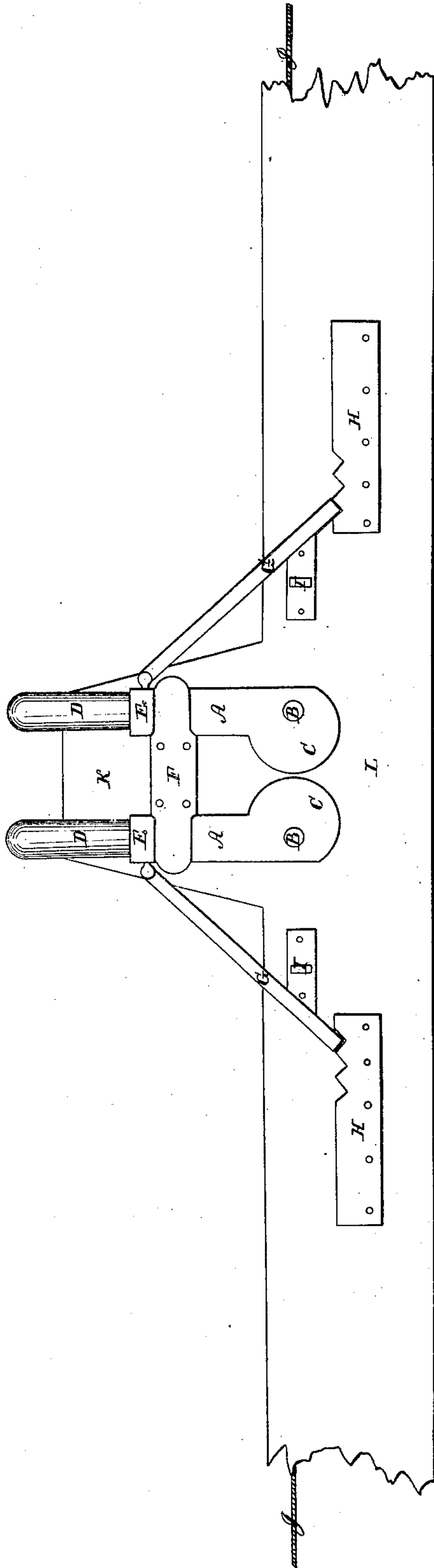


*H. J. Crandall.*  
*Keel Pall.*

*N<sup>o</sup> 11,932.*

*Patented Nov. 14, 1854.*



# UNITED STATES PATENT OFFICE.

HORACE I. CRANDALL, OF EAST BOSTON, MASSACHUSETTS.

## MODE OF ADJUSTING VESSELS UPON THE KEEL-BLOCKS OF DRY, SECTIONAL, OR RAILWAY DOCKS.

Specification of Letters Patent No. 11,932, dated November 14, 1854.

*To all whom it may concern:*

Be it known that I, HORACE I. CRANDALL, born in Westerly, State of Rhode Island, and now a resident of East Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Method of Holding Vessels by the Keel in Dry, Sectional, or Railway Docks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

A is a hollow tube which is hung on a pin B, to the bearer L, with a weight on the lower end that will tend to keep the tube A perpendicular.

D is a slide made to insert into the tube A and be secured the desired height by means of screw E.

F is a cleat attached to the keel block K to support the tube A in case a vessel's keel should slide while pressing against the slide D.

G is a pawl attached at one end to the upper end of tube A, with a hinge or revolving joint and the other end to play in the ratchet H to support the tube A when the vessel's keel is pressing against the slide D.

H is a ratchet for pawl G to play in and brace against.

I is a catch attached to bearer L and so arranged that it can hold the tube A in a

horizontal position when required, and be detached when required by means of rope J.

K is a keel block for the vessel's keel to rest upon.

L is the bearer which the keel block K rests upon. It is intended that these pawls should be used in pairs. Two pair should be used upon every dock that adopts them and to be used in the following manner. Haul the vessel into the dock on the weather side (either by wind or tide) of the keel blocks K and then pull upon the rope J which will let the tube A become perpendicular with the slide D projecting above the keel blocks K. The vessel can then be slacked away until her keel bears against the slide D, sideways. Then pull upon the rope J on the opposite side and the vessel's keel will be confined between the two slides D, D. If at any time the slides D, are too high so as to touch the vessel's planking before her keel bears upon the keel blocks K, the slides D, will press down into the tube A.

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

The manner in which the materials are arranged for the purpose of holding vessels by the keel in a required place in dry, sectional or railway docks.

HORACE I. CRANDALL.

In presence of

JOHN A. LORING,  
A. J. COOLIDGE.