

(No Model.)

2 Sheets—Sheet 1.

A. J. SHAW.
HOISTING MACHINERY.

No. 528,618.

Patented Nov. 6, 1894.

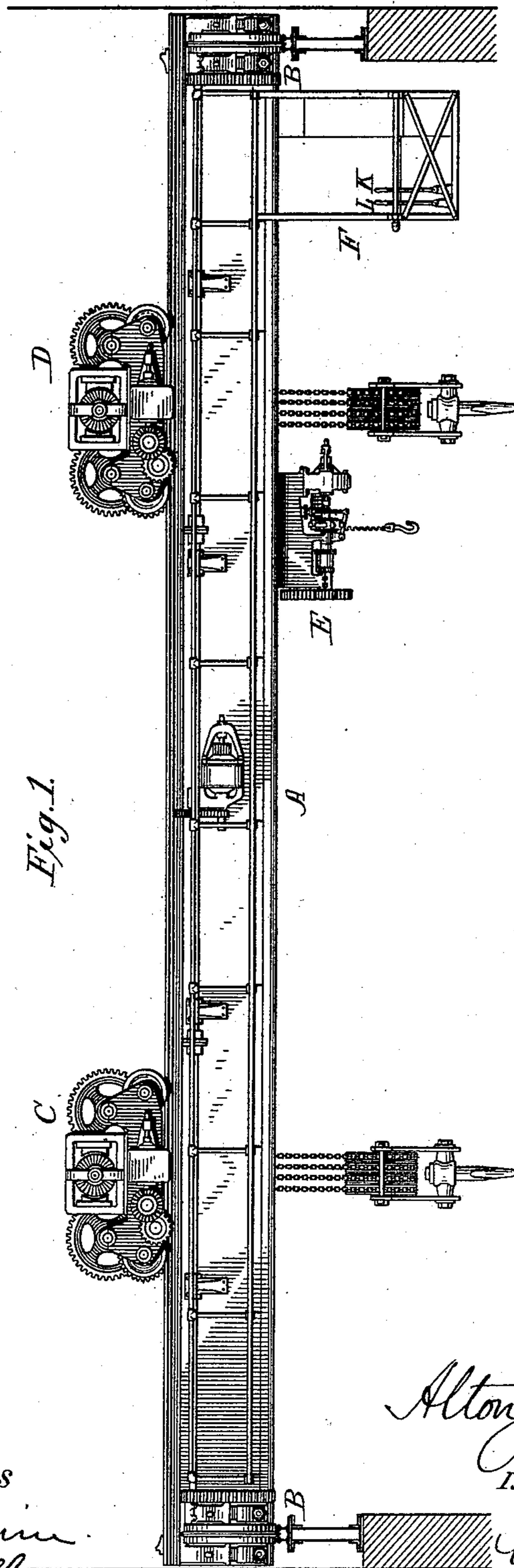


Fig. 1.

WITNESSES
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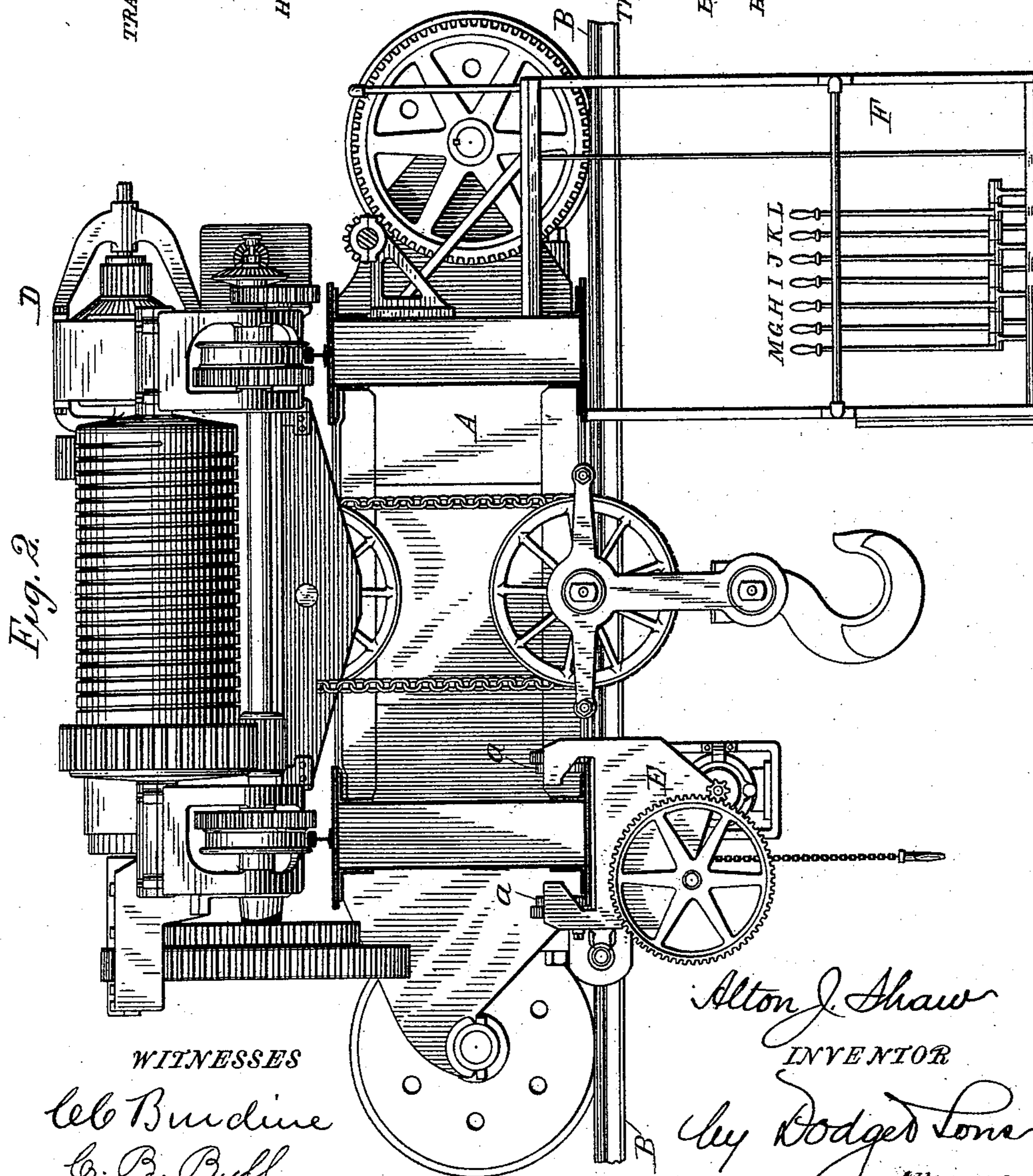
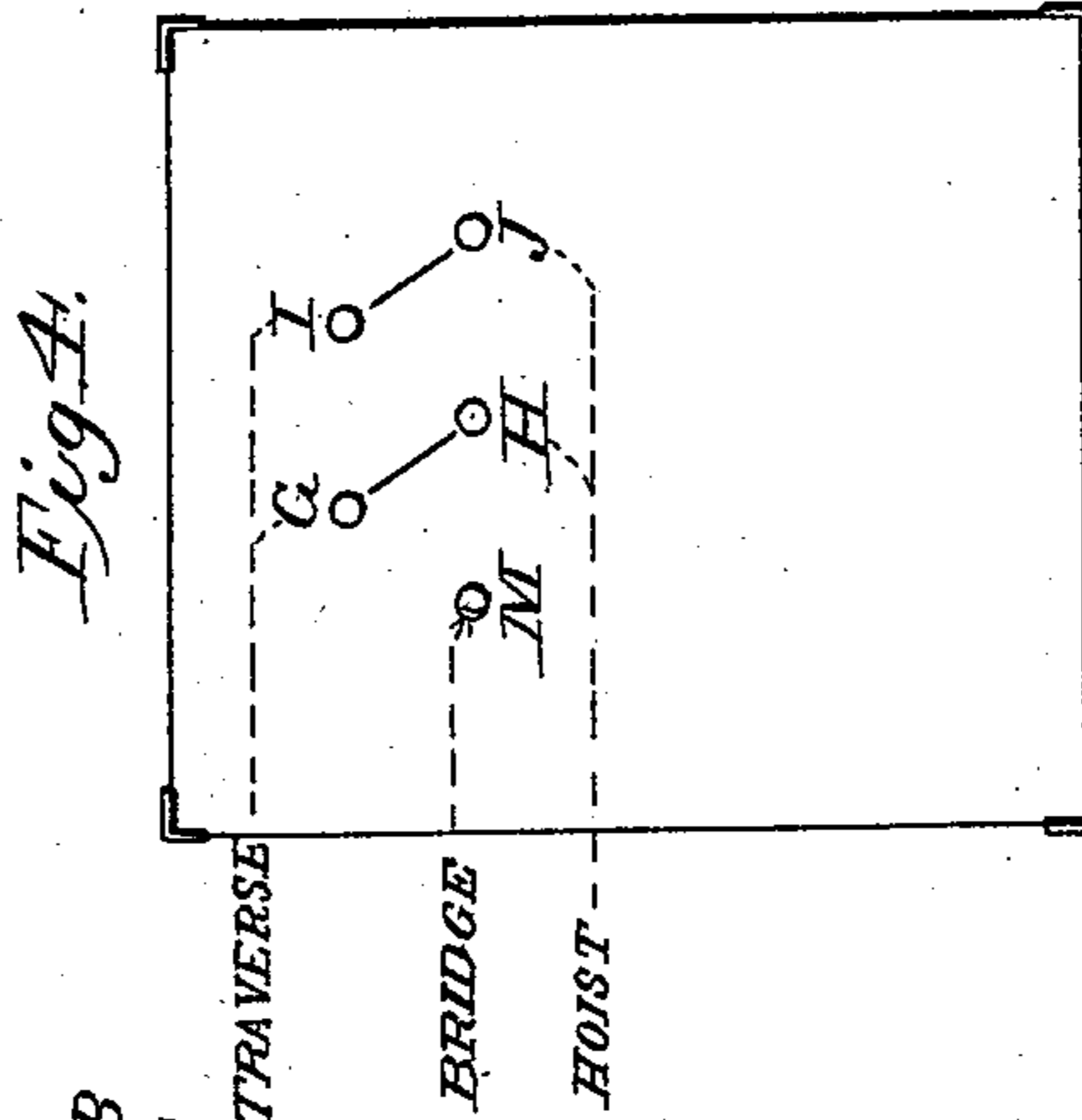
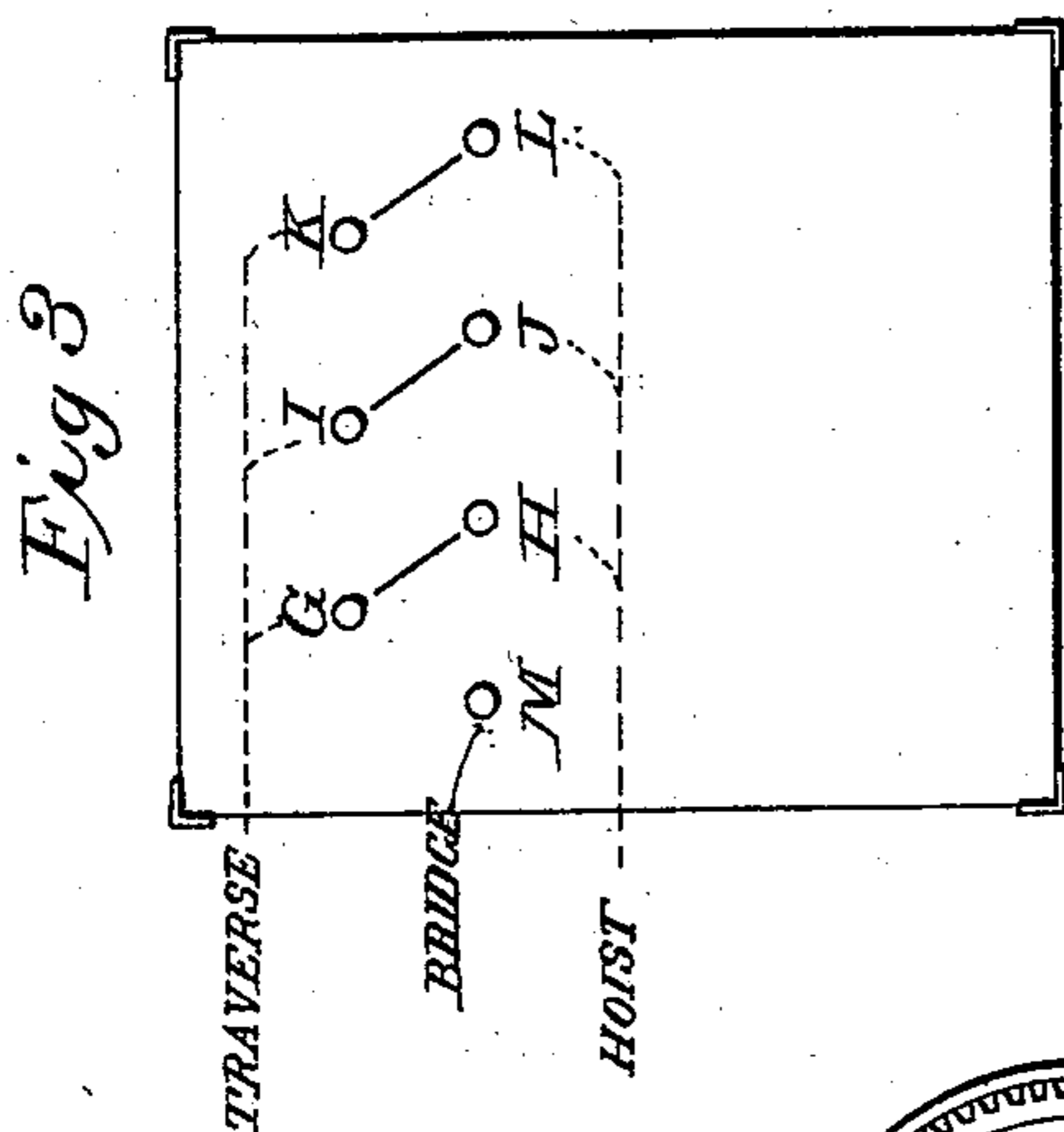
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2 Sheets—Sheet 2.

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WITNESSES

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UNITED STATES PATENT OFFICE.

ALTON J. SHAW, OF MUSKEGON, MICHIGAN, ASSIGNOR TO THE SHAW
ELECTRIC CRANE COMPANY, OF SAME PLACE.

HOISTING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 528,618, dated November 6, 1894.

Application filed June 7, 1894. Serial No. 513,849. (No model.)

To all whom it may concern:

Be it known that I, ALTON J. SHAW, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Hoisting Machinery, of which the following is a specification.

My invention relates to hoisting machinery, and consists essentially in a novel arrangement of the operating levers thereof, whereby the attendant is enabled to grasp and operate the several levers with ease and certainty and without danger of confusion.

The invention is more particularly designed for that class of traveling bridge cranes employing two or more trolleys, and requiring a considerable number of levers for their manipulation and control, but it is applicable generally to cranes requiring any considerable number of operating levers.

In the accompanying drawings,—Figure 1 is a side elevation of a traveling bridge crane provided with three trolleys, two main hoisting trolleys, and a third light whip trolley for general use in connection with or independently of the larger hoisting trolleys; Fig. 2, a cross section through the bridge, showing one of the main trolleys and the supplemental or whip trolley; Fig. 3, a diagram illustrating the arrangement of the levers for the crane shown in Figs. 1 and 2; and Fig. 4, a similar diagram showing the arrangement of said levers as used with a two trolley crane.

This invention is here represented as embodied in an electric traveling bridge crane, and it is for such use that it is particularly designed, but it is applicable generally to cranes and hoisting machinery, regardless of the motive power employed or the means of transmission of such power.

It is unnecessary to enter into any detailed description of the crane, in view of the foregoing statement, and particularly in view of the fact that beyond the necessity of showing mechanism to be controlled by the levers hereinafter referred to, no further understanding of the construction is required.

A indicates a traveling bridge, designed to traverse the usual runway B, along a shop, foundry, or other building.

C and D indicate two trolleys mounted and adapted to travel upon the top of the bridge, and provided with hoisting gear suited to the purposes for which the crane is intended.

E indicates a small supplemental trolley carried by rollers *a* traveling upon the upper surface of the plates or angle irons at the bottom of one of the main girders of the bridge.

No claim is made in this application to the above arrangement of trolleys, though such claim is made in another application filed in my name on the 7th day of June, 1894, and designated by Serial No. 513,850. Reference is here made to these parts merely for the purpose of general explanation, as above stated.

F indicates a cab or cage in which are placed levers for controlling the various "movements;" or in other words, for causing the hoisting gear of each trolley to operate in proper time, and to raise or lower as required. Heretofore these levers have commonly been arranged in a straight line and marked in one way or another to indicate the purpose and function of each. Under my arrangement, however, I arrange the trolley traverse levers in one line or series, and the hoisting levers in a second line or series, offsetting those of one series with those of the other to facilitate access to those farthest from the operator, and to permit free movement of each through its full range without collision or interference with another.

The bridge-controlling lever is preferably arranged in line with one or the other group of levers above referred to; but this is not essential, and said lever may be placed wherever found convenient. In thus grouping the levers it is important that the trolley traverse lever and the lever controlling the hoist of that particular trolley, be so arranged relatively as that they shall indicate by their position their relation, and that the hand may readily pass from one to the other, since the control or actuation of the one naturally follows that of the other.

Referring again to Fig. 3, G and H indicate respectively the trolley traverse lever and the hoisting lever controlling trolley C. Levers I and J indicate respectively the trolley traverse lever and hoisting lever of trolley D.

Levers K and L represent respectively the trolley traverse lever and hoisting lever of the supplemental or whip trolley E. M indicates the bridge traverse lever. As shown, 5 the levers G, I and K are set out of line with the levers H, J and L, but in each case the trolley traverse lever is set to the left of the hoist lever of the same trolley under the arrangement shown in Fig. 3. This may, how- 10 ever, be reversed, and the first series placed to the right of those of the second series. The bridge lever M will conveniently be located at the left hand end of the series of hoisting levers.

15 In Fig. 4 I have shown precisely the same arrangement, except that the levers K and L are omitted, because this arrangement is designed for a two trolley crane or hoist. This arrangement of levers enables the operator to 20 tell at a glance and without any marking of the levers, precisely what the actuation of any one will occasion. He knows that all the levers in the outer series serve to produce a given result in their respective trolleys, 25 namely, that of causing a traverse or travel of the trolley, and their position indicates the number and location of the trolley as 1, 2 and 3. The main trolleys being on the same track cannot pass each other, and consequently can 30 never change their relation, and hence C will always be 1 and D will always be 2, while E, if used, must be the remaining one, or No. 3. Similarly, the hoisting levers by their location show that they are the hoisting levers, 35 and likewise indicate by their relative position or order in line, that they belong respectively to the trolleys No. 1, No. 2, and No. 3. The bridge lever being different from the others, and standing out of the order obtain-

ing among the others, is thereby readily distinguishable, and not liable to be mistaken. 40

Having thus described my invention, what I claim is—

1. In combination with hoisting machinery comprising two or more trolleys and hoisting 45 gear carried by each, a group of levers for controlling the traverse of said trolleys, and a second group of levers for controlling the hoisting gears thereof, the levers of one group being arranged out of line with those of the 50 other group.

2. In combination with a plurality of trolleys and with the hoisting mechanism thereof, a plurality of levers, one for controlling the 55 traverse of each trolley, and a plurality of independent levers for controlling the hoisting gear of said trolleys, the traverse and the hoist lever of each trolley being arranged out of line with but in close proximity to each other.

3. In a hoisting apparatus substantially such 60 as described and shown, the combination of trolley traverse levers G, I and K, and levers H, J and L arranged in two lines or series, the levers of one group being spaced intermediate of those of the other group, whereby space is 65 afforded to reach the levers of the farther group and operate the same.

4. In combination with trolley traverse hoist levers G, H, I and J, staggered as shown, lever M for bridge traverse, substantially as 70 and for the purpose set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ALTON J. SHAW.

Witnesses:

F. W. BABCOCK,
T. C. AKIN.