E. D. TSCHACHE.

ELEVATOR BOOSTER FOR FLOUR CONVEYERS.

APPLICATION FILED DEC. 26, 1918.

1,361,294. **Patented Dec. 7, 1920.**

Fig. 2.

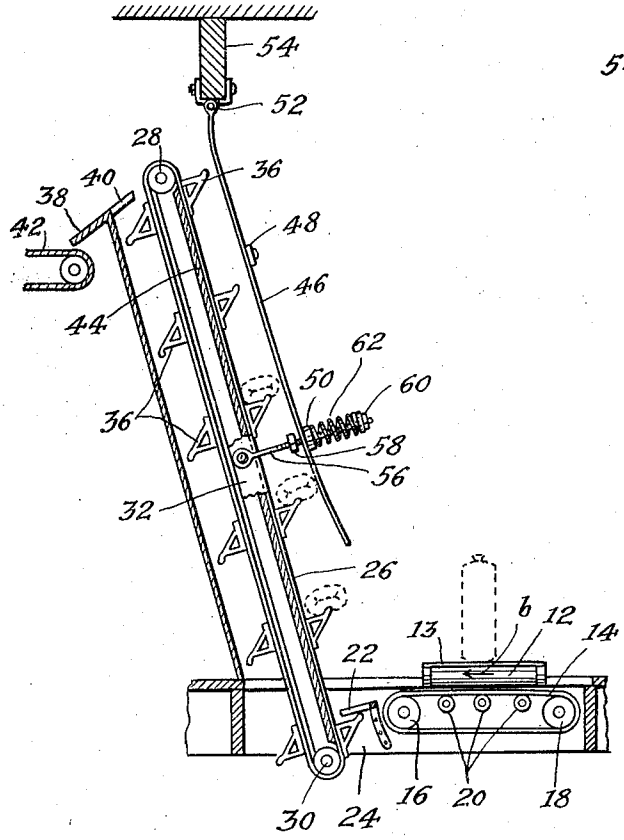
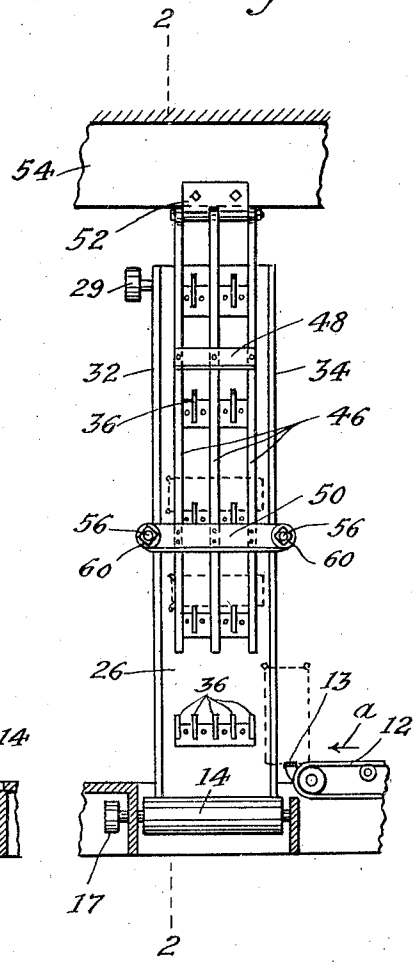


Fig. 1.



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UNITED STATES PATENT OFFICE.

EDWARD D. TSCHACHE, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO WASHBURN CROSBY COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION.

ELEVATOR-BOOSTER FOR FLOUR-CONVEYERS.

1,361,294. Specification of Letters Patent. **Patented Dec. 7, 1920.**

Application filed December 26, 1918. Serial No. 268,327.

To all whom it may concern:

Be it known that I, EDWARD D. TSCHACHE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Elevator-Boosters for Flour-Conveyers, of which the following is a specification.

My invention relates to elevator boosters for flour conveyers and has for an object to provide an apparatus for boosting or elevating sacks of flour in a conveyer system without liability of the sacks being jarred off the apparatus while they are being elevated. The full objects and advantages of my invention will appear in connection with the detailed description thereof and the novel features embodied in my inventive idea will be particularly pointed out in the claims.

Referring to the accompanying drawings,—

Figure 1 is a front elevational view. Fig. 2 is a view mostly in section on the line 2—2 of Fig. 1.

In the particular construction shown in the drawings 12 designates a belt traveling in the direction of the arrow *a* for carrying filled and closed sacks of flour in an upright position until they reach a tipping bar 13 at the delivery end of the belt. This bar is so positioned that the belt will carry sacks of flour over the bar until the center of gravity of the sacks is slightly beyond the bar. This causes the sacks to tip over into recumbent position so as to lie transversely upon a short endless belt 14 positioned adjacent the delivery end of the belt 12 with its direction of travel at right angles to the direction of travel of the belt 12. The upper stretch of the belt 14 travels in the direction of the arrow *b* and is positioned at a somewhat lower level than the belt 12. The belt 14 passes around rollers 16 and 18 and the upper stretch thereof is supported by idlers 20. A driving pulley 17 is secured to the shaft of one of the end rollers. Adjacent the delivery end of the belt 14 is a comb 22 attached to the frame 24. An endless elevating belt 26 passes over an upper roller 28 and a lower roller 30, the shafts of these rollers being mounted in the side members 32 and 34 of the supporting frame. A driving pulley 29 is secured to the shaft of the upper roller. Attached to the belt 26 at regular intervals are sets of sack-elevating members 36 consisting of fingers adapted to pass between the teeth of the comb 22. Adjacent the upper or delivery end of the belt 26 is an inclined plate 38 having teeth 40 between which the fingers of the lifting members 36 are adapted to pass. Running underneath the lower end of the plate is the receiving end of a traveling belt 42. The elevating belt 26 is supported by a flat upwardly-inclined member 44. In order to retain the sacks upon the fingers 36 while they are being elevated the following construction is provided: A grating consisting of longitudinal bars 46 and crossbars 48 and 50 is provided at its upper end with a hinge 52 which is secured to a support such as a beam 54 near the upper end of the elevating belt. Each end of the crossbar 50 is extended beyond the grating, and these ends are provided with holes through which extend rods 56 attached at one end to the side members 32 and 34, respectively. The rods 56 are provided with screw-threads which extend from their free ends for a considerable distance, and each rod intermediate its ends is provided with a nut 58 which constitutes an adjustable stop to limit the inward movement of the grating. The outer end of each rod is provided with a nut 60, and between each of these nuts and the bar 50 is placed a coiled compression spring 62. These springs serve to hold the grating yieldingly toward the elevating belt 26.

The operation and advantages of my invention will be readily understood from the foregoing description. Sacks of flour are engaged and lifted by the fingers 36, and as the sacks are elevated they are yieldingly engaged by the grating which presses the sacks toward the elevating belt and prevents them from being jarred off the fingers. The amount of inward movement of the grating may be regulated by the adjustable nuts 58.

I claim:

1. An elevator booster for flour conveyers comprising an elevating belt, sack-engaging members attached to said belt, a plurality of longitudinal bars pivotally attached to a support adjacent the upper end of said belt, a crossbar secured to said longitudinal bars, rods attached to the frame of said belt, said rods extending through holes in the ends of said crossbar, nuts on the free ends of

said rods, and compression springs between said nuts and said crossbar.

2. An elevator booster for flour conveyers comprising an elevating belt, sack-engaging members attached to said belt, a plurality of longitudinal bars pivotally attached to a support adjacent the upper end of said belt, a crossbar secured to said longitudinal bars, rods attached to the frame of said belt, said rods extending through holes in the ends of said crossbar, nuts on the free ends of said rods, compression springs between said nuts and said crossbar, and stops on said rods for limiting the forward movement of said longitudinal bars.

3. An elevator booster for flour conveyers comprising an elevating belt, sack-engaging fingers attached to said belt, a plurality of longitudinal bars hinged to a support adjacent the upper end of said belt, a crossbar secured to said longitudinal bars between the ends thereof, the ends of said crossbar extending beyond said longitudinal bars and being provided with holes, screw-threaded rods attached to the frame of said belt and extending through said holes, nuts on the outer ends of said rods, and compression springs between said nuts and said crossbar.

In testimony whereof I hereunto affix my signature.

EDWARD D. TSCHACHE.