

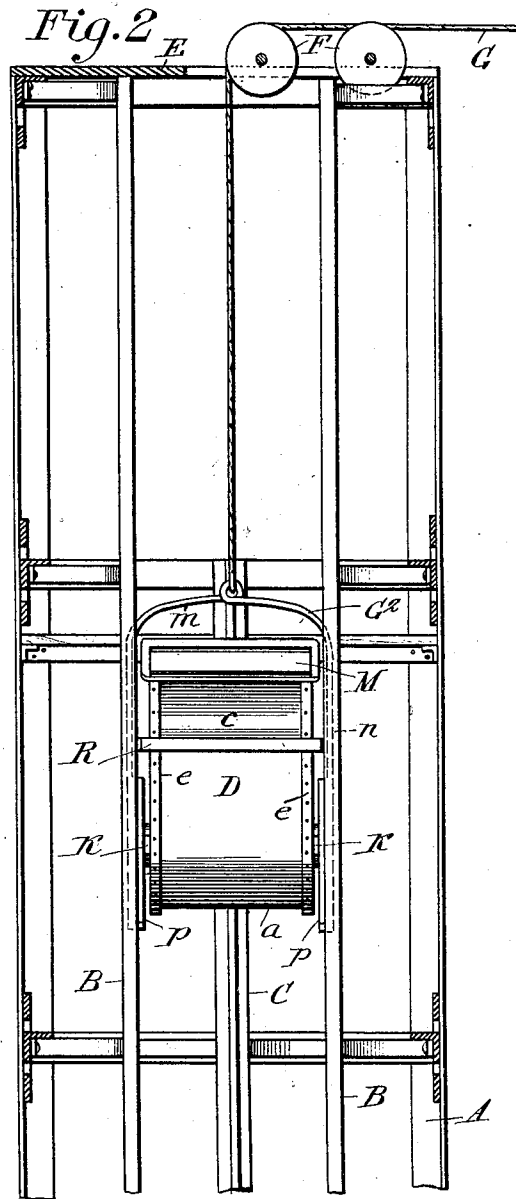
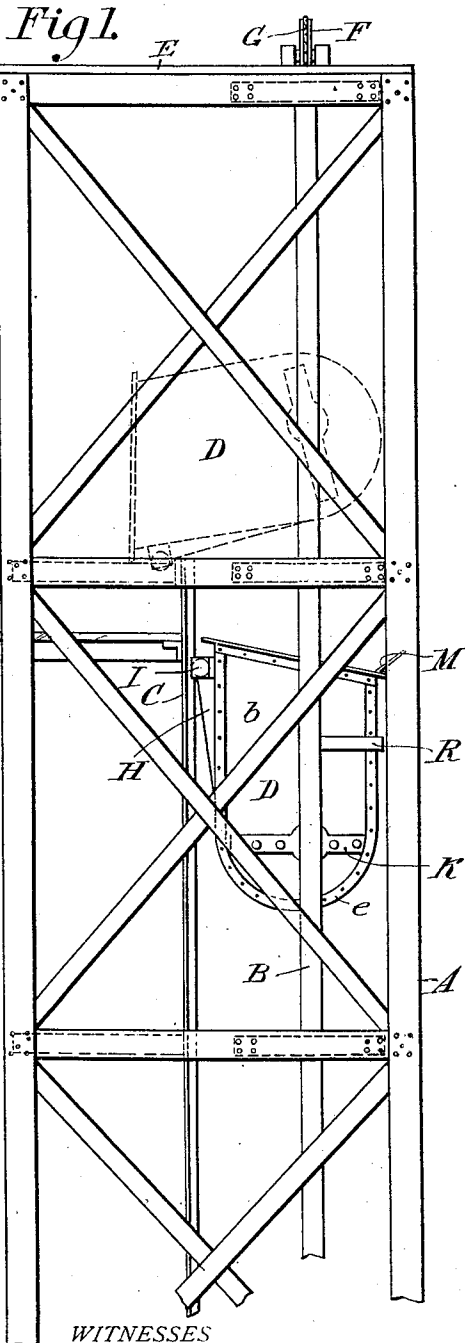
L. CALLAHAN.
SELF DUMPING HOIST.

APPLICATION FILED MAR. 8, 1911.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.

1,000,234.



WITNESSES

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Fig. 3.

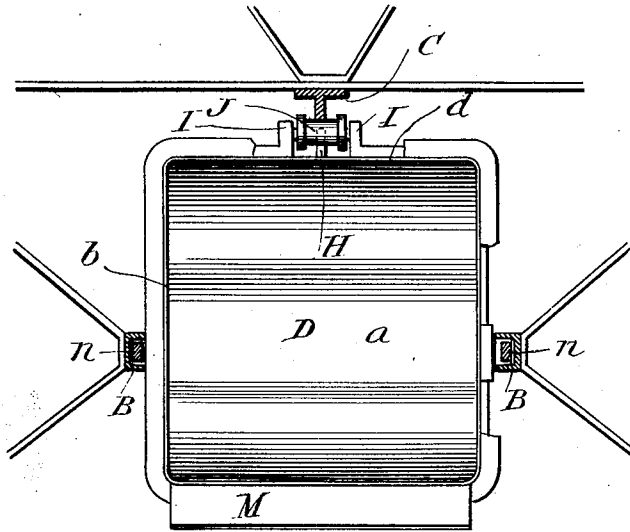


Fig. 4.

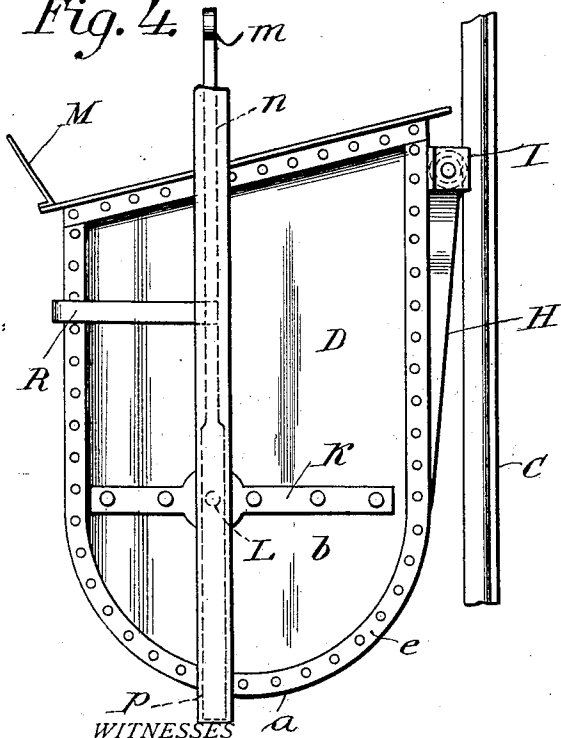
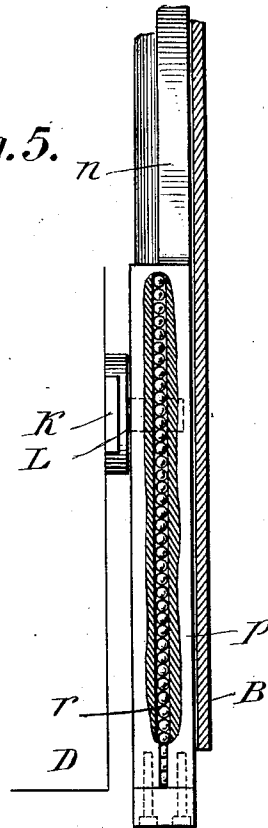


Fig. 5.



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UNITED STATES PATENT OFFICE.

LEE CALLAHAN, OF LOS ANGELES, CALIFORNIA.

SELF-DUMPING HOIST.

1,000,234.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed March 8, 1911. Serial No. 613,052.

To all whom it may concern:

Be it known that I, LEE CALLAHAN, citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Self-Dumping Hoists, of which the following is a specification.

My present invention has to do with self-dumping hoists; and it consists in the simple, reliable and durable construction hereinafter described and particularly pointed out in the claims appended.

In the drawings accompanying and forming part of this specification: Figure 1 is a side elevation illustrating the arrangement of my improvement in a tower and also illustrating by dotted lines the manner in which the skep or bucket dumps itself when it reaches the upper end of its traverse. Fig. 2 is a vertical section of the same taken in a plane in rear of the skep. Fig. 3 is a horizontal section taken in a plane above the skep and showing the same as it appears when in upright position. Fig. 4 is an enlarged detail side elevation showing the arrangement of the skep and the frame by which the same is carried, relative to the channel guides and the upright sustaining rail. Fig. 5 is an enlarged detail view, partly in elevation and partly in section, showing the manner in which the anti-friction balls are arranged in the runners on the side bars of the skep frame.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is a tower of the type that is erected adjacent a building to be formed of poured concrete.

B B are upright channel guides which are preferably, though not necessarily, fixed in suitable manner in the tower, and C is an upright skep-sustaining rail which is also preferably, though not necessarily, fixed in the tower, and is arranged in front of the channel guides after the manner best shown in Figs. 3 and 4. The said sustaining rail is preferably of T-form in cross-section, Fig. 3, and has its upper end arranged a sufficient distance below the upper ends of the channel guides C, as shown in Figs. 1 and 2.

D is the skep or bucket of the hoist.

E is a beam mounted on the tower and

bearing sheaves F. G is a hoisting cable passed over the said sheaves and designed to be connected at one end to hoisting means (not shown), and G² is the skep-carrying frame connected to the opposite end of the said cable, as shown in Fig. 2.

The skep or bucket D comprises a concavo-convex bottom *a*, vertical and parallel side walls *b*, a vertical back wall *c* disposed at right angles to the side walls, a vertical front wall *d* also disposed at right angles to the side walls, and continuous angle-iron straps *e*, one at each side of the bucket, straddling and riveted to the edge portions of the side walls *b* and the adjacent edge portions of the bottom, back and front walls. From this it follows that the skep is possessed of great stiffness and strength and therefore is not liable to be bulged by a load of concrete therein or be injured in the event of a fall. On its front side and in the vertical center thereof the skep is provided with a downwardly tapered shoe H, and adjacent the upper and larger end of the shoe bearings I are provided between which a circumferentially-grooved roller J is mounted, this roller being arranged immediately above the shoe H and being designed to bear against and travel on the sustaining rail incidental to the downward and upward traverses of the skep. At its sides the skep is provided with fixed plates K that carry trunnions L, and at the rear side of its upper end the skep is preferably, though not necessarily, equipped with a guard-flange M, designed to prevent upward splashing of the concrete when the skep is dumped. The trunnions L are located considerably below the horizontal center of the skep and slightly in rear of the vertical center thereof, Figs. 1 and 4, and hence it will be manifest that when on the upward movement of the skep the roller J overruns or passes beyond the upper end of the sustaining rail C, the skep will of itself and by reason of gravity commence to swing to the dumping position shown by dotted lines in Fig. 1. Attention is also directed here to the fact that immediately after the roller J passes out of engagement with the upper end of the rail C, the tapered shoe H will bear and slide on the said end, and by so doing will render the tilting of the skep gradual and smooth and at the same time will preclude injury to the front wall *d* of the skep. Again it

will be observed that when the skep is moved downward from the dumped position shown by dotted lines in Fig. 1, the shoe H will bear on the upper end of the rail C and gradually "right" the same until the roller J comes into engagement with the thread of rail C and the skep is in upright position.

The frame G^2 by which the skep D is carried has at its upper end a bail m to the middle of which one end of the cable G is connected, and from the ends of the said bail, side bars n depend, which side bars are arranged in the channel guides B, as best shown in Figs. 2 and 3. The lower portions of the side bars n of frame G^2 are shaped to form runners p , and these runners extend below the bottom of the skep D as shown for an important purpose hereinafter set forth. In their opposite sides the said runners p are preferably, though not necessarily, provided with vertical series of anti-friction balls r which are housed in the runners and project slightly therefrom, and are designed, by bearing against the side walls of the channel guides B, to ease the movements of the runners and the frame G^2 as a whole.

In addition to the elements named, the frame G^2 comprises a combined back brace and stop R. This latter is bail-shaped and connected at its ends in fixed manner to the side bars n , and it serves to brace the said side bars and thereby lend increased strength to the frame G^2 , and at the same time serves to limit the forward movement of the skep D when the latter is dumped, and backward movement of said skep when the same is "righted."

By reason of the runners p of frame G^2 extending below the skep D, as before described, it will be readily understood that in the event of the cable G breaking when the full skep is at a considerable height, little or no damage to the skep will result from the fall, inasmuch as the ends of the strong steel frame G^2 will bring up against the bottom of the tower and thereby protect the skep, while the combined brace and stop R will hold the skep between it and the rail C and prevent lateral displacement of the skep from the frame and guide means. Also because of this a fall of the frame G^2 and skep or the sudden bringing up of the frame at the bottom of the tower will not be attended by injury to any part of the apparatus or danger to workmen standing in or near the tower. The stiffness and strength of the skep hereinbefore referred to is further materially advantageous inasmuch as it precludes the possibility of a load of concrete or the like bulging the side walls of the skep and thereby binding the frame sides against the channel guides and causing undue friction.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In a self-dumping hoist, the combination of upright channel guides; an upright sustaining-rail arranged in front of the space between said guides and having its upper end disposed below the upper ends of the guides; a frame comprising a bail for the connection of a hoisting cable, side bars and runners thereon disposed in the channel guides, and a bail-shaped back brace and stop connected at its ends to the side bars; vertical series of anti-friction balls housed in opposite sides of the runners and projecting beyond said sides to engage the sides of the channel guides; and a skep arranged entirely above the lower portion of the frame and having lateral trunnions journaled in the runners of the frame and arranged below its horizontal center and in rear of its vertical center and also having a roller on its front side to engage the sustaining rail, and a downwardly and rearwardly tapered shoe arranged immediately below said roller.

2. In a self-dumping hoist, the combination of upright guides, an upright sustaining-rail arranged in front of the space between the guides and terminating below the upper ends thereof, a vertically movable frame arranged between the guides and having side bars and a bail-shaped back brace and stop, and a skep arranged entirely above the lower portion of the frame and pivoted, at a point below its horizontal center and in rear of its vertical center, in the side bars of the frame and having a roller on its front to engage the sustaining rail and also having a downwardly and rearwardly tapered shoe on its front immediately below said roller.

3. In a self-dumping hoist, the combination of upright guides, an upright sustaining-rail arranged in front of the space between the guides and terminating below the upper ends of the same, a vertically movable skep adapted to be sustained in upright position by said rail, and a vertically-movable frame carrying the skep and in which the skep is pivoted at a point below its horizontal center and in rear of its vertical center; said vertically-movable frame being arranged between the said guides and having a portion extending downward beyond the bottom of the skep and also having a bail-shaped back brace and stop arranged in rear of the upper portion of the skep.

4. In a self-dumping hoist, the combination of upright guides, an upright sustaining-rail arranged in front of the space between the guides and terminating below the upper ends of the same, a vertically movable skep adapted to be sustained in upright position by said rail, and a vertically-movable frame carrying the skep and in which the

skep is pivoted at a point below its horizontal center and in rear of its vertical center; said vertically-movable frame being arranged between the said guides and having
5 a portion extending downward beyond the bottom of the skep.

5. In a self-dumping hoist, the combination of upright guides, an upright sustaining rail arranged in front of the space be-
10 tween the guides and terminating below the upper ends of the same, a vertically movable skep having on its front a roller and immediately below said roller a downwardly

and rearwardly tapered shoe, both to engage the sustaining rail, and a frame in which
15 the skep is pivoted and adapted to dump itself, said frame being movable vertically between the said guides.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit-
20 nesses.

LEE CALLAHAN.

Witnesses:

P. S. LUDWICK,
R. T. COURTRIGHT.

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