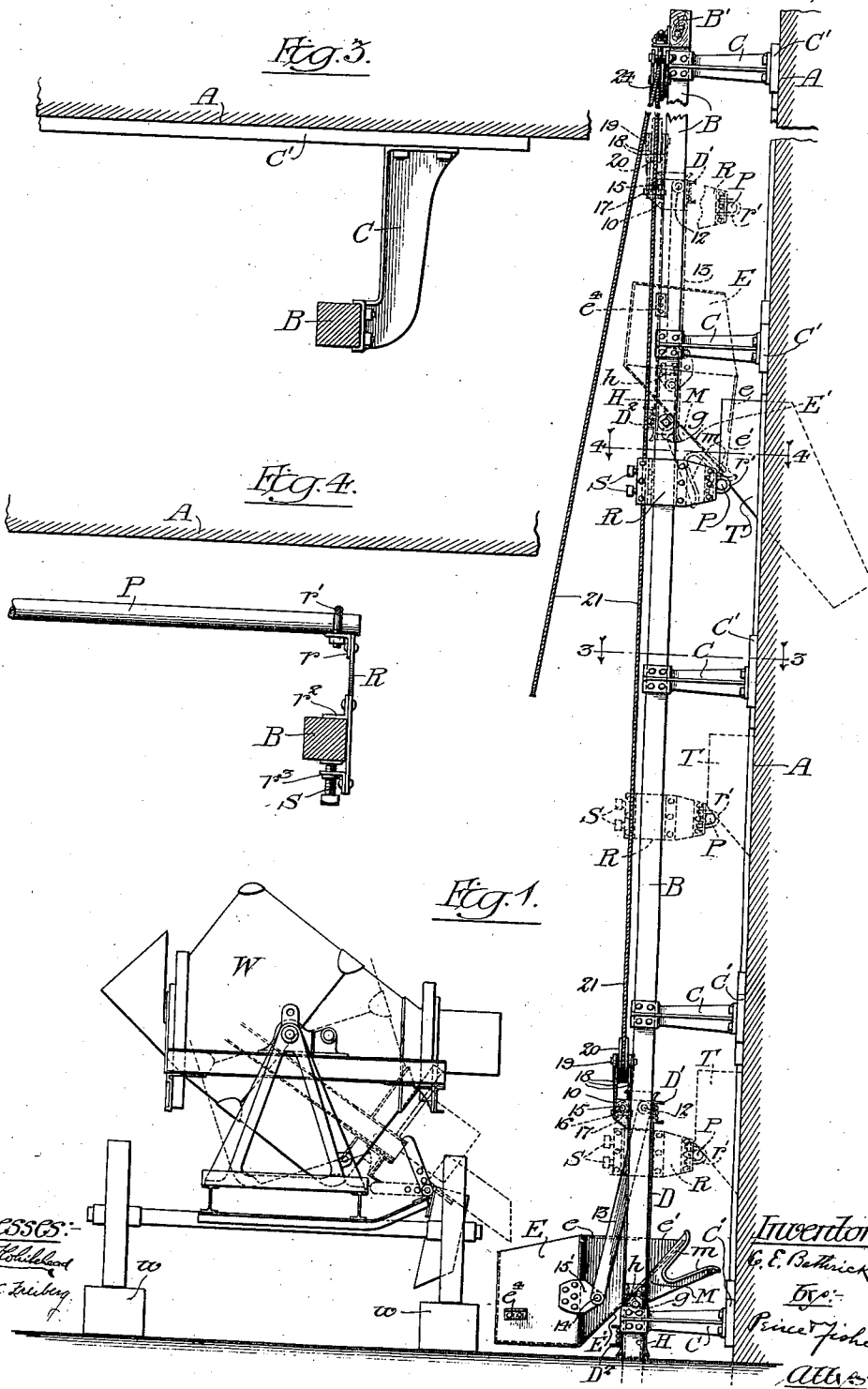


C. E. BATHRICK.
 HOIST FOR CONCRETE AND THE LIKE.
 APPLICATION FILED MAY 14, 1910.

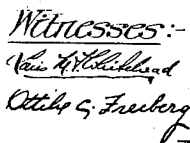
Patented Nov. 21, 1911.

3 SHEETS—SHEET 1.



1,009,037.

3 SHEETS—SHEET 2.



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3 SHEETS-SHEET 3.

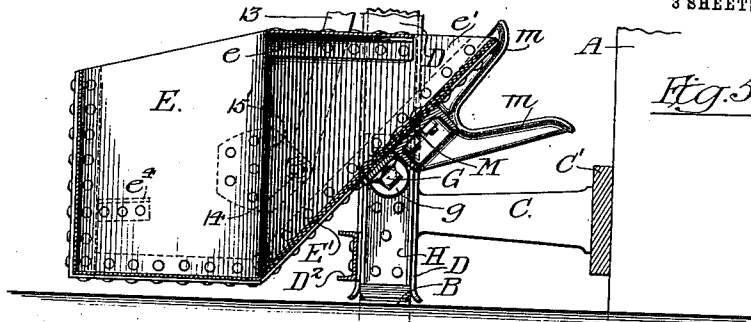


Fig. 5.

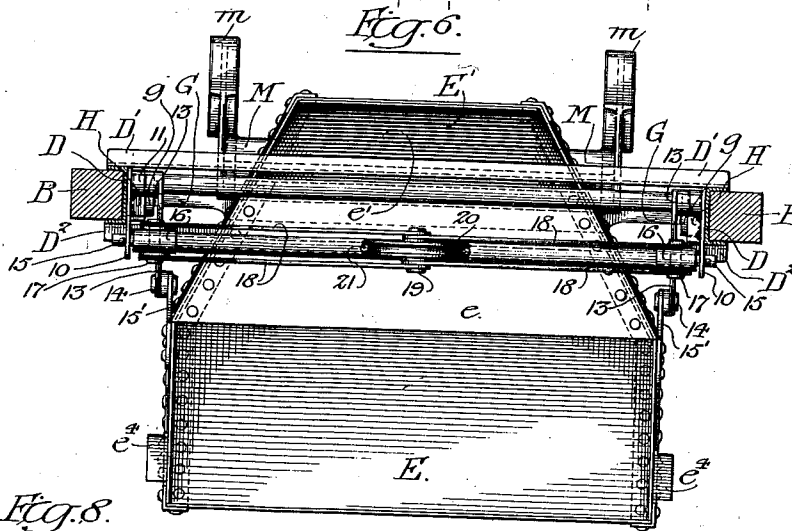


Fig. 6.

Fig. 8.

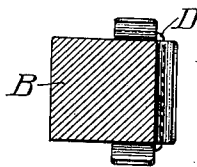
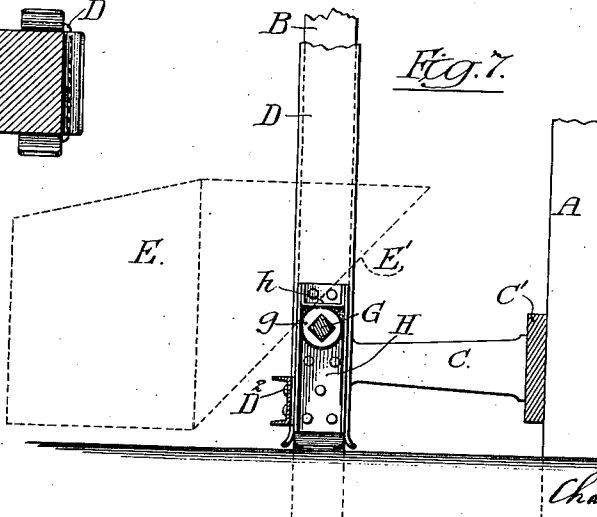


Fig. 7.



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UNITED STATES PATENT OFFICE.

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HOIST FOR CONCRETE AND THE LIKE.

1,009,037.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed May 14, 1910. Serial No. 561,456.

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 the Like, 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 while applicable for other purposes is primarily designed as a hoist, whereby concrete may be elevated to the different floors of buildings in the process of construction.

The object of the invention is to provide an apparatus by which the concrete, as it is received from the mixing machine, can be carried by a suitable bucket or receptacle to the required height, where it will be automatically tipped to discharge its contents at the particular floor where the material is to be used.

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

Figure 1 is a view in side elevation of an apparatus embodying my invention, the apparatus being shown as mounted against the wall of a building and adjacent a concrete mixing machine. Fig. 2 is a front view of my improved apparatus. Fig. 3 is a detail view in horizontal section on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail in cross-section on line 4—4 of Fig. 1. Fig. 5 is a detail in vertical section on line 5—5 of Fig. 2. Fig. 6 is a view in cross-section on line 6—6 of Fig. 2. Fig. 7 is a view in vertical section on line 7—7 of Fig. 2. Fig. 8 is a view in cross-section on line 8—8 in Fig. 2.

A designates the wall of a building against which my improved apparatus is erected. As shown, the main frame work of the apparatus comprises two vertical guide beams or tracks B that are connected together at their upper ends by a cross-beam B'. The beams B are securely held at proper distance with respect to the wall A of the building by means of the brackets C (see Fig. 3), to which the beams B are bolted, the inner end of these brackets C being shown as bolted to transverse bars C'. Each of the beams B is engaged by one of the shoes D of the

carrier frame by means of which the bucket or receptacle will be raised and lowered, the carrier frame being adapted to slide upon the vertical track beams B. The upper ends of the shoes D are shown as connected together by a channel beam D' that is bolted to the shoes at their inner sides, while the lower ends of the shoes are similarly connected by a channel beam D² at the front. To the upper ends of the shoes D and projecting forwardly therefrom are riveted the plates 10 from which project inwardly the chambered hubs or offsets 11 that receive the inner ends of the cross bar or rod 12 to which are connected the upper ends of the links 13 that extend downward and are pivotally connected, as at 14, to plates or ears 15' riveted to the sides of the bucket E. The rod 12 may be encircled by a tubular spacing bar or pipe extending between the upper ends of the links 13 to hold the parts accurately positioned, although, this is not essential.

In the outer ends of the plates or arms 10 are journaled the ends of the rod or shaft 15, around which pass inverted U-shaped straps 16, these straps being preferably held at proper distances apart by a separating tube or pipe that sets over the rod 15 between the U-shaped straps 16 (see Fig. 6). Through the lower ends of each of the straps 16 passes a bolt 17, and each of these bolts 17 has connected thereto the lower ends of two bars 18, the upper ends of which bars are united by the bolt axle 19 of a sheave 20. Around sheave 20 crosses a hoisting rope 21, one end of which is shown as fastened to a plate 22, attached to the top cross-beam B', while the other end of the rope passes around the sheaves 23 and 24 and then down to a position where it may be connected to a suitable source of power.

From the construction of parts thus far defined, it will be seen that when power is exerted upon rope 21 in the direction of the arrow in Fig. 2, the carrier frame will be raised, its shoes D moving along the vertical guide beams or tracks B.

The bucket or receptacle E for the concrete or like material is shown as having a main portion of general rectangular shape, its top being open to receive the material, and from the main body of the bucket projects the inclined discharge spout E'. Preferably, a cross-plate *e* extends from side to

side of the discharge spout leaving sufficient opening as at e' for the easy discharge of the material. Across the under face of the discharge spout E' extends a bar G , the flat portion of which is riveted to the inclined under face of the discharge spout E' , and the squared ends of this bar G are formed with cylindrical studs on which are journaled the rollers g . These rollers g are mounted to travel in the short U-shaped channels H that are riveted to the inner faces of the shoes D adjacent their lower ends (see Figs. 5 and 7), and stops h at the upper ends of the short channels H limit the upward movement of the rollers g . To the under side of the spout portion E' of the bucket E is also bolted a transverse bar or casting M , having projecting yoke-shaped or forked parts m at its outer ends, and, preferably, formed integral with the bar M . The purpose of these yoke-shaped or forked parts or projections m is to cooperate with a suitable stop located at any desired height at which the bucket is to be automatically dumped, as will next appear.

At any desired point along the vertical guide beams B are fixed brackets that carry the stop whereby the automatic dumping of the bucket E is effected. Preferably, this stop consists of a transverse bar P adapted to be engaged by the yoke-shaped parts or forks m of the bucket. As shown, each end of the stop bar P is connected to a bracket R that is provided with means whereby it may be adjustably secured at any desired point along the guide beams (see Fig. 4). Preferably, the bracket R may comprise a metal plate having at its inner end an angle bar r through which passes a U-shaped bolt r' that engages one end of the stop bar P , and having an angle bar r'' adapted to bear against one side of the guide beam B . A similar angle bar r''' that is riveted to the bracket R is formed with a threaded opening to receive clamping screws S which serve to securely hold the bracket R at any desired point upon the guide beam B .

In the drawings, several of the stop bars P and brackets are indicated in dotted lines to show how these parts may be successively attached opposite different floors of a building and one of the stop bars P is shown in full lines and at such point the bucket E will be automatically dumped. It will be understood that at the window or other opening of the floor at which the dumping of the bucket is effected, there will be provided a suitable chute T to receive the material discharged from the bucket and deliver it within the building. Each side of the bucket E is shown as provided with a stop e' projecting laterally therefrom (see Figs. 1, 2 and 4) a sufficient distance to engage the links 13 when the bucket is tilted

to discharge its contents and thus restrict the movement of the bucket. Adjacent and in front of my improved apparatus I have shown a concrete mixing machine W , the supporting wheels of which are mounted upon suitable beams or blocks w which raise the machine sufficiently high to enable the concrete to be dumped into the bucket E when the mixing chamber W is tilted to the position shown by dotted lines.

From the foregoing description the operation of my improved apparatus will be seen to be as follows, viz: When the parts are in the position shown in Fig. 1, the mixing chamber W will be tilted to the position shown by dotted lines and will discharge the concrete into the bucket or receptacle E after which the mixing chamber will be restored to its normal position. Power will then be applied to the hoisting rope 21 to raise the carrier frame and the bucket E . As the bucket E approaches the third floor of a building, its yoke-shaped or forked projections m will engage the stop bar P , and as the bucket continues its upper travel, it will be turned to the inverted position shown by dotted lines in Fig. 1, so that its contents will be discharged into the chute T . It will be understood that the lower arms of the yoke-shaped projections or forks p will first contact with the stop bar m and as the bucket continues to rise it will pivot about such stop bar, the rollers g moving downward in the channels H , while the links 13 approach the vertical position shown by dotted lines in the drawing. As the bucket is lowered, the upper arms of the yoke-shaped or forked projections connected thereto, by reason of their engagement with the stop bar P , will cause the bucket E to be restored to its normal horizontal position in readiness to receive a fresh charge of concrete.

While I have described the preferred embodiment of my invention it will be understood that the details above set forth may be varied without departure from the principle of the invention and that features of the invention may be employed without its adoption as an entirety.

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 vertical guide beams or tracks, a carrier frame arranged to travel along said guide beams or tracks, means for elevating said carrier frame, a bucket provided with trunnions mounted in said carrier frame and vertically shiftable thereon, and means for tipping said bucket and causing its trunnions to shift vertically in said carrier frame as the contents of the bucket are discharged.

2. An apparatus of the character de-

scribed comprising vertical guide beams or
tracks, a carrier frame arranged to travel
along said beams or tracks, means for rais-
ing and lowering said carrier frame, a
5 bucket provided with trunnions mounted in
said carrier frame, links attached to the
bucket at one side of said guide beams and
means at the other side of said guide beams
for tipping said bucket and causing its trun-
10 nions to shift bodily in said carrier frame
as the contents of the bucket are discharged.

3. An apparatus of the character de-
scribed comprising vertical guide beams or
tracks, a carrier frame arranged to travel

along said beams or tracks, means for rais- 15
ing and lowering said carrier frame, a
bucket pivotally mounted in said carrier
frame and having trunnions arranged to
move vertically, links attached to said bucket
at one side of said beams in said frame and 20
a part projecting from said bucket at the
other side of said beams and a stop with
which said part will contact when the bucket
is to be tipped.

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