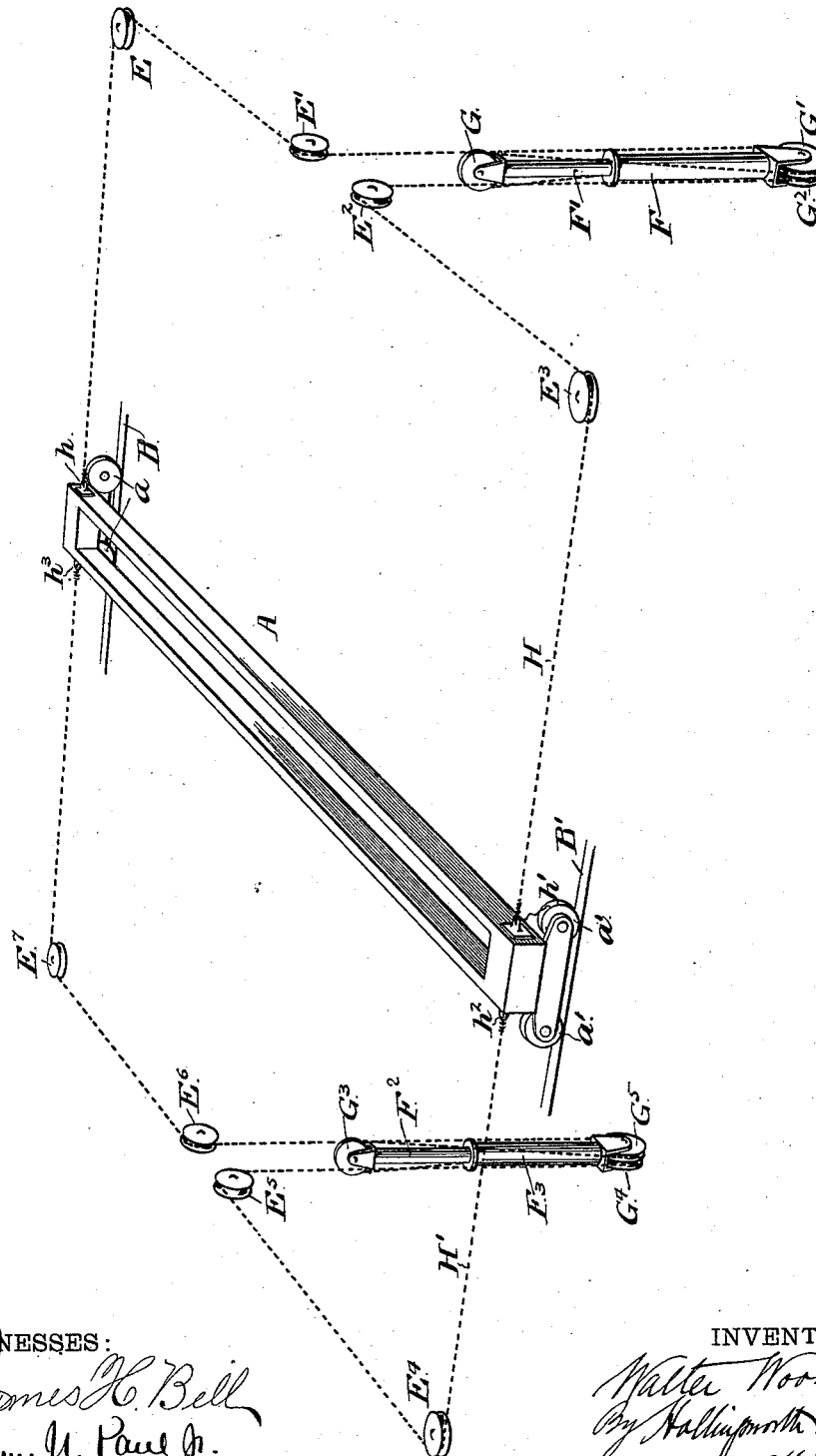


W. WOOD.
TRAVELING CRANE.

Patented July 21, 1891.



WITNESSES:

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TRAVELING CRANE.

SPECIFICATION forming part of Letters Patent No. 456,188, dated July 21, 1891.

Application filed August 23, 1890. Serial No. 362,911. (No model.)

To all whom it may concern:

Be it known that I, WALTER WOOD, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Traveling Cranes, whereof the following is a specification, reference being had to the accompanying drawing.

In said drawing the figure represents a partial view in perspective of the bridge and its actuating devices, the trolley and lifting mechanism being omitted.

My invention relates to certain bridge-shifting devices in which the actuating-ropes connected with the bridge lead thence to the different ends of the ways and are there actuated by a single hydraulic plunger; and my present improvement contemplates the direct attachment of these ropes to the bridge; but instead of terminating said ropes at their respective hydraulic cylinders I make those portions of the ropes which are adjacent to each cylinder continuous, and thus render said ropes self-adjusting, so as to absolutely prevent unequal strains upon the different ends of the bridge.

In the accompanying drawing, A represents the bridge provided with rollers a a' , adapted to travel longitudinally upon the ways B B'. To the ends of the bridge and upon each side thereof are attached the shifting-ropes H H', leading to the respective ends of the line of ways. At said ends of the line of ways are hydraulic cylinders F F', having pistons and plungers F' F', respectively, each of which is provided at its head with a pulley, as indicated at G and G'. Each cylinder is also provided with a pair of pulleys independently mounted upon a fixed axis, those of the cylinder F being represented at G' and G², and those of the cylinder F' being represented at G⁴ and G³.

The shifting-rope H is attached at one end of the bridge to a fixed anchoring-point h . Thence it leads around a pulley E at the proximate end of the ways, thence around a pulley E', and thence descends to pass around one of the pulleys G' upon the cylinder. It then rises over the pulley G upon the plunger-head, descends again and passes around the other pulley G² upon the cylinder, rises, passes by way of the pulley E² to and around the pulley E³, situated at the end of the line of ways, and thence passes to a fixed point

of attachment h' at the opposite end of the bridge from whence it started, but upon the same side thereof. The other rope H' is similarly applied to the other side of the bridge, viz: Starting from the fixed anchoring-point h^2 at one end thereof, it leads to the proximate end of the ways, passes around the pulley E⁴, thence down over the pulley E⁵, to and around the pulley G⁴ upon the cylinder, thence rises over the pulley G³ upon the plunger, and thence descends and passes around the other pulley G⁵ upon the cylinder. Thence it rises over the pulley E⁶ and passes around the pulley E⁷ at the end of the line of ways, and thence leads to the second point of attachment h^3 at the other end of the bridge.

The method of operation is as follows: Assuming that the plunger F' is forced outward from the cylinder, the thrust upon the rope H is multiplied by its passage around the pulleys G G' G², and shifts the bridge toward the cylinder F. The converse motion of the bridge is obtained by the cylinder F³. In either case it will be seen that, the rope being free to adjust itself at the cylinder, no inequality of hauling strain can occur between the different ends of the bridge, and thus a more complete parallel movement of the bridge upon its ways is obtained than if there were no continuity of the rope around the cylinder.

I am aware that it is not, broadly speaking, new to combine with bridge ways or rails a bridge mounted on said rails, two hydraulic motors, and suitable connections leading from said bridge in opposite directions and respectively connected with said motors, and I do not claim such combination.

The novelty of my present invention lies in the fact that the bridge-shifting ropes are connected with both ends of the bridge upon the respective sides thereof, but instead of terminating at their respective plungers are continuous and freely supported at their points of connection with said plungers, so as to permit a compensating lengthwise movement of the ropes at said points of connection and the consequent self-adjustment thereof to prevent unequal strain upon the different ends of the bridge.

Having thus described my invention, I claim—

The combination, with the bridge adapted to travel on longitudinal ways, of a hydraulic plunger and cylinder arranged at each end of the line of ways, pulleys upon said plungers and cylinders, substantially as described,
5 and bridge-shifting ropes connected with the ends of the bridge upon the respective sides thereof, thence passing to and around the pulleys at the respective ends of the line of
10 ways, and thence leading, each in continuity,

around the pulleys upon the cylinders and plungers, respectively, whereby the self-adjustment of each rope is permitted at the plunger under the direct thrust thereof, substantially as set forth.

WALTER WOOD.

Witnesses:

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