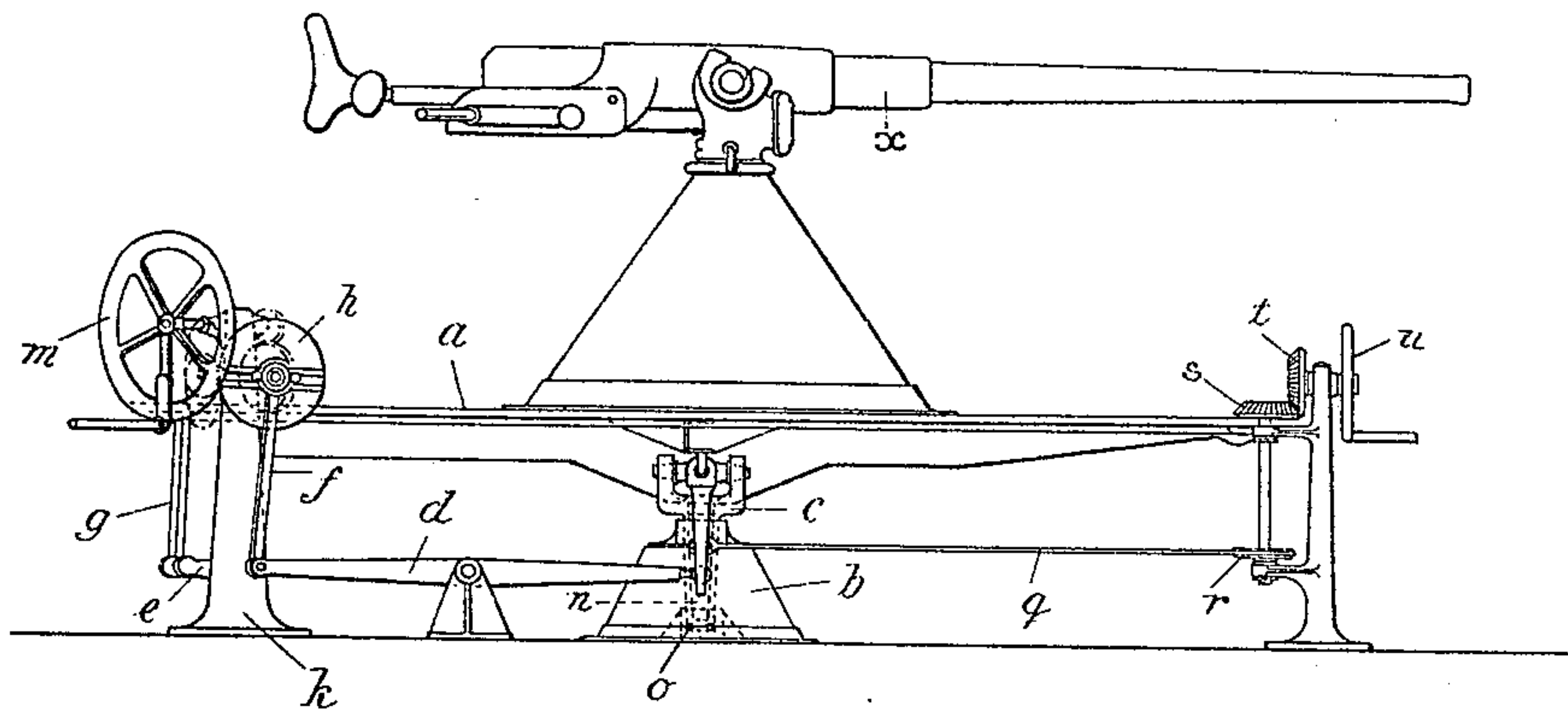
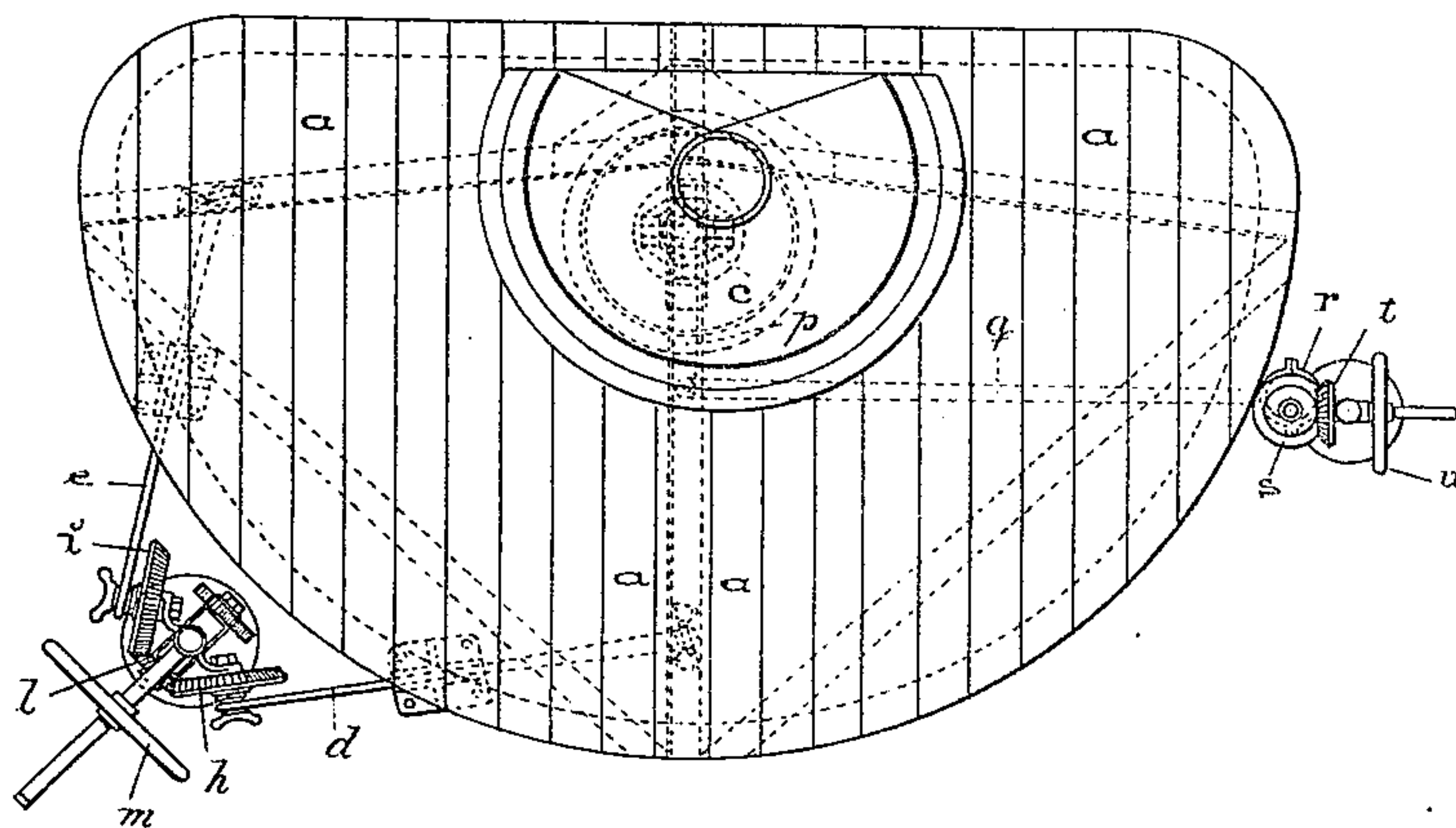


Fig. 2.



WITNESSES:

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CARL ROSCUSVÄRD AND NILS TELANDER, OF STOCKHOLM, SWEDEN.

ROLLING PLATFORM FOR USE IN THE PRELIMINARY INSTRUCTION OF SEAMEN IN THE MANUAL OF GUNNERY.

SPECIFICATION forming part of Letters Patent No. 684,105, dated October 8, 1901.

Application filed July 6, 1901. Serial No. 67,333. (No model.)

To all whom it may concern:

Be it known that we, CARL ROSCUSVÄRD, commodore, and NILS TELANDER, commander, both of the Swedish Navy, residing at 20 Kungsholmsgatan, Stockholm, Sweden, do hereby declare the nature of our invention for an Improved Rolling Platform for Use at the Preliminary Instruction of Seamen in the Manual of Gunnery to be as follows.

Our invention relates to a platform which is movable in such a manner that it admits of imitating the movements of sea-going vessels, said platform, therefore, being specially adapted for use in gun practice on land or on ships at anchor for representing conditions approaching as far as possible to those present in a ship in a sea.

In the accompanying drawings such a platform is shown in Figure 1 in an elevation, and in Fig. 2 in a plan view.

It consists of a bridge or platform proper, *a*, for supporting the gun *x*, and suspended by means of a balance-beam *c* on some support secured to the ground or the deck, said balance-beam admitting of the bridge or platform being rocked vertically in two directions at right angles to each other, corresponding to the movements of the ship in pitching and rolling. These two motions are produced by means of two double-armed levers *d* and *e*, movable about two supports secured to the ground or deck and each jointed at one end by means of a link to the bridge or platform at points about ninety degrees apart from each other. The other ends of said levers are connected by means of connecting-rods *f* and *g*, respectively, to gear-wheels *h* and *i*, respectively, mounted on a standard *k*, and both of these gear-wheels gear together conveniently by means of an intermediate gear *l*, arranged to be rotated by means of a hand-wheel *m*. The points of attachment of the connecting-rods *f g* to the gears *h i* should be adjustable radially in order to allow of varying the amounts of the movements of the bridge or platform proper when the hand-wheel is revolved, so that, for instance, by placing the points of attachment of the connecting-rods on the gears in the centers of the latter the hand-wheel may be revolved without this motion being transmitted to the bridge or platform. In this manner the plat-

form may be rocked at will to one direction or to the other, corresponding to the pitching or rolling of a ship, or to both directions simultaneously, corresponding to both these movements at once, and the amounts of said movements may be varied at will up to seven degrees or eight degrees, which seems to be an ample range of movements in gun practice. Besides since the rolling motion of the platform, owing to the direction of the force causing it, is slightly quicker where the horizontal position is passed through said movement in reality, as closely as can be desired, resembles the actual rolling motion of a ship.

To imitate in a still more illusory manner the movements of a ship in motion, the platform referred to may be combined with a device by means of which it can be rotated slightly about a vertical axis, so as to obtain a movement corresponding to the sheering of a ship. The balance device *c* in this case is not applied directly on the support *b*, but on an upright central pivot-pin *n*, movable on a ball-bearing *o*, arranged within the support. According to the amount of sheering movement to be imitated, which oscillation or sheering of course must be contrived to take place without materially affecting the rolling or pitching movements, the aforesaid pin, together with the bridge or platform proper, should be elevated and the links connecting the latter with the levers *d e* be elongated. The pin *n* is provided with a projecting arm *p*, connected, by means of a connecting-rod *q*, with an eccentric *r*, which, for instance, by the aid of a pair of gears *s t* can be rotated from a hand-wheel *u*. When the latter is revolved, the connecting-rod is shifted longitudinally, so as to rotate the pin *n*, together with the bridge or platform, through a small arc back and forth about the geometrical axis of rotation. Evidently the mechanism proper for rotating the pin *n* may alternatively be arranged in some other manner.

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

1. An improved rolling platform for use in gun practice, consisting of a bridge or platform proper for sustaining the gun, said platform being suspended by means of a balance

- on a support and connected at two points about ninety degrees apart by means of links with one end of two double levers which are each connected at their other ends by means
5 of connecting-rods with rotatable wheels, in order that the bridge or platform by the rotation of said wheels may be given a movement corresponding to the pitching and rolling of a ship at sea.
- 10 2. A platform and double levers and connecting-rods fixed to rotatable wheels and connected at different points to said platform the connection of said rods with the corresponding wheels being adjustable radially,
15 in order to allow of varying the amounts of the movements at will.
3. The combination with a movable plat-

form of double levers and connecting-rods, fixed to rotatable wheels and connected to different parts of said platform, said platform 20 being suspended on a pivot adapted to rotate on a support and provided with a projecting arm, connected with a device for rotating said pivot, in order to admit of imitating with the apparatus also the sheering movements 25 of a ship.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CARL ROSCUSVÄRD.
NILS TELANDER.

Witnesses:

H. TELANDER,
TH. WIGERT.

It is hereby certified that the name of the first-mentioned patentee in Letters Patent No. 684,105, granted October 8, 1901, for an improvement in "Rolling Platforms for use in the Preliminary Instruction of Seamen in the Manual of Gunnery," was erroneously written and printed "Carl Roscuvärd," whereas the said name should have been written and printed *Carl Rosensvärd*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 21st day of July, A. D., 1903.

[SEAL.]

E. B. MOORE,
Acting Commissioner of Patents.