

MATERIAL TRANSFERRING APPARATUS.

Patented Mar. 4, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

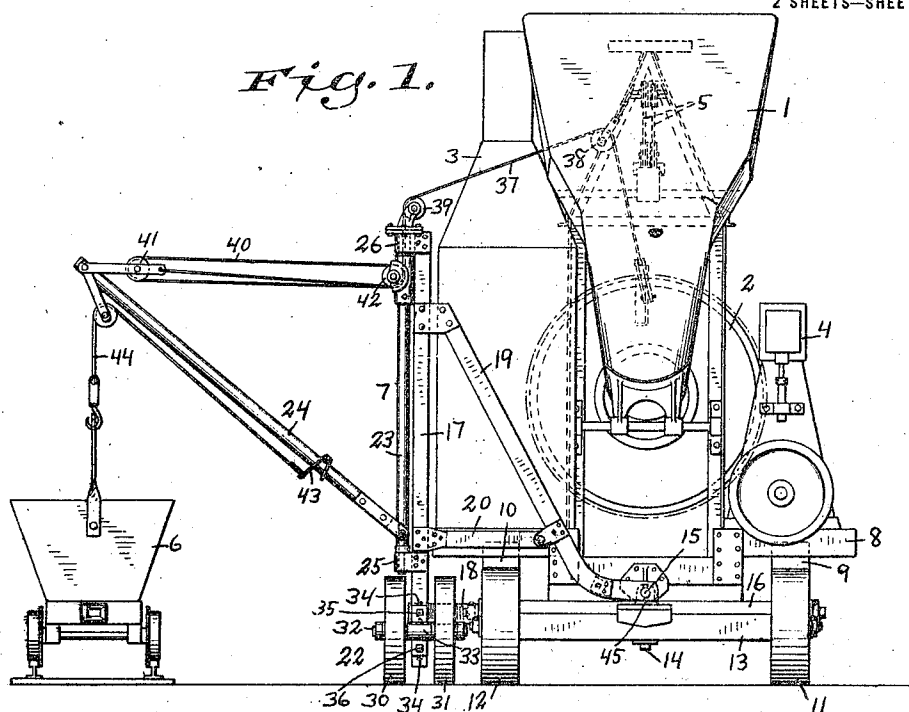
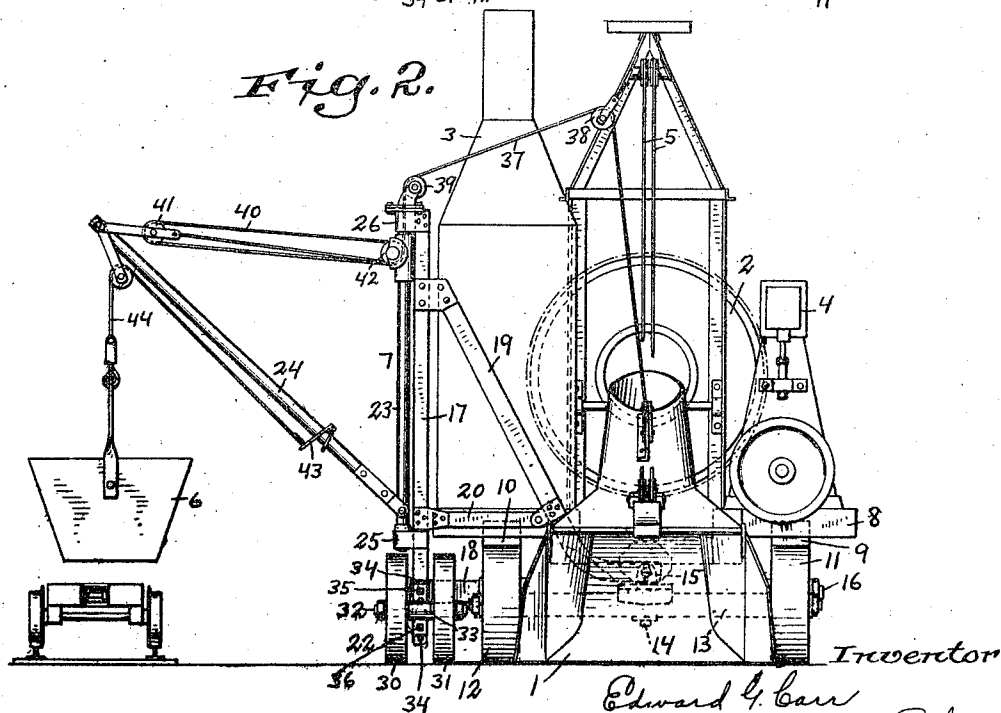


Fig. 2.



Inventor

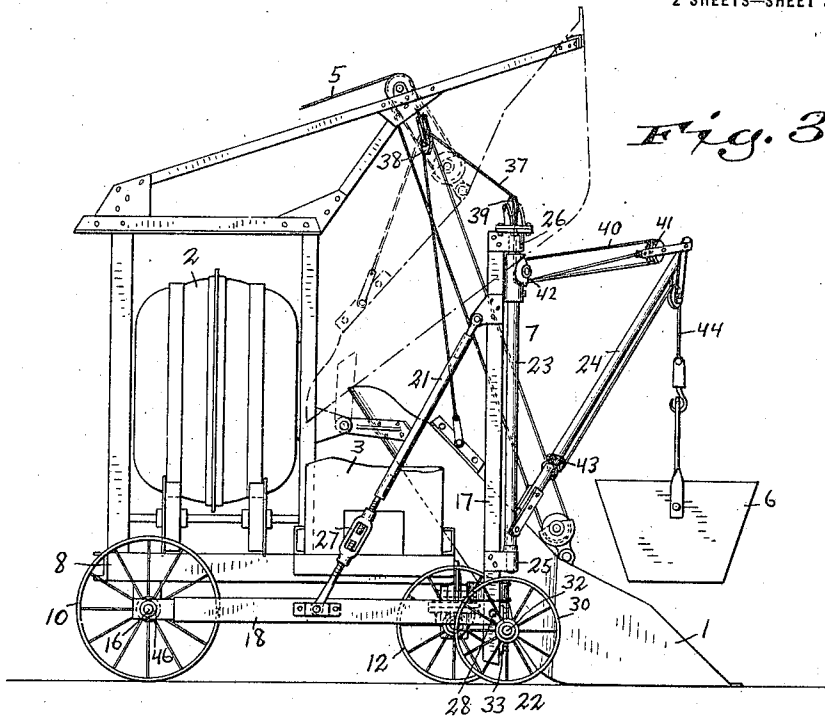
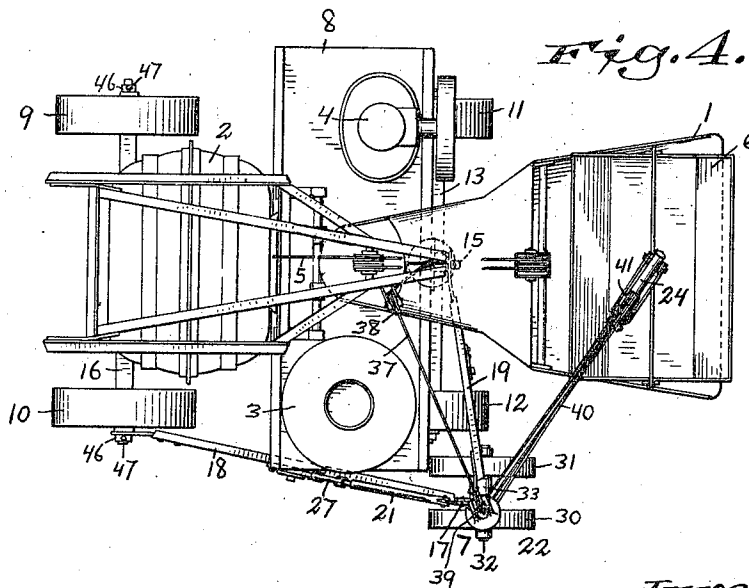
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MATERIAL TRANSFERRING APPARATUS.
APPLICATION FILED AUG. 12, 1918.

1,295,849.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MATERIAL-TRANSFERRING APPARATUS.

1,295,849.

Specification of Letters Patent.

Patented Mar. 4, 1919.

Application filed August 12, 1918. Serial No. 249,561.

To all whom it may concern:

Be it known that I, EDWARD G. CARR, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Material-Transferring Apparatus, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to material transferring apparatus and the object of the invention is to improve material transferring apparatus in the manner to be hereinafter described and claimed.

Referring to the drawings which accompany this specification and form a part hereof, which drawings illustrate an embodiment of this invention, and on which drawings the same reference characters are used to designate the same parts wherever they may appear on each of the several views, Figure 1 is an end elevation of a concrete mixer with the invention applied thereto; Fig. 2 is a view similar to Fig. 1 but showing parts in different positions; Fig. 3 is a side elevation; and Fig. 4 is a plan view. The concrete mixer is illustrated schematically and all parts not necessary to a complete understanding of this invention are omitted from the drawings so far as practicable.

The present invention is an improvement on the material transferring apparatus for which I made application for Letters Patent on March 8, 1918, Serial Number 221,142.

Referring to the drawings, the reference numeral 1 designates a hopper which can be lifted to charge the mixing drum 2, or which can be lowered to be loaded or charged. A boiler 3, engine 4 and cable 5 are illustrated as the power mechanism for lifting the hopper 1. When the cable 5 is slackened, the hopper 1 will fall by its own weight and the weight of the hopper 1 is utilized to lift a receptacle 6 containing material to load or charge the hopper 1. The hopper 1, and the concrete mixer as a whole are adapted to be moved from place to place and the object of the present invention is to combine an independently supported derrick with the hopper 1 in such a manner that the hopper and derrick can be moved as a unit without any possibility of disturbing the relationship of the parts of the apparatus.

A derrick frame 7 is pivoted to the frame 8

of the concrete mixer in such a manner that it can move up or down with respect to the frame of the concrete mixer but cannot move to any material extent either transversely or longitudinally thereof. The concrete mixer illustrated is provided with rear wheels 9 and 10 and front wheels 11 and 12. The front wheels are secured upon an axle 13 which is movable with respect to the frame 8 of the concrete mixer both on the king bolt 14 and the rocking bolt 15. The rocking bolt 15 extends longitudinally of the frame 8 of the concrete mixer while the rear axle 16 extends transversely thereof so the rocking bolt 15 and the rear axle 16 afford convenient means for pivoting the derrick frame to the frame 8 of the concrete mixer in lines at right angles with each other.

The derrick frame 7 may be constructed in any suitable or preferred manner. As illustrated by the drawings, it is composed of an upright 17, a longitudinal tie member 18, a transverse tie member 19, a brace 20, a longitudinal, adjustable brace 21, an adjustable support 22, a mast 23 and a boom 24. The boom 24 is pivotally connected with the mast 23 and the mast is rotatably supported at its lower end by a step 25 secured to the upright 17 and its upper end is rotatable within a strap 26 also secured to the upright 17. The longitudinal, adjustable brace 21 is pivotally connected with the mast 23 and with the longitudinal tie member 18 and is composed of two parts connected by a turnbuckle 27. By turning the turnbuckle 27, the upright 17 and mast 23 can be made vertical or inclined. The longitudinal tie member 18 is connected with the upright 17 by a bolt or pivot 28 to permit of relative movement. The support 22 for the derrick frame is illustrated as composed of two wheels 30 and 31, an axle 32 and an axle box 33. The wheels 30 and 31 tread in the same direction as the wheels of the concrete mixer so as to travel together and the upright 17 is provided with a plurality of bolt holes 34 for the bolts 35 and 36 to provide for bodily vertical adjustment of the upright 17, when necessary. It will be understood that in most cases all adjustment that is necessary will be the alining of the upright 17 with or away from the vertical by the turnbuckle 27 but, if necessary on account of grade or unevenness of the surface, the derrick frame itself may be raised or lowered to make the

upright 17 and the mast 23 vertical. It is preferred to have the upright 17 and the mast 23 substantially vertical so there will be no tendency for the boom to swing but, if it is desired to have the boom swing either toward or away from the hopper 1, the upright 17 (and the mast 23) can be inclined from the vertical in a manner which is well understood. The transverse tie member 19 fits on the rocking bolt 15 with rather a loose fit and the longitudinal tie member 18 fits on the rear axle 16 with rather a loose fit so that there is no binding of the parts for the amount of relative movement required.

15 A flexible cable member 37 is fastened to the hopper 1, passes over pulleys 38 and 39, into a hollow upper part of the mast 23 and forms a boom tackle 40 for lifting the boom 24. The number of sheaves 41 and 42, and the number of turns of the cable 37, may be changed to obtain more or less lift of the boom 24 or less or more lifting power. A clamp 43 which automatically grips the boom when subjected to strain provides simple means for lengthening and shortening the reach of the cable 44.

The derrick frame 7 is readily attached to or detached from the concrete mixer. A pin 45 prevents the rocking bolt 15 from being displaced and the removal of this pin permits the transverse tie member 19 to be slipped over the rocking bolt 15 or slipped off therefrom. Collars 46 and pins 47 keep the rear wheels on the rear axle 16 and the removal of a pin and collar permits the longitudinal tie member 18 to be slipped over the end of the rear axle or slipped off therefrom. When the cable 37 is unfastened from the hopper 1 and the tie members have been removed from the rocking bolt and rear axle, the derrick frame is entirely free from the concrete mixer.

It will be readily understood that when the hopper 1 is lifted to discharge its load or charge, the boom 24 and the receptacle 6 are lowered, and when the hopper falls the boom 24 and a receptacle 6 are lifted so that the receptacle can be swung around over the hopper and its contents dumped into the hopper.

The construction illustrated and described permits the weight of the derrick frame to

be supported independently of the concrete mixer frame while at all times, when moving the apparatus, for example, maintaining the proper relation of the parts including the cable 37 so that the entire apparatus is a unit and can be moved about and operated as a unit.

What is claimed is:

1. The combination with a frame adapted to be moved from place to place, of a hopper supported thereby, means for lifting the hopper, an independently supported derrick frame connected with the hopper supporting frame, and means connected with the hopper and extending to the derrick frame and adapted to lift a receptacle, when the hopper falls, to load or charge the hopper.

2. The combination with a frame adapted to be moved from place to place, of a hopper supported thereby, means for lifting the hopper, an independently supported derrick frame movably connected with the hopper supporting frame by connections at right angles to each other, and means connected with the hopper and extending to the derrick frame and adapted to lift a receptacle, when the hopper falls, to load or charge the hopper.

3. The combination with a frame adapted to be moved from place to place, of a hopper supported thereby, means for lifting the hopper, an independently supported upright, longitudinal and transverse tie members movably connecting the upright with the hopper supporting frame, an adjustable brace for the upright, a boom connected with the upright, and means connecting the hopper and boom to lift a receptacle, when the hopper falls, to load or charge the hopper.

4. The combination with a concrete mixer provided with a hopper and means for lifting the same, of an independently supported derrick frame movably connected with the concrete mixer, means for bodily adjusting the derrick frame vertically, and means connected with the hopper and extending to the derrick frame and adapted to lift a receptacle, when the hopper falls, to load or charge the hopper.

In witness whereof I hereto affix my signature.

EDWARD G. CARR.