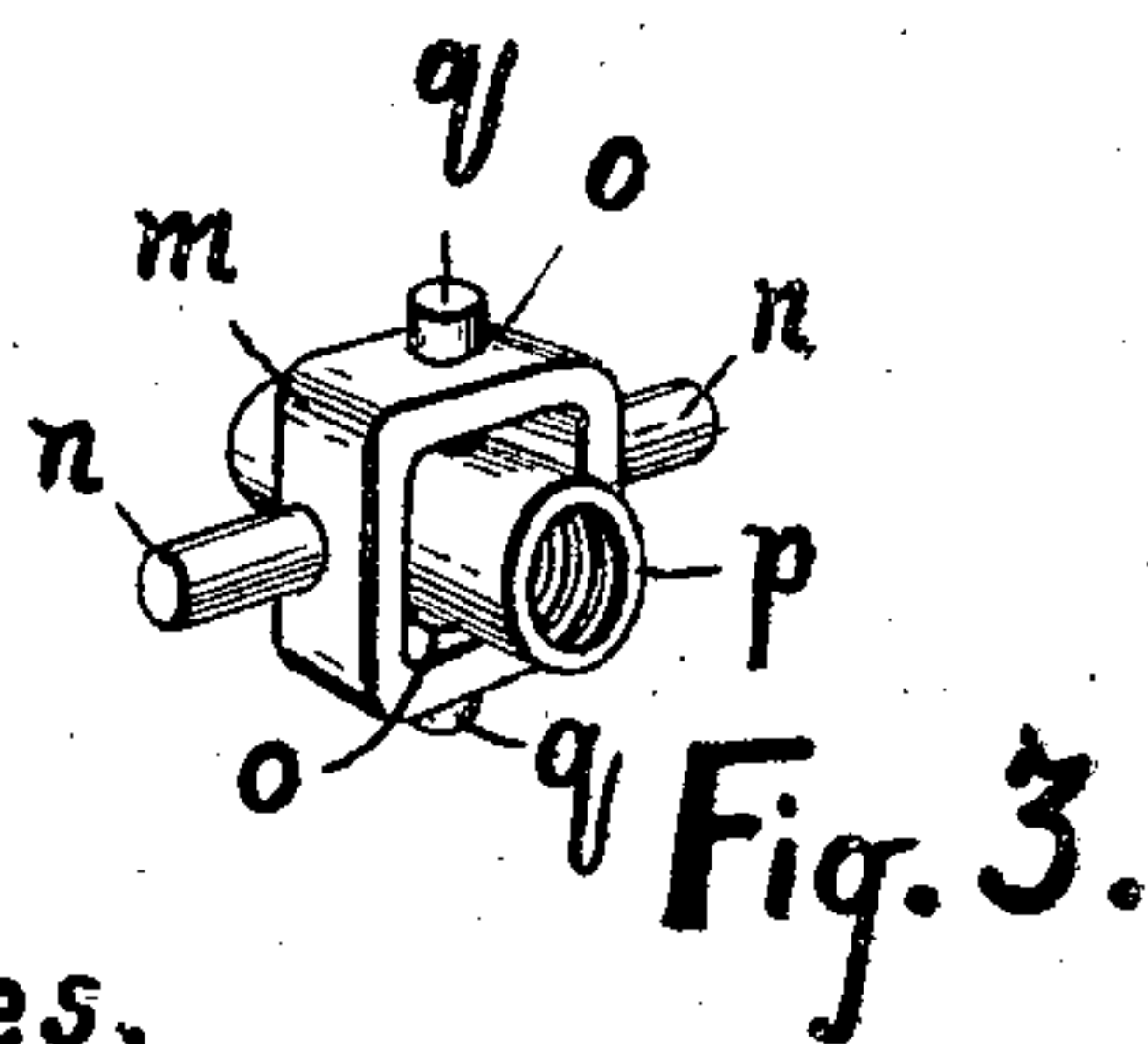
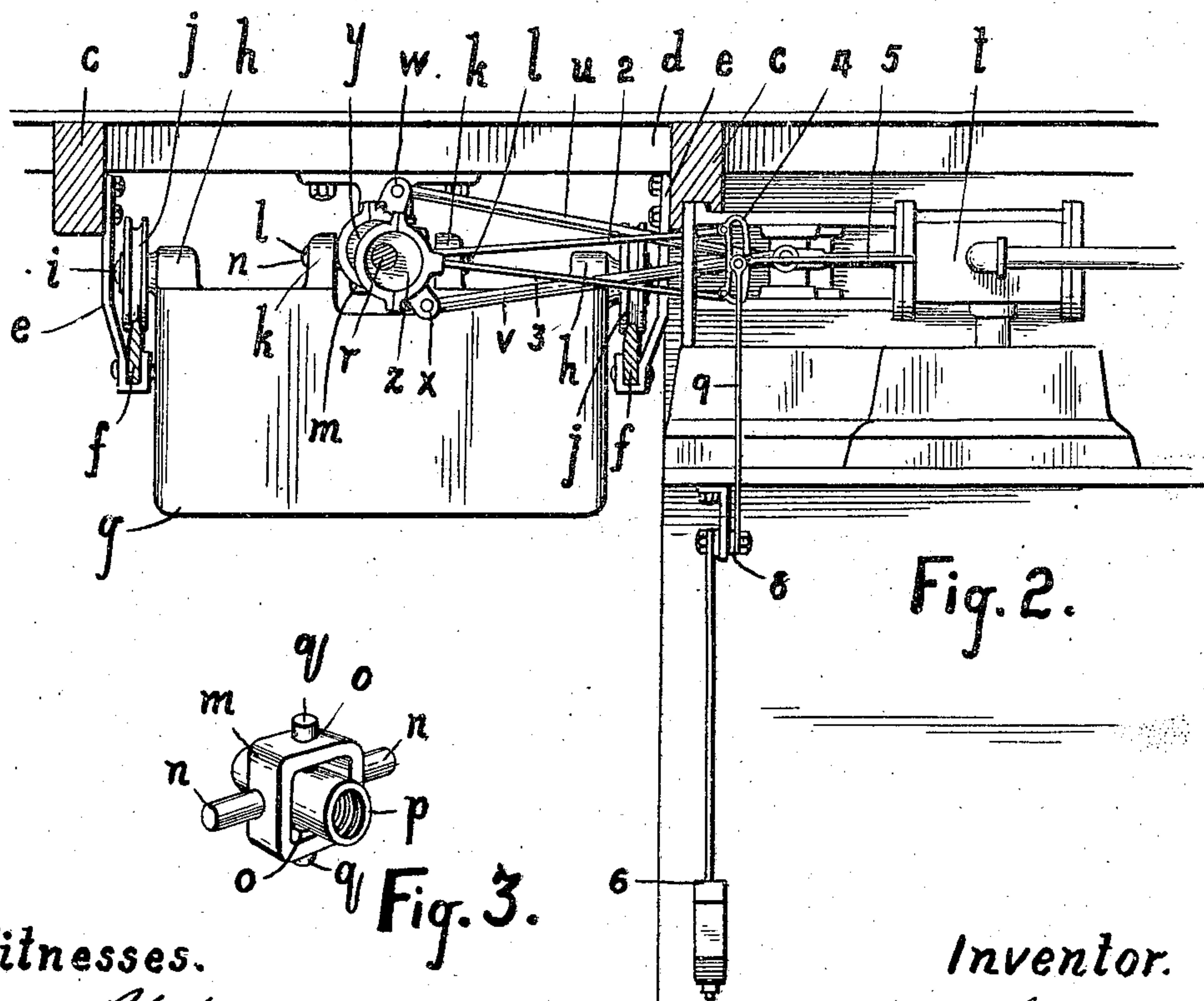
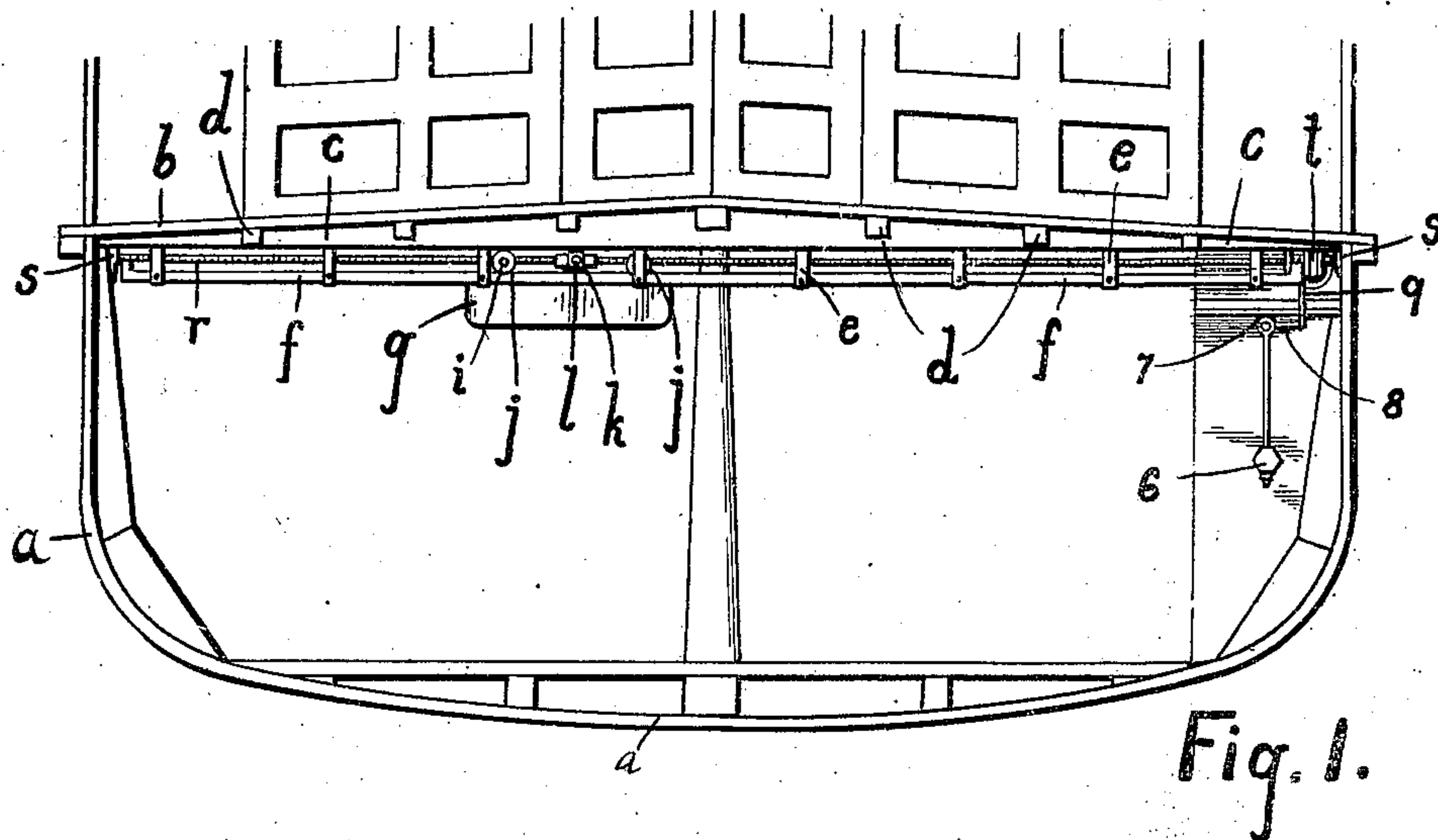


No. 844,405.

PATENTED FEB. 19, 1907.

C. C. ROUILLARD.  
TRIMMING WEIGHT FOR STEAMBOATS AND THE LIKE.  
APPLICATION FILED FEB. 17, 1906.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHARLES C. ROUILLARD, OF MONTREAL, QUEBEC, CANADA.

## TRIMMING-WEIGHT FOR STEAMBOATS AND THE LIKE.

No. 844,405.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed February 17, 1906. Serial No. 301,648.

*To all whom it may concern:*

Be it known that I, CHARLES CALIXTE ROUILLARD, a subject of the King of Great Britain, residing at 95 St. Elizabeth street, in the city of Montreal, in the district of Montreal, in the Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Trimming-Weights for Steamboats and the Like, of which the following is a specification.

This invention relates to improvements in trimming-weights for steamboats and the like, as described in the present specification and illustrated by the accompanying drawings, that form part of the same.

This invention consists, essentially, in a balancing-weight traveling on a guideway suitably supported from side to side of the vessel and means for controlling the movements and position of the said weight.

The objects of the invention are to provide a means of keeping the vessel constantly trim no matter how frequently she may list to one side or to the other and do away with the necessity of removing various pieces of ballast or weights from side to side.

Referring to the drawings, Figure 1 is a cross-sectional view of a steamboat having my trimming device suspended under the main deck. Fig. 2 is an enlarged end view of the parts in detail. Fig. 3 is a detail of a flexible thimble secured to the weight.

Like letters of reference indicate corresponding parts in each figure.

*a* is the hull of the boat, and *b* the deck thereacross, supported by suitable beams *c* and *d*.

*e* are hangers preferably secured to the beams *c* and arranged across the boat in pairs opposite one to the other.

*f* are tracks supported in the hangers *e* and securely attached thereto and terminating at each end adjacent to the sides of the boat.

*g* is a weight, preferably and here shown as of solid construction, though it may be a casing filled with small weights. The weight has projecting from each side thereof the lugs *h*, from which project the pins *i*, on which the trolleys *j* are journaled. The trolleys *j* are preferably four in number and are journaled from the four lugs *h* and travel on the tracks *f* from side to side of the vessel.

*k* are lugs projecting upwardly, preferably

from the center to the weight *g*, and having the bearings *l* formed therein.

*m* is a cage having the fixed spindles *n* extending from the sides thereof and journaled in the bearings *l* and the orifices *o*, situated at right angles to the spindles *n*.

*p* is a thimble internally threaded and having pins projecting outwardly from opposite sides thereof and fixedly secured thereto. The said thimble *p* is secured in the cage *m*, the pins *q* projecting through the orifices *o*.

*r* is a shaft supported in suitable bearings *s*, arranged in proximity to each side of the boat above the track *f*. The said shaft is threaded corresponding with the thimble *p*, through which it extends. It will be thus seen that any movement of rotation of the shaft will affect the position of the thimble thereon, and consequently affect the position of the balancing-weight *g*.

*t* is a motor, herein shown as a steam-engine of the reciprocating type, though it must be understood that while for convenience the description herein is confined to a reciprocating engine, as stated, any suitable form of motor may be applied.

*u* and *v* are the connecting-rods to the cranks *w* and *x* from the piston-rods, as customary. Said cranks are secured to the shaft *r*, thus establishing the connection between the steam-engine and the shaft.

The reversal of direction in the rotation of the shaft *r* is accomplished by the well-known link-motion reversing-gear, and in the drawings *y* and *z* are the eccentrics, and 2 and 3 the rods connecting said eccentrics to the link 4. The link 4 is connected to the valve-stem 5, as usual.

6 is a plumb-rod pivoted at its upper end in the bracket 7 and remaining stationary, or substantially so, at each movement of the vessel.

8 is an arm extending at right angles to the plumb-rod 6 and rigidly connected therewith in any suitable manner, either as forming part therewith or connected thereto at the rear of the bracket 7. Thus the arm 8 and the plumb-rod 6, substantially speaking, form a bell-crank, so that the rod 8 remains stationary with the plumb-rod.

9 is a connecting-rod pivotally secured to the arm 8 and to the link 4. Consequently any movement of the boat sidewise will affect



the position of the said link, and in consequence control the admission of steam to the engine and operate the shaft *r* in one direction or the other.

5 Having described the various parts in detail, I shall now more particularly explain the operation thereof.

The weight, as will be seen, is entirely supported on the tracks running across the boat; 10 but immediately above the tracks or beside them, as may be more convenient, is a threaded shaft which passes through a flexible thimble secured to the weight. The steam-engine or other motor is operatively 15 connected, as explained, to the shaft, and it is entirely dependent on the feed as governed by the position of the link as to which direction the shaft will rotate. As the shaft rotates in one direction the weight will travel 20 along the track, for as the thimble and shaft are correspondingly threaded the said thimble must assume a different position thereon as the shaft continues to rotate. In the event of the boat careening, the plumb-rod, 25 having a heavy weight at its lower end, remains stationary, or substantially so. As the plumb-rod and rigid arm connected thereto remain stationary during the motion of the boat, when the latter careens the link must 30 assume another position, for the said link is connected, as explained, to the rigid arm 8. The movement of the link governs the admission of steam to the cylinder, as in the ordinary steam-engines. The remaining part 35 of the operation of the shaft is common practice. As the boat lists to one side the admission-valve to the steam-engine will be open to drive the shaft in one direction, and as the shaft continues to rotate in that particular direction the weight is made to travel 40 up toward the higher side of the boat, and as the boat regains level the weight will assume the position necessary to retain it so.

There are many advantages to this invention, a few of which may be mentioned here. 45 It is well known in shipping circles that a list to boats is not only dangerous, but interferes materially with their progress, as the natural lines of the vessel are completely lost in the 50 different positions which she may take in the water. This refers particularly to boats driven by steam-power. In addition to these the danger incident to the listing of a vessel is a serious menace to the lives of passengers and the safety of valuable cargoes, 55 and it has been found impossible in many instances to properly distribute cargoes so as to trim the vessel. The usual practice of having movable weights or ballast for the purpose of trimming, particularly in river and 60 lake boats, is most unsatisfactory, as it is not only slow in operation, but frequently governed by men of a very inferior order of intelligence, the consequence of which is in river

and lake boats the danger to passengers is 65 much increased. This invention, especially in the automatic part of it, obviates all the difficulties now experienced, and it is impossible during the operation of the device for the boat to assume any position for any 70 length of time which is not trim.

It must be understood that in this invention, which I describe one form of motor used the device may be operated by hand, electric, 75 air, or other motor, according to the circumstances under which it is installed, and, further, it may be said that cables may be substituted for the threaded shaft and thimble, as it is comparatively simple to construct the device with cables operating from the prox- 80 imity of the sides and winding on suitable drums or pulleys, though the particular method described is much preferable and more exact in its operation.

What I claim as my invention is— 85

1. In trimming-weights for steamboats and the like, the combination with the vessel, of a balancing-weight, a trackway therefor suitably supported from a deck of the vessel, a threaded shaft extending across 90 said vessel and journaled in suitable bearings at the sides thereof in proximity to said trackway, means secured to the said weight for connecting said shaft, and means for rotating said shaft in either direction, as and 95 for the purpose specified.

2. In trimming-weights for steamboats and the like, the combination with the vessel, of a balancing-weight, having a thimble secured thereto internally threaded and flexi- 100 bly arranged, a shaft correspondingly threaded to said thimble and extending there-through and journaled in suitable bearings in the sides in the vessel in proximity to said trackway, and means for operating said 105 shaft, as and for the purpose specified.

3. In trimming-weights for steamboats and the like, the combination with the vessel, of a balancing-weight, having a thimble secured thereto internally threaded and flexi- 110 bly arranged, a trackway therefor running across the vessel and suitably supported, a threaded shaft journaled in bearings at the sides of the vessel in proximity to said trackway, a motor having suitable connection with said shaft to drive the same in either direc- 115 tion, and a pivoted plumb-rod governing, through the motion of the boat, the feed to the motor from the source of power, as and for the purpose specified. 120

4. In trimming-weights for steamboats and the like, the combination with the vessel, of a balancing-weight, having a thimble secured thereto internally threaded and flexi- 125 bly arranged, a trackway therefor running across the vessel and suitably supported, a threaded shaft journaled in bearings at the sides of the vessel in proximity to said track-



way, a reciprocating steam-engine having a link-motion reversing-gear and a swinging plumb-rod governing, through the motion of the boat, the position of the link in said reversing-gear, as and for the purposes specified.

5 Signed at Montreal, in the district of Montreal, in the Province of Quebec, in the Do-

minion of Canada, this 13th day of February, 1906.

C. C. ROUILLARD.

Witnesses:

G. H. TRESIDDER,  
I. DEUTSCH.