Feb. 11, 1930. W. L. HANCOCK 1,746,649

BUCKET ELEVATOR

Filed Nov. 12, 1928 2 Sheets-Sheet 1

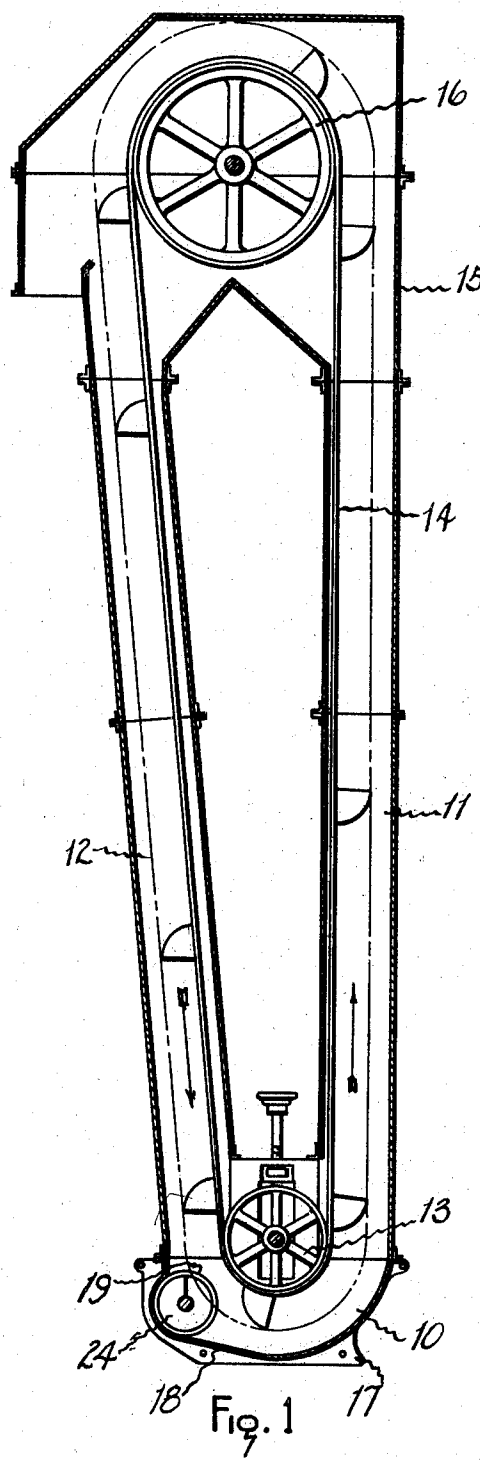


Fig. 1

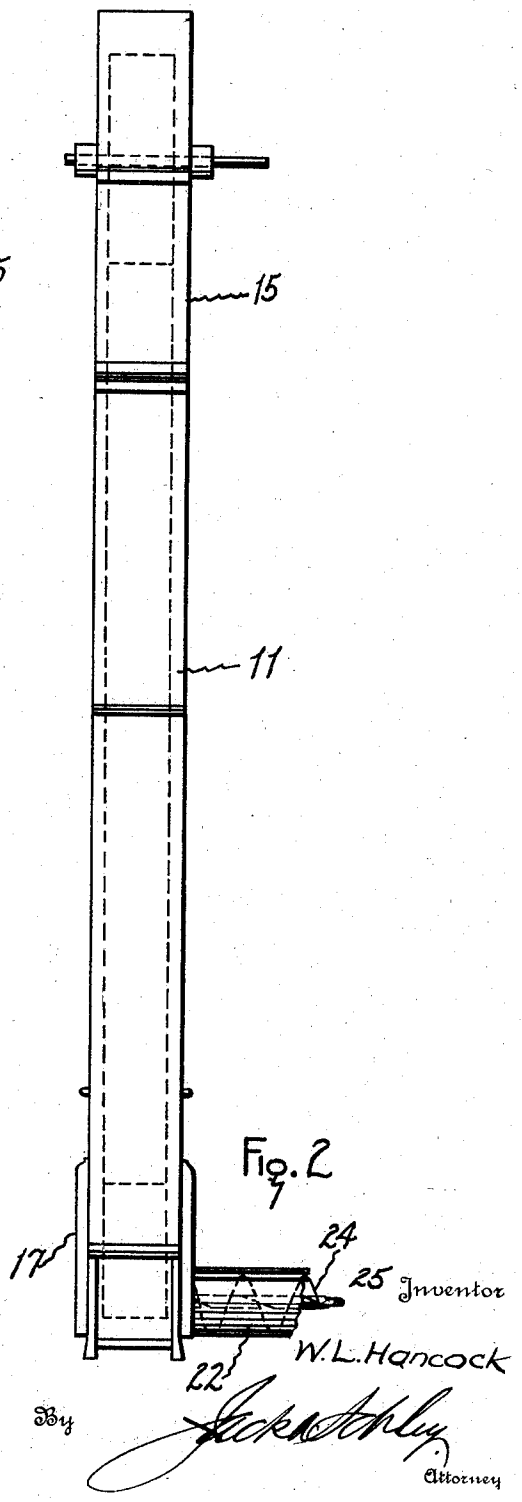


Fig. 2

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BUCKET ELEVATOR

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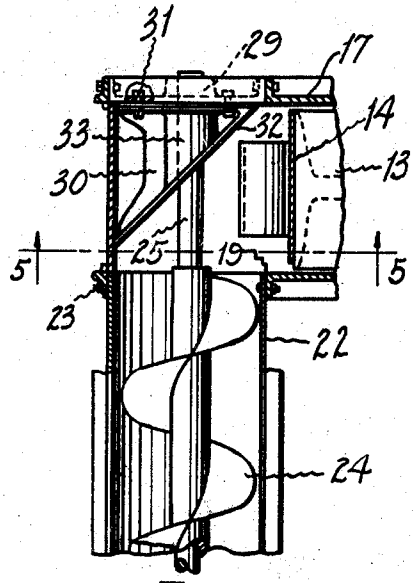


Fig. 3

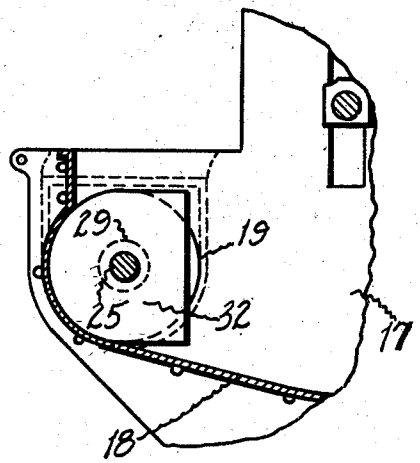


Fig. 5

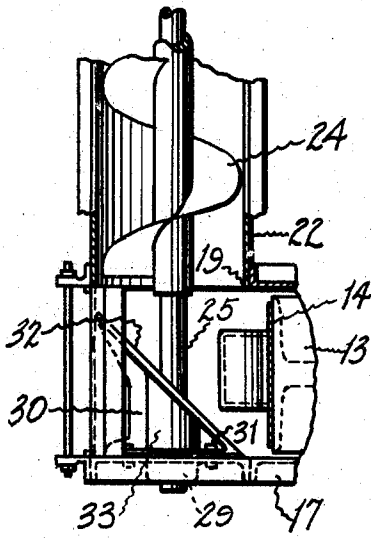


Fig. 4

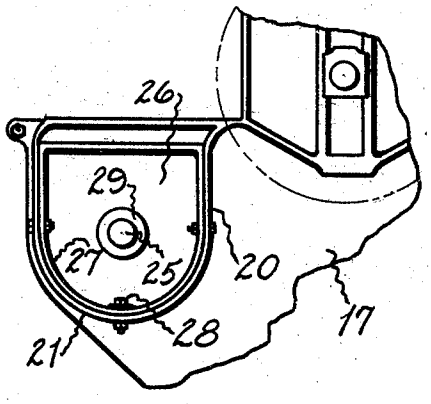


Fig. 6

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UNITED STATES PATENT OFFICE

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BUCKET ELEVATOR

Application filed November 12, 1928. Serial No. 318,682.

This invention relates to new and useful improvements in bucket elevators.

One object of the invention is to provide an elevator boot in which the material to be elevated is fed into the side of the boot instead of being dropped into the top thereof, thus making for a more compact arrangement and permitting the material to be discharged from a conveyor at right-angles to the boot.

Another object of the invention is to provide an elevator boot with side openings whereby material may be fed into either side, together with a closure for the side opening not in use.

A still further object of the invention is to combine with the closure plate for the side not in use, an end bearing for the screw conveyor which delivers the material to the boot.

An important object of the invention is to provide a deflector detachably connected with the closure plate so as to be properly located in the boot to deflect the material from the conveyor into the path of the buckets.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein:

Fig. 1 is a side elevation of a bucket elevator constructed in accordance with the invention,

Fig. 2 is a front elevation of the same showing a portion of the screw conveyor attached to one side thereof,

Fig. 3 is a cross-sectional view of a portion of the boot and conveyor showing the latter connected to the right hand side of the boot,

Fig. 4 is a similar view showing the conveyor connected to the left hand side of the boot,

Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 3, and

Fig. 6 is a side elevation of the parts shown in Fig. 4.

In the drawings the numeral 10 designates an elevator boot which is attached to an elevating leg 11 and a return leg 12 in any suitable manner. The usual pulley 13 is mounted in the boot and the lower end of a bucket elevator 14 passes around this pulley. The ordinary head 15 at the upper ends of the legs contains a pulley 16 around which the elevator passes. The invention has to do particularly with the boot and, therefore, the remainder of the elevator will not be described in detail.

The boot includes side plates 17 and a metal bottom 18 suitably clamped between said side plates. Each side plate has an opening 19 which is surrounded by a flange 20 on the outside of the plate having a semi-circular bottom 21. The trough 22 of a screw conveyor may be inserted in either opening and secured flush with the inner side of the plate by bolts 23 passing through the flange 20. In Fig. 3 the conveyor is connected to the right hand side and in Fig. 4 the conveyor is connected to the left hand side.

A conveyor screw 24 has a shaft 25 which extends transversely of the boot. When the trough 22 is connected in the opening 19 of one side plate 17, a closure plate or cap 26 is inserted in the other opening 19, as is best shown in Figs. 3 and 6. The cap has a marginal flange 27 fitting snugly within the flange 20 and its bottom 21, as is shown in Fig. 6. The flanges are fastened together by bolts 28. The cap is provided with a bearing box 29 receiving the shaft 25, whereby the screw 24 is journaled.

In order to deflect the material from the conveyor toward the buckets of the elevator 14, a deflector 30 is removably secured to the inner face of the cap by bolts 31. The deflector has a flat face 32 extending diagonally of the shaft 25 and acting to guide the inflowing material to the buckets. The deflector is also provided with a hub 33 receiving the shaft 25 and co-acting with the box 29 to form an elongated bearing.

It will be seen that the conveyor trough 22 may be connected to either side plate and the cap 26 attached to the other side plate. A few bolts and an easy operation make the parts readily interchangeable. The side opening in the boot permits the elevator to be

installed close to one side or end of a machine or other device in which the trough 22 is mounted.

Various changes in the size and shape of the different parts, as well as modifications and alterations, may be made within the scope of the appended claims.

What I claim, is:

1. In an elevator, a boot having openings in each side, a conveyor connected in one of said side openings, and a cap removably secured in the other side opening, both of said openings being beyond the periphery of the elevator pulley.

2. In an elevator, a boot having openings in each side, a conveyor connected in one of said side openings and interchangeable with the other opening, a cap removably secured in the other side opening and interchangeable with the conveyor opening, and a deflector reversibly mounted in the boot in the path of the discharge of the conveyor.

3. In an elevator, a boot having opposite openings in each side, a cap fitting in either opening, means for securing the cap in either side opening, the other opening adapted to receive the end of a conveyor trough, the cap having a bearing box for receiving the shaft of screw conveyor in the trough.

4. As a sub-combination in an elevator boot, a deflector having a diagonal face and means for detachably securing it to either side of the boot, said deflector also having a hub for receiving a conveyor shaft.

5. In an elevator, the combination with a conveyor trough and screw conveyor in the trough having its shaft extending from the trough, of a boot having opposite side openings, said trough fitting in either of said openings, means for securing the trough in one of said boot openings, a cap removably mounted in the other side opening and having a bearing box for receiving the screw shaft, and a deflector removably attached to the inner side of the cap and provided with a hub through which the shaft passes.

In testimony whereof I affix my signature.

WILLIAM L. HANCOCK.