R. A. REYNOLDS & A. C. RAYMOND.

CARRIAGE FOR TRANSPORTING AND LAYING CONCRETE BEAMS.

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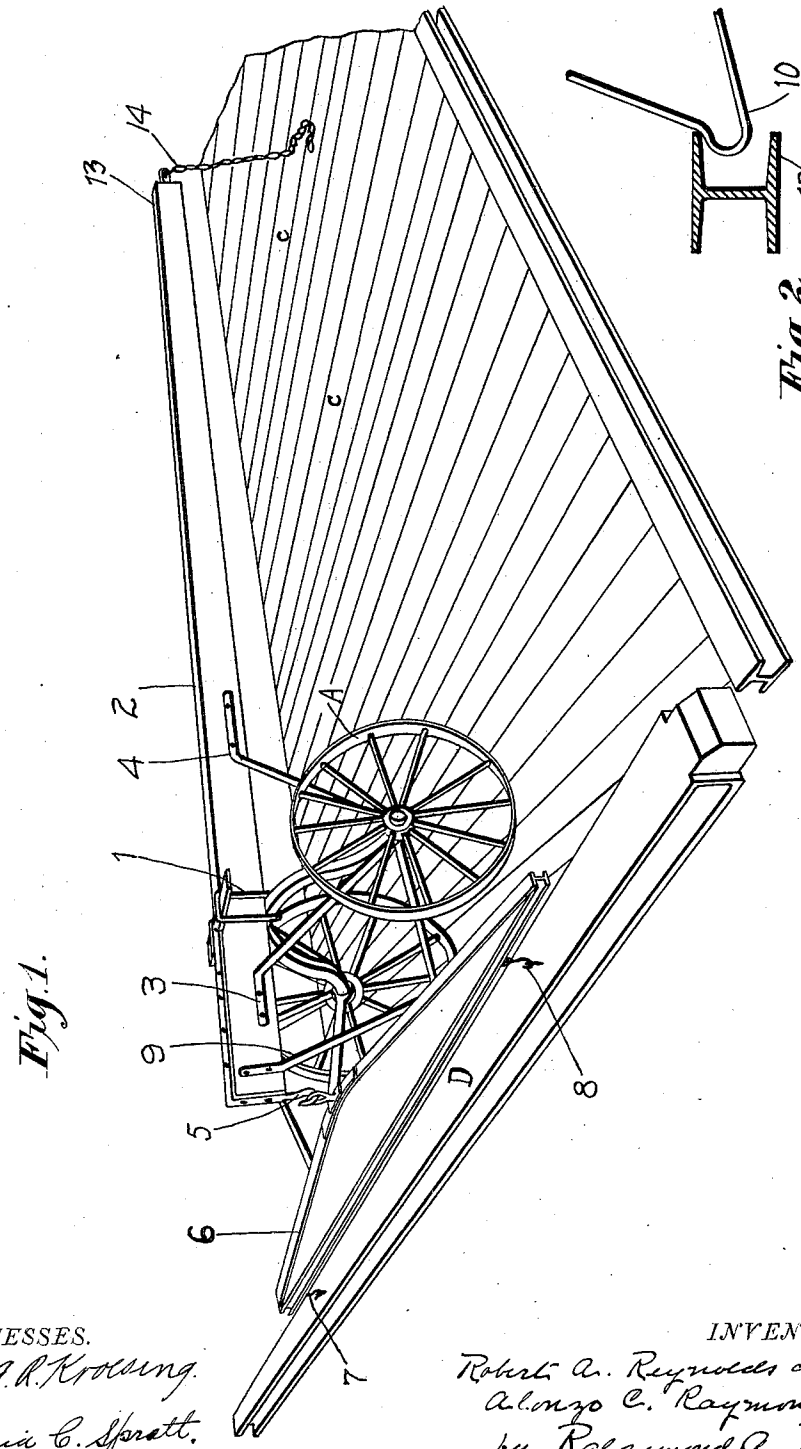

Fig. 1.

Fig. 2.

WITNESSES.

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CARRIAGE FOR TRANSPORTING AND LAYING CONCRETE BEAMS.

1,029,224. Specification of Letters Patent. Patented June 11, 1912.

Application filed December 13, 1911. Serial No. 665,553.

To all whom it may concern:

Be it known that we, ROBERT A. REYNOLDS and ALONZO C. RAYMOND, citizens of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Carriages for Transporting and Laying Concrete Beams, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The invention relates to carriages for transporting and laying concrete beams or joists and has for its object a carriage of simple construction which will transport the beams through places that cannot be reached by an ordinary derrick and which can be used for laying the same in their respective places on the girders. This carriage can be operated by a very few men and will lay about ten square feet of concrete beam a minute or in the neighborhood of five thousand square feet in a day, at a maximum cost of about one cent per square foot for the operation.

In the drawings:—Figure 1, is a perspective of the carriage. Fig. 2, is a detail showing the snubbing bar in engagement with the concrete beam.

The wheels A and B are rotatively mounted on the arched axle 1, to which is strapped the tongue 2. Braces 3 and 4 also connect the ends of the axle to the tongue. At the forward end of the tongue is a hook 5, upon which hangs an equalizing bar 6. This equalizing bar is provided at equidistant points from its mid-point, with loosely hung hooks 7 and 8. These hooks can be placed through rings which are provided in the concrete beams when they are manufactured. A snubbing bar 9 is attached to the forward end of the tongue 2 and extends down almost directly below the hook 5 and is provided with a bend or nose 10, which is adapted to engage between the upper and lower flanges 11 and 12 of the I beam.

When the beams have been laid upon the ground where the work is to be done, this carriage is manned by about six men; four being provided for the tongue and wheels and one at each end of the beam.

When the carriage is put into operation, the hooks on the evener bar are fastened to the rings in the beam and the same is readily lifted by depressing the end 13 of the tongue. The tongue from the axle to the end 13 is about six times as long as from the hook 5 to the axle, thereby affording a leverage of six to one. This leverage is such that the weight of the average man alone will lift a 900 lb. beam which is approximately the weight of a beam of 16 foot span. If desired, a longer tongue may be used with a chain 14 attached so that when the end rises above the heads of the men it may be handled with the chain. After the beam is lifted, the carriage is pushed up an inclined run-way, assuming that flooring is being laid on the first floor, and the carriage is then rolled over the beams already placed, such as C—C and is then ready to drop the beam into place. As the beam D is carried at right angles to the tongue, it is in position on the carriage to be set so that all that is necessary is to move the carriage up to the edge of the concrete members already laid and place it in proper position to drop the beam adjacent the last preceding one laid. To accomplish this, two of the men stand at the end 13 and hold the bar in lifted position, while two men are placed, one at each wheel, so that the carriage may be moved slightly to facilitate the proper dropping of the beam, while one man is placed at each end of the beam so that he may swing his end of the beam upon the hook 5 as a pivot. The man located at the end may swing the beam either horizontally or vertically on the hook 5 as a pivot. The snubbing bar 9 engages between the flanges of the I beam and prevents the I beam from swinging around against the wheels or from oscillating up and down when the bar is being transported. The nose 10 effects this by engaging between the upper and lower flanges of the I beam, but when the beam is about to be laid, the tipping of the end 13 of the tongue slightly upward, withdraws the nose 10 from the beam, so that it does not in any way interfere with its setting.

This carriage is also very useful in laying concrete beams on girders in steel skeleton buildings, for in such buildings the use of a derrick is almost an impossibility. The

beams are raised from the ground to the floor being laid, by the common jib crane and are then taken up by our carriage and set as above described.

In practice, we have found this carriage affords a very much improved method of handling beams as compared with handling with a derrick, even in places where the derrick might be used, for the reason that the derrick has to be frequently moved, and is more costly; while using our invention the beams can be set with greater facility and at a much reduced cost.

What we claim is:—

1. A carriage for handling concrete beams, having in combination, a pair of wheels, an axle, a tongue supported thereon at one side of its mid-point, and an equalizer bar swivelly connected with the shorter end of the tongue and suspended at right angles thereto, substantially as described.

2. A carriage for handling concrete beams, having in combination, a pair of wheels, an axle, a tongue supported thereon at one side of its mid-point, an equalizer bar swivelly connected with the shorter end of the tongue and suspended at right angles thereto and loosely hung hooks attached to said equalizer bar at points equidistant from its point of suspension, substantially as described.

3. A carriage for handling concrete beams, having in combination, a pair of wheels, an axle, a tongue supported thereon at one side of its mid-point, an equalizer bar swivelly connected with the shorter end of the tongue and hanging at right angles thereto, and a snubbing bar provided with a nose adapted to engage between the flanges of a concrete I beam, substantially as described.

4. A carriage for handling concrete beams, having in combination, a pair of wheels, an axle, a tongue supported thereon at one side of its mid-point, an equalizer bar swivelly connected with the shorter end of the tongue and at right angles thereto, and a snubbing bar to prevent the concrete beam swinging against the wheels, substantially as described.

In testimony whereof, we sign this specification in the presence of two witnesses.

ROBERT A. REYNOLDS.
ALONZO C. RAYMOND.

Witnesses:
STUART C. BARNES,
VIRGINIA C. SPRATT.