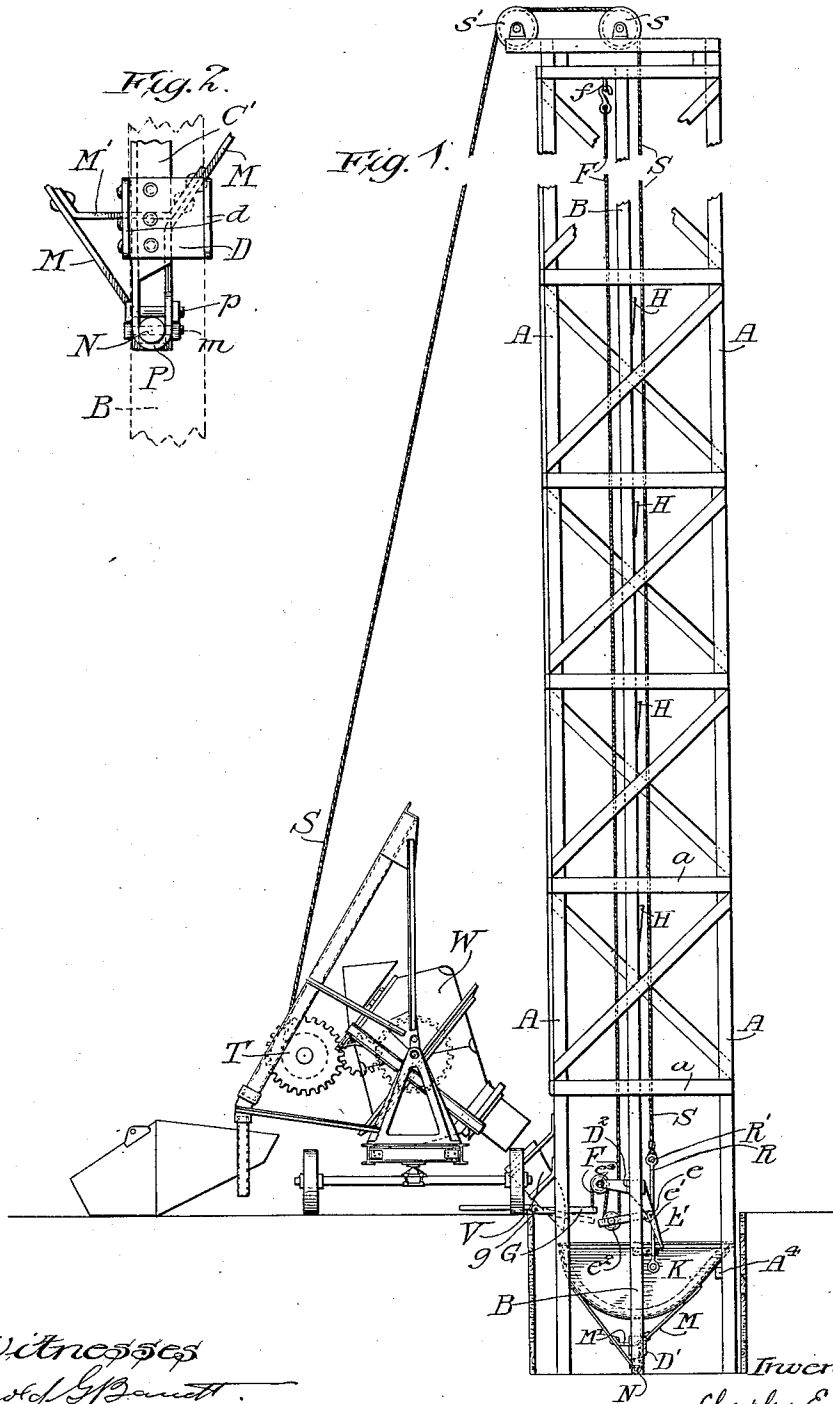


C. E. BATHRICK.
HOIST FOR CONCRETE AND LIKE MATERIAL.
APPLICATION FILED MAY 25, 1910.

1,009,038.

Patented Nov. 21, 1911.

3 SHEETS-SHEET 1.



Witnesses
Harold G. Barnett
Charles M. V. Whitehead

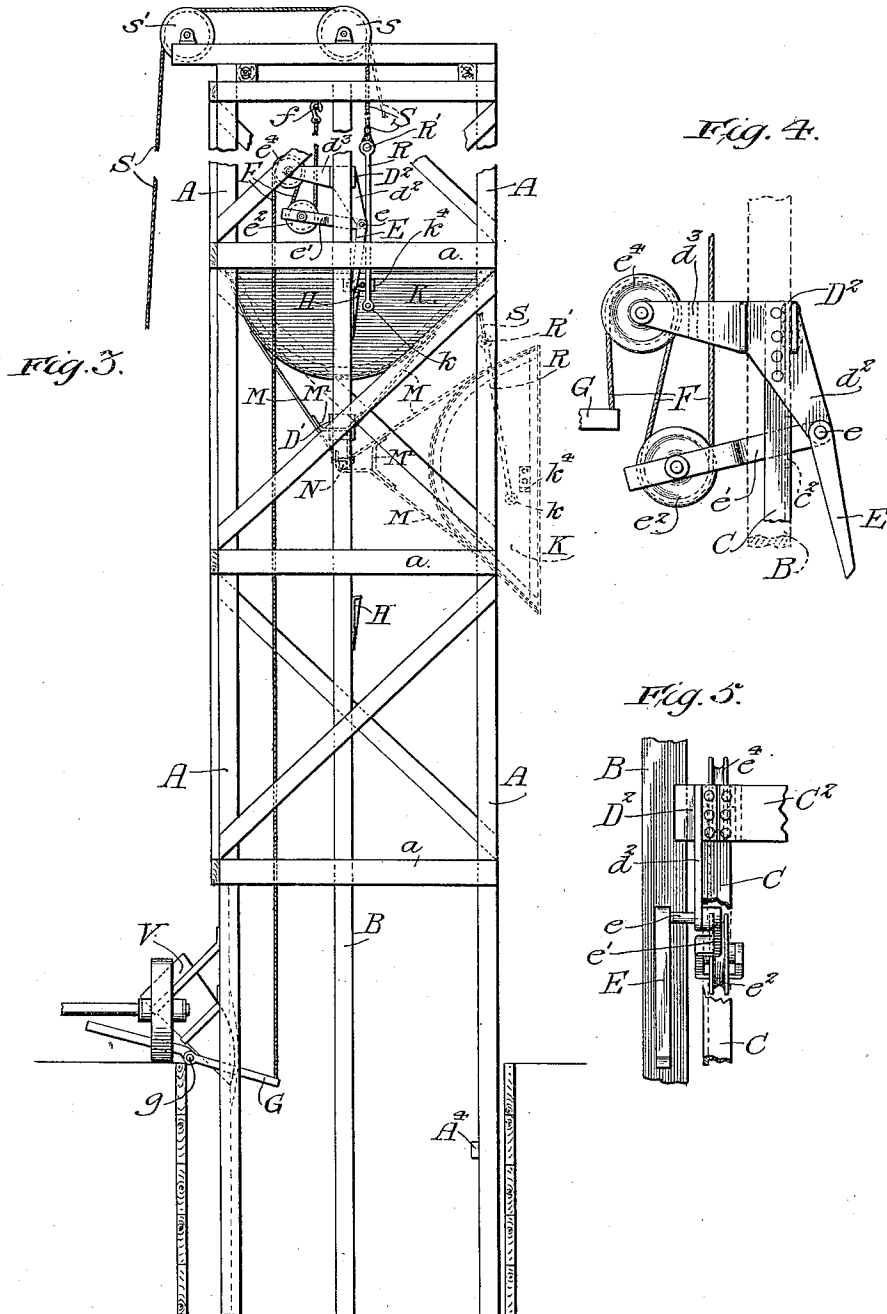
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3 SHEETS—SHEET 2.



Witnesses
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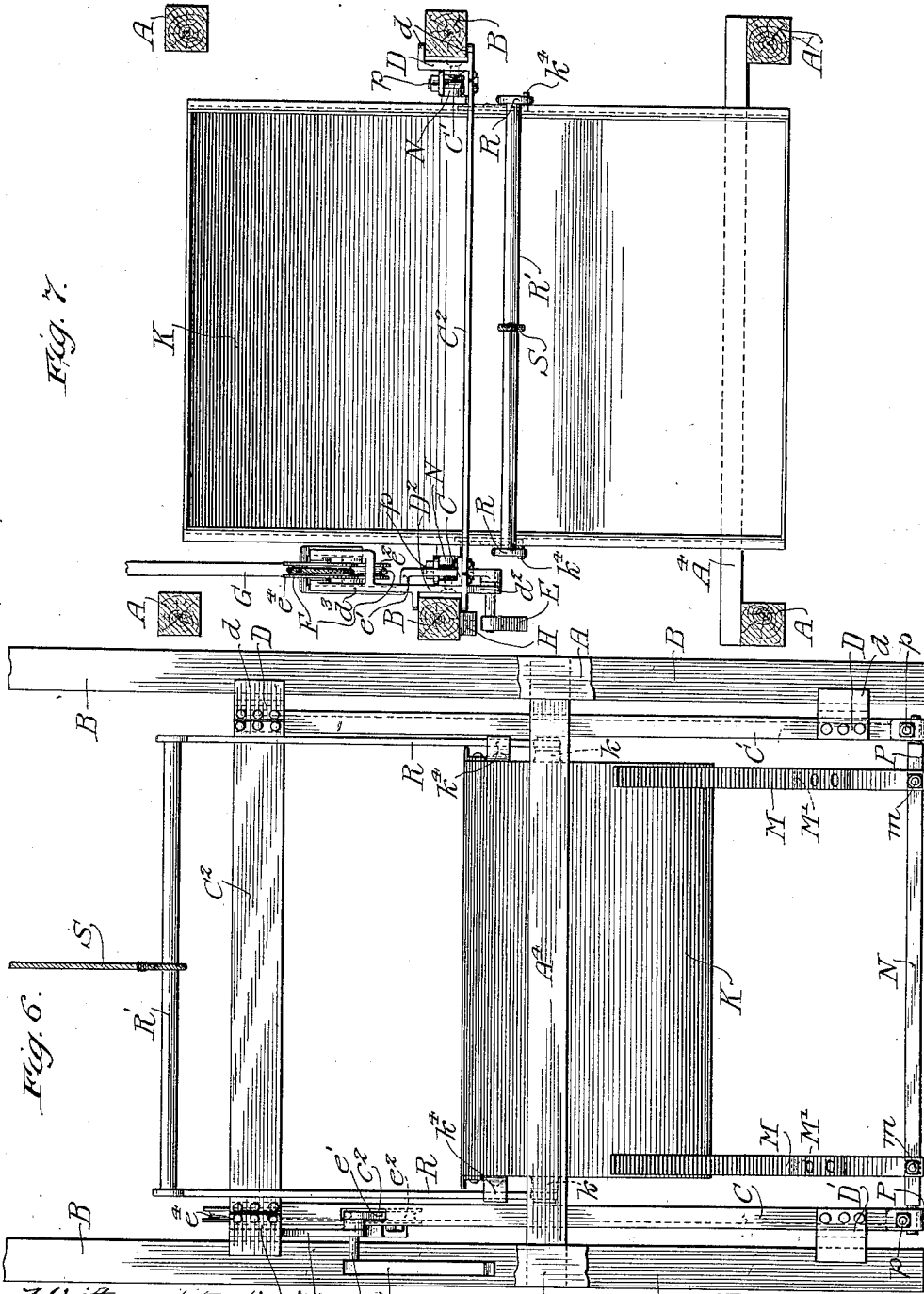
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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HOIST FOR CONCRETE AND LIKE MATERIAL.

1,009,038.

Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed May 25, 1910. Serial No. 563,240.

To all whom it may concern:

Be it known that I, CHARLES E. BATHRICK, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Hoists for Concrete and Like Material, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this application.

The present invention has for its object to provide a simple and effective apparatus, whereby concrete or like building material may be raised to the different floors of a building and there dumped or discharged into openings or windows at such points.

The invention consists in the features of novelty hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the claims at the end of the specification.

Figure 1 is a view in side elevation of an apparatus embodying my invention, a concrete mixing machine being shown adjacent thereto. Fig. 2 is a detail view showing the manner of connecting the bucket supports to the carrier. Fig. 3 is a view similar to Fig. 1, but on a somewhat larger scale and showing the bucket in elevated position. Figs. 4 and 5 are detail side and end views respectively, of means for dogging the downward movement of the bucket. Fig. 6 is an enlarged view of the lower portion of the frame, the bucket, the carrier and adjacent parts. Fig. 7 is a plan view of the parts illustrated in Fig. 6, certain parts being shown in cross-section.

My apparatus is shown as comprising a vertical frame that may be formed of the four corner posts A suitably united together and braced. Between the corner posts A at the side of the vertical frame are mounted the vertical guides B that are suitably connected to the cross bars a of the main frame, and along these guides B will travel suitable shoes connected to the carrier wherein the bucket or receptacle for containing the concrete will be mounted. As shown, the carrier consists of angle bars C and C' extending vertically, these carrier bars being connected at their upper ends by a transverse bar C². To the carrier bar C' are connected the upper and lower shoes D that are riveted to the bar C', these shoes

having flanges d that straddle the guide B. Similarly, the carrier bar C has riveted thereto the lower guide shoe D' and the upper guide shoe D². This upper guide shoe D² is more particularly shown in Figs. 4, 5 and 7 of the drawings, and it will be seen that this upper guide shoe D² is provided with a lower arm d^2 and with an upper arm d^3 , these arms being preferably cast integral with the guide shoe D². Through the lower arm d^2 passes a short shaft e to one end of which is fixed a dog E and to the opposite end of which is fixed an arm e' wherein is journaled a sheave e^2 . In the upper arm d^3 , which has a yoke-shaped portion, is journaled the sheave e^4 , and over these sheaves e^2 and e^4 is trained a dumping rope F. The upper end of this rope F is fastened as at f to the top of the vertical frame while the lower end of the rope is fastened to the inner end of a lever G that is pivoted as at g on a suitable support adjacent the base of the vertical frame. By reference to Fig. 6 of the drawings, it will be seen that the arm e' that carries the sheave e^2 passes through a slot e^2 in the carrier bar C near its upper end.

Along one of the guides B at points corresponding to the different floors of the building will be fixed suitable stops H and with these stops the dog E will cooperate in manner to be presently set forth.

The bucket K that receives the concrete or like material is shown mounted upon suitable supports M attached to the under side thereof. By reference more particularly to Figs. 1, 2, 3 and 6 of the drawings, it will be seen that these supports M comprise strap irons, the upper ends of which are fixed to the under side of the bucket K, and each of the supports M extends down and around a rock shaft N to which each support M is secured by a through-bolt m . A brace iron M' (see Fig. 2) extends between the arms of each of the supports M and is securely riveted thereto. The ends of the rock shaft N are journaled in stirrups P at the lower ends of each of the carrier bars C and C'. Preferably, each of these stirrups P is formed from one of the webs or plates of the corresponding carrier bar C and C' which is bent around as shown in Fig. 2, and a through-bolt p passes through each stirrup P above the rock shaft N to hold the rock shaft in position.

The bucket K has short trunnions $\frac{1}{2}$ projecting from the ends thereof to which are pivotally connected the lower ends of the links R, the upper ends of these links being united by a cross bar R' to which is attached one end of the main hoisting rope S. The opposite end of the hoisting rope S is wound upon a suitable winding drum T carried by the frame of the mixing machine which is shown located adjacent on the base of the apparatus. In order that the concrete or like material may be delivered into the bucket K when the latter is in its lowermost position, as illustrated in Fig. 1, the vertical frame is shown as set within a pit or depression somewhat below the level on which the mixing machine is sustained, or, if preferred, the mixing machine may be supported on a suitable structure that will elevate it at proper distance to enable it to deliver the concrete into the bucket K. The mixing machine is shown as comprising a mixing chamber W wherein the concrete or like material will be mixed and this mixing chamber is arranged to be tilted so as to dump its contents through a chute V into the bucket or receptacle K, when the latter is in position at the base of the vertical frame, as shown in Fig. 1 of the drawings. The hoisting rope S is trained over suitable sheaves s and s' mounted upon the top of the vertical frame as clearly shown in Figs. 1, 3 and 7 of the drawings. From the sides of the bucket K project the arms k^4 adapted to contact with the rods R and thus limit the forward tilting of the bucket, and adjacent the base of the vertical frame there is placed a transverse bar A^4 which will prevent the tipping of the bucket while the concrete is being delivered thereto.

From the foregoing description, the operation of the apparatus will be seen to be as follows: Assuming the bucket K to be in the position shown in Fig. 1 of the drawings, concrete will be dumped from the mixing chamber W through the chute V into the bucket which is open at its top. At such time the dog E, the arm and shaft e' , e^2 , and the lever G will be in the idle position shown. After the bucket K has been filled with concrete, the hoisting rope S will be wound upon the drum T and the bucket K will be raised to a point opposite the floor of the building into which the concrete is to be delivered. Thus, in Fig. 3 the bucket K is shown as having been raised to a point slightly above the third floor of the building and by the elevation of the outer end of the lever G, the dumping rope F has been caused to raise the sheave e^2 and arm e' , so as to rock the dog E to a point above the corresponding stop H. If now the rope S be slackened, the bucket will turn from the position shown by full lines in Fig. 3, to the position shown in dotted lines in Fig.

3, so as to discharge its contents into a chute (not shown) or on to a scaffold opposite the third floor of the building. When the hoisting rope is thus slackened to permit the bucket K to turn from the position shown by full lines in Fig. 3, to the position shown in dotted lines in Fig. 3, the downward movement of the carrier will be prevented by the engagement of the dog E with the stop H. The rock shaft N that pivotally supports the bucket K is in such position that the weight of the bucket and its contents tends to tip the bucket toward the discharging position. Inasmuch as the rods R are connected nearer the discharge end of the bucket, the strain of the hoisting rope will prevent the tipping of the bucket until such rope is slackened. After concrete has been discharged from the bucket K, the hoisting rope S will be rewound sufficiently to restore the bucket K to normal position and the rope S will then be unwound to permit the carrier and bucket to descend to the bottom of the vertical frame in order to receive a fresh charge of concrete, it being understood, of course, that before the descent of the bucket, the lever G will be shifted to the position shown in Fig. 1, in order to throw the dog out of the path of the stops H. It will be understood, of course, that the precise details set out above may be varied without departure from the scope of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. An apparatus of the character described comprising a frame having vertical guides, a carrier provided with shoes adapted to slide upon said guides, means for raising said carrier, a bucket pivoted in said carrier, one or more stops for checking the downward movement of the carrier, a movable dog mounted upon said carrier and adapted to engage said stops and arrest the movement of the carrier while permitting the bucket to turn about its pivot, and means for shifting said dog when at the desired stop.

2. An apparatus of the character described comprising a frame having vertical guides, a carrier provided with shoes to slide upon said guides, a bucket pivoted in said carrier, a hoisting rope connected to said bucket and serving to hold said bucket in normally upright position, one or more stops for checking the downward movement of the carrier, a movable dog adapted to engage said stops and arrest the movement of the carrier while permitting the bucket to turn about its pivot, and a rope for actuating said dog.

3. An apparatus of the character described, comprising a frame having vertical guides, a carrier provided with shoes

adapted to slide upon said guides, means for raising said carrier, a bucket, pivoted supports beneath said bucket for holding it in said carrier, one or more stops for checking the downward movement of the carrier, a movable dog adapted to engage said stops and arrest the movement of the carrier while permitting the bucket to turn about its pivot, and means for shifting said dog.

4. An apparatus of the character described comprising a frame having vertical guides, a carrier provided with shoes adapted to slide upon said guides, means for raising said carrier, a bucket, a rock shaft pivoted in said carrier and located beneath said bucket, supports extending between said rock shaft and said bucket, one or more stops for checking the downward movement of said carrier, and means supported to said carrier for engaging said stops to arrest the movement of the carrier while permitting the bucket to turn about its pivot.

5. An apparatus of the character described comprising a frame having vertical guides, a carrier provided with shoes adapted to slide upon said guides, means for raising said carrier, a bucket pivoted in said carrier, one or more stops for checking the downward movement of the carrier, a movable dog adapted to engage said stops and arrest the movement of the carrier while

permitting the bucket to turn about its pivot, a rocking arm for shifting said dog, and a rope for actuating said rocking arm.

6. An apparatus of the character described comprising a frame having vertical guides, a carrier provided with shoes adapted to slide upon said guides, means for raising said carrier, a bucket pivoted in said carrier, one or more stops for checking the downward movement of the carrier, a movable dog adapted to engage said stops, a pivoted arm connected to said dog, a sheave carried by said pivoted arm, and a rope passing over said sheave for actuating said dog.

7. An apparatus of the character described comprising a frame having vertical guides, a carrier comprising side bars provided with shoes to slide upon said guides, said side bars having stirrups or bearings at their lower ends, a bucket extending between said side bars of the carrier and pivoted in said stirrups or bearings, a hoisting rope connected to said bucket and serving to hold said bucket in normally upright position, and means for checking the downward movement of the carrier while permitting the bucket to turn about its pivot.

CHARLES E. BATHRICK.

Witnesses:

OTTILIE C. FREIBERG,
KATHARINE GERLACH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."