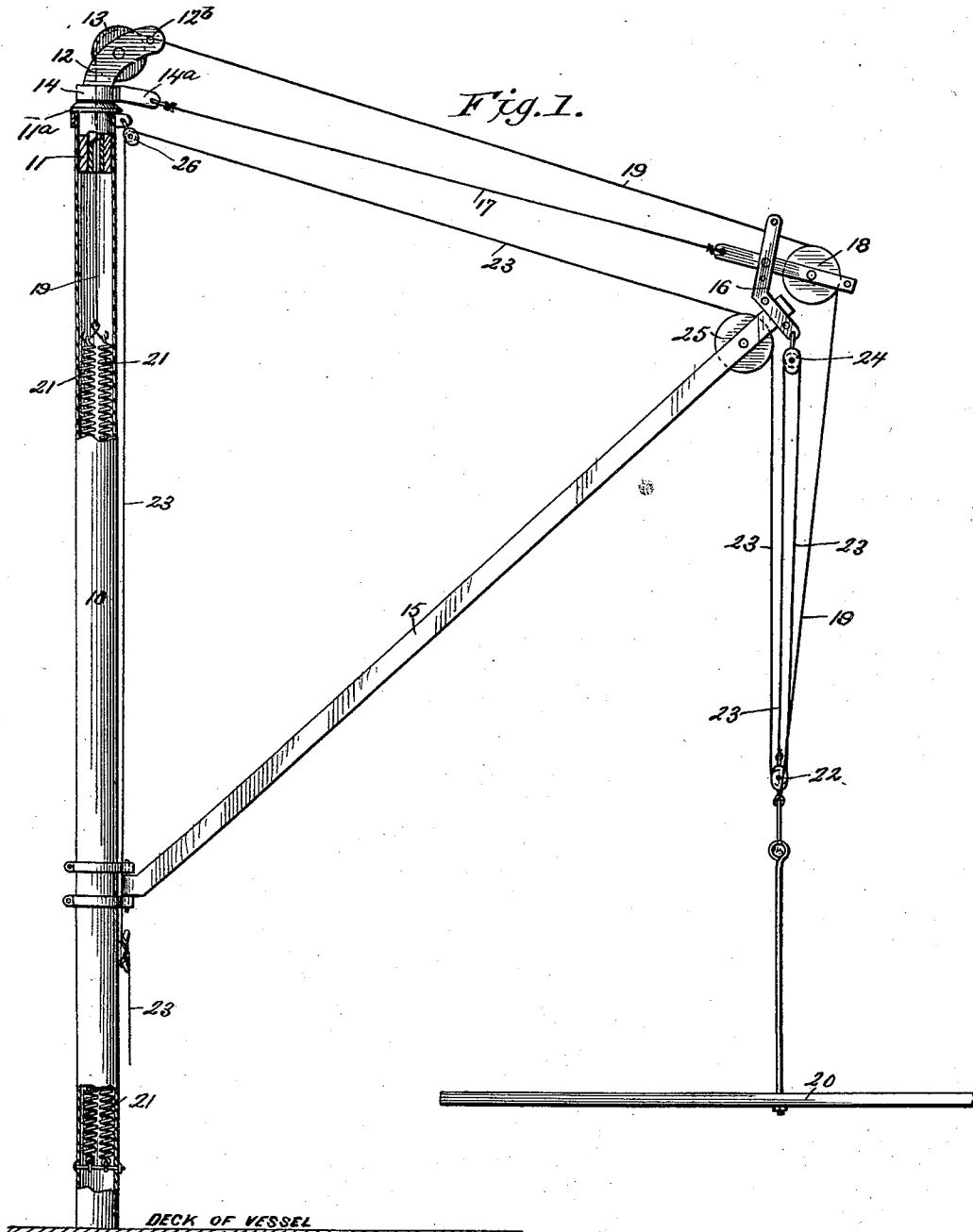


(No Model.)

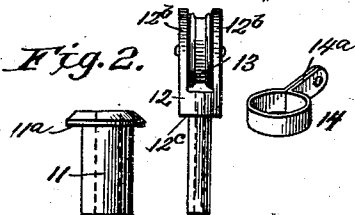
M. RICHTER.
BALANCED STAGE.

No. 478,467.

Patented July 5, 1892.



WITNESSES:
Fred J. Dieterich
W. D. Blondel



INVENTOR: *Maurice Richter*
BY *Maurice Richter*
ATTORNEYS

UNITED STATES PATENT OFFICE.

MAURICE RICHTER, OF WILLIAMSTOWN, WEST VIRGINIA.

BALANCED STAGE.

SPECIFICATION forming part of Letters Patent No. 478,467, dated July 5, 1892.

Application filed October 12, 1891. Serial No. 408,529. (No model.)

To all whom it may concern:

Be it known that I, MAURICE RICHTER, of Williamstown, in the county of Wood and State of West Virginia, have invented a new and useful Improvement in Balanced Stages, of which the following is a specification.

This invention relates to an improved balanced stage or gang-plank for ships, the object of the invention being to provide a device of this character that can be easily operated by a single person, the main portion of the weight of the stage or gang-plank being balanced or supported by a spring mechanism arranged upon the ship.

With this object in view my invention consists in the peculiar construction of the various parts and their novel combination or arrangement, all of which are clearly shown in the drawings, set forth in the description, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a side elevation of my improved device, and Fig. 2 shows certain parts in detail.

In carrying out my invention I employ a vertical tubular post or standard 10, arranged at any suitable place upon the deck, and in the upper end of said post or standard is arranged a tubular bushing or metallic sleeve 11, formed at its upper end with an outwardly-projecting flange or collar 11^a, which rests upon the top of the post 10 and supports the bushing or sleeve therein. A bracket 12 is also attached to the upper end of the post or standard, said bracket consisting of the tubular shank 12^a, which is inserted in the sleeve or bushing 11 and moves loosely therein, and the parallel arm 12^b, the lower ends thereof forming shoulders 12^c, which rest upon the flange or collar of the sleeve or bushing and support the bracket thereon.

The arms 12^b are curved outwardly, as shown, and between the same is journaled a pulley 13. A collar 14 is rigidly attached to the bracket near the shoulders 12^c, said collar being provided with a lateral projection 14^a.

A boom 15 is attached at its lower end to the tubular post or standard 10, and to the upper end of said boom is rigidly attached a bracket 16. A guy-rope 17 connects the projection 14^a with the bracket 16, thereby supporting the boom in its proper position and

insuring a uniform movement of the revolvable bracket with the boom. A pulley 18 is journaled in the bracket 16, and over the pulleys 18 and 13 is passed a rope 19, the outer end of said rope being connected with the bail of the stage or gang-plank 20 while the inner end of said rope is passed down through the tubular shank of the bracket 12 and connected with the upper end of the coiled spring 21, the lower end of said spring being secured near the lower end of the tubular post or standard.

The tension of the spring 21 is such that it nearly balances the weight of the stage, so that in order to lift said stage very little force is required, and it will also be seen that as said stage is raised the spring will assist in the operation and as it is lowered the spring will render the descent steady and easy. A series of springs may be used, if desired, said springs being connected with each other, as shown.

The rope 23 is secured to the bail of the stage, said rope 23 passing up over pulley 25, carried upon the boom, thence through the block 26, attached to the post 10 and down to the operator.

By means of the rope 23 the stage is raised and lowered, as desired, by a single person, the balance-spring taking up a greater portion of the weight, and as the boom is connected with the bracket 12 by means of the guy-rope said bracket will be moved as the boom is moved, thereby always keeping the rope 19 upon the pulleys 18 and 13.

From the above it will be seen that I provide a simple and efficient device which can be operated by a single person, and one which dispenses with counterbalancing-weights and their accompanying safety devices.

Having thus described my invention, what I claim as new is—

1. The combination, with a tubular post or standard, of a counterbalancing-spring arranged within the post or standard, the lower end of said spring being secured therein, a sleeve inserted in the upper end of the post, a bracket having a tubular shank inserted in said sleeve, a pulley carried by said bracket, a boom attached to the post or standard, a bracket secured upon the upper end of said boom and projecting beyond the same, a pul-

ley carried by said bracket, a stage or gang-plank, a rope connected with said stage and with the upper end of the spring, passing over the pulley carried by the bracket, the guy-rope, and lifting-ropes, all arranged as described.

2. The combination, with the tubular post or standard, of the balance-spring arranged therein, the metallic bushing or sleeve, the bracket consisting of the tubular shank and curved arms, the pulley journaled between the arms, the collar provided with a projec-

tion, the boom, the bracket rigidly attached to the end of same and carrying a pulley, the guy-rope connecting the said bracket and projection on the collar, the stage, the rope connecting the stage and balance-spring, and the rope and pulleys for raising and lowering said stage, substantially as shown and described. 15

MAURICE RICHTER.

Witnesses:

J. S. BUTLEY,
J. S. GOEBEL.