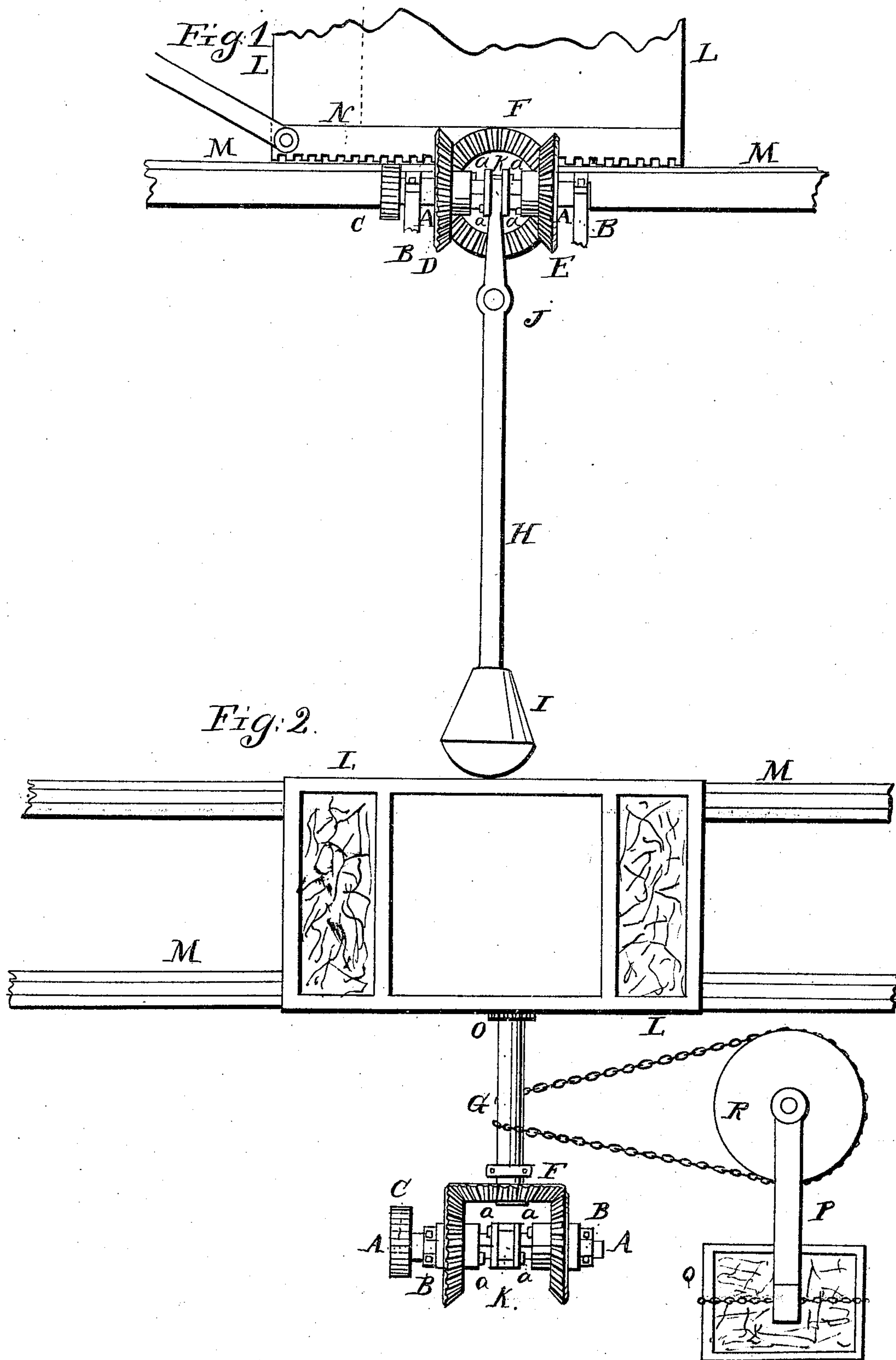


Purse & Staley, Ballast.

N^o 1460.

Patented Dec. 31, 1839.



UNITED STATES PATENT OFFICE.

SAMUEL N. PURSE AND MARTIN STALEY, OF ASHLEY, MISSOURI.

IMPROVEMENT IN THE MODE OF PRESERVING THE EQUILIBRIUM OR TRIM OF STEAMBOATS.

Specification forming part of Letters Patent No. 1,460, dated December 31, 1839.

To all whom it may concern:

Be it known that we, SAMUEL N. PURSE and MARTIN STALEY, of the town of Ashley, in the county of Pike and State of Missouri, have invented a new and useful Machine for the Purpose of Preserving the Equilibrium or Trim of Steamboats; and we do hereby declare that the following is a full and exact description thereof.

Figure 1 in the accompanying drawings represents a front view of the apparatus, and Fig. 2 a top view.

In each of the figures where like parts are represented the same letters of reference are employed.

A A is a shaft revolving in suitable bearings B B on the deck of the boat. Upon this shaft there is a pulley C, to receive a band by which the shaft is made to revolve whenever the steam-engine is in motion.

D and E are two bevel-wheels, which turn freely upon cylindrical portions of the shaft, and these both mesh into the bevel-wheel F, affixed to a shaft G, which is to communicate motion to a carriage or other apparatus by which the trim is to be effected. H is a pendulum having a heavy weight I at its lower end. This pendulum hangs below the deck and turns freely on a fulcrum at J. It extends up above the fulcrum and embraces a clutch K, which is made to slide back and forth on the shaft, made square or provided with a feather to keep it from revolving.

On the hubs of the wheels D and E and also upon each side of the clutch there are projections *a a a*, to cause the clutch to engage with the wheels when brought up against them.

The pendulum H should be forked at its upper end, so as to embrace the clutch on both sides, and it is to be checked laterally by checks formed on the clutch.

A carriage L L is placed on railways M M, crossing the deck. This carriage may be loaded at each end or throughout its whole length, as may be preferred, and it is to run upon wheels or trucks adapted to the rails.

It is provided with a rack on one side, as shown at N, and into this a pinion O meshes, which pinion is fixed upon the shaft G.

It will be seen that when the boat is on an even keel and the clutch remains consequently on the center of the shaft the wheels D, E, and F will remain at rest; but if the boat keels over the clutch will engage with the wheel D or E and motion will be communicated thereby to each of them and to the wheel F, the shaft G, and the pinion O, which will move the carriage over until the equilibrium is restored.

We have thus fully described the manner in which we intend, in general, to construct our apparatus; but the mode of procedure may be varied, while the principle of action remains the same. There may, for example, be a crane of the ordinary kind placed on each side of the boat. A top view of this arrangement is shown in Fig. 2, P being the arm of one of the cranes; Q, the weight suspended by it; R, a chain-wheel fixed on the shaft of the crane, around which a chain passes, the two ends of which are attached to the axle G. By a similar arrangement on the opposite side of the boat the two cranes may be simultaneously acted upon, one of them being made to swing out and the other to swing in. The load may be a portion of the freight or other weighty body.

What we claim as our invention, and desire to secure by Letters Patent, is—

The preserving of the equilibrium or trim of steamboats by means of an apparatus operating substantially in the manner of that above described—that is to say, the combination of a pendulous weight, clutch, gearing, and weighted carriage or suspended weights, as set forth, for the purpose of preserving the trim of boats, and thus improving their speed and obviating a frequent cause of explosions.

SAMUEL N. PURSE.
MARTIN STALEY.

Witnesses:

W. W. STALEY,
DANIEL CORKER.