Feb. 13, 1934. C. F. ALLISON ET AL 1,947,029

VIBRATING MACHINE FOR SETTLING CONTENTS OF BAGS

Filed July 6, 1931 3 Sheets-Sheet 1

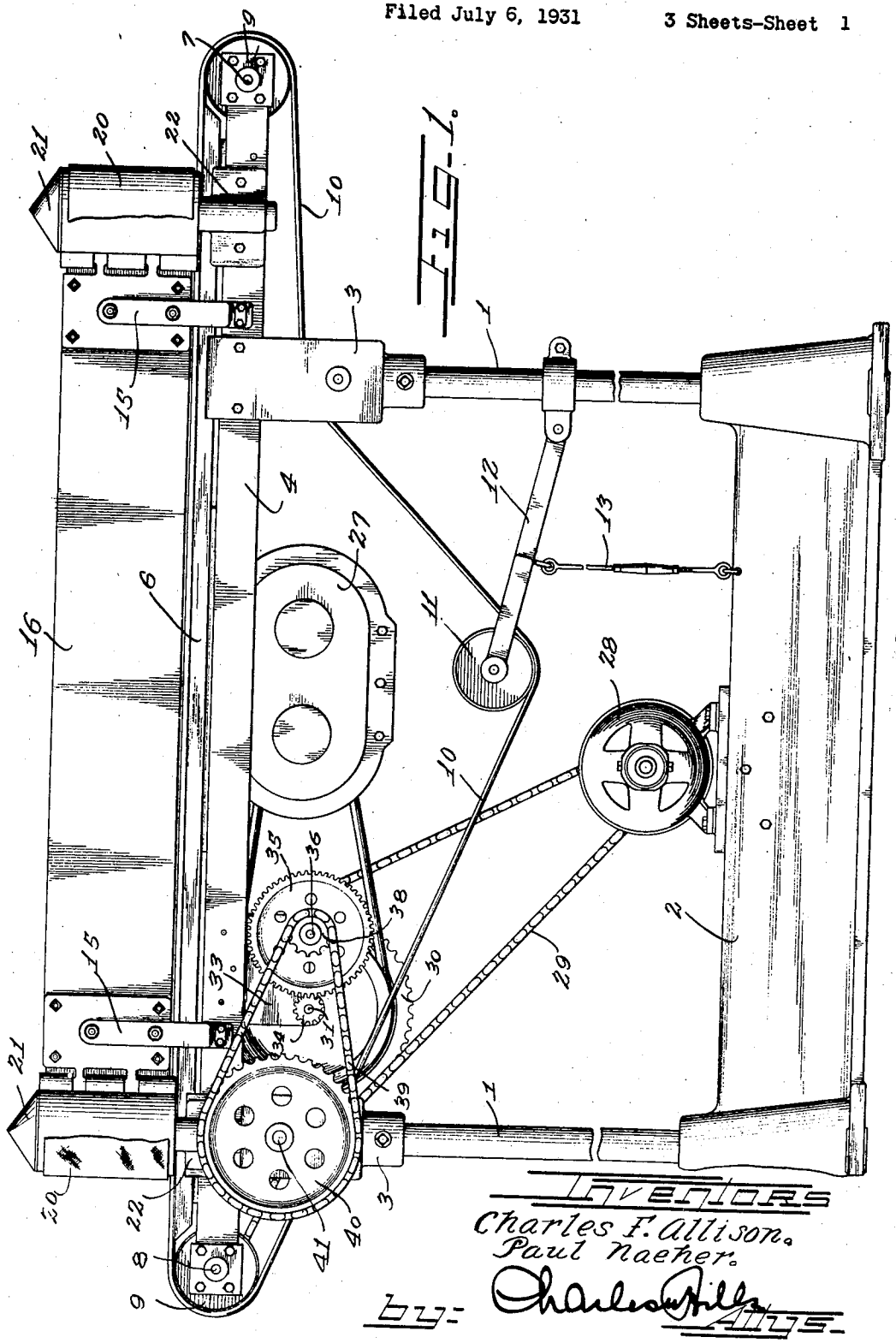

Fig. 1.

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Filed July 6, 1931 3 Sheets-Sheet 2

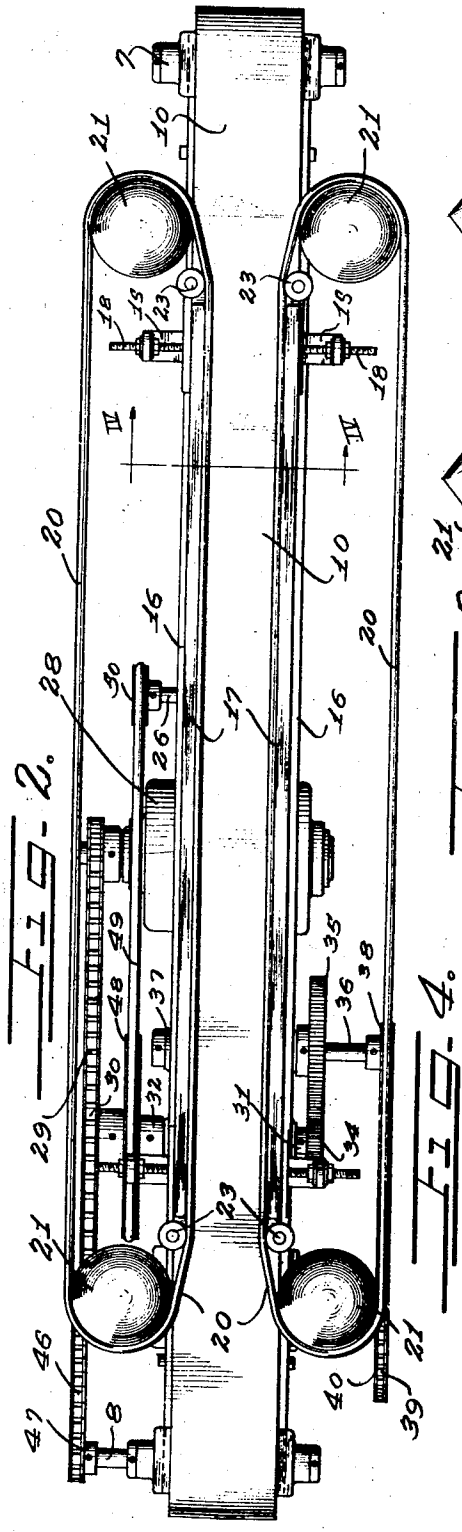

FIG. 2.

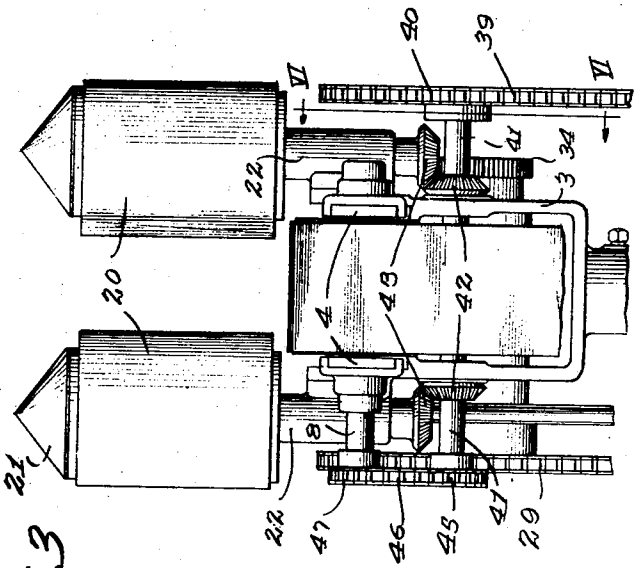

FIG. 3.

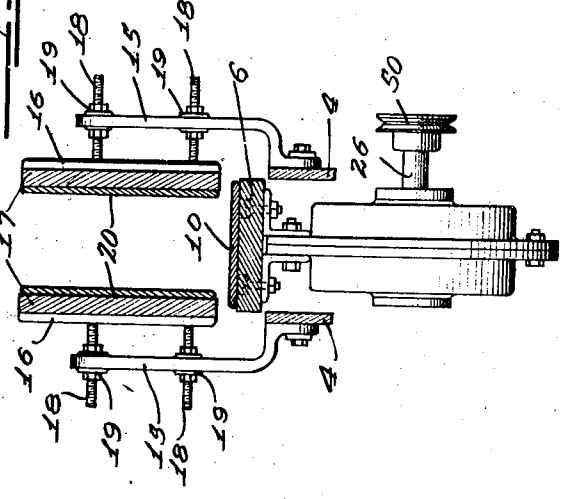

FIG. 4.

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Filed July 6, 1931 3 Sheets-Sheet 3

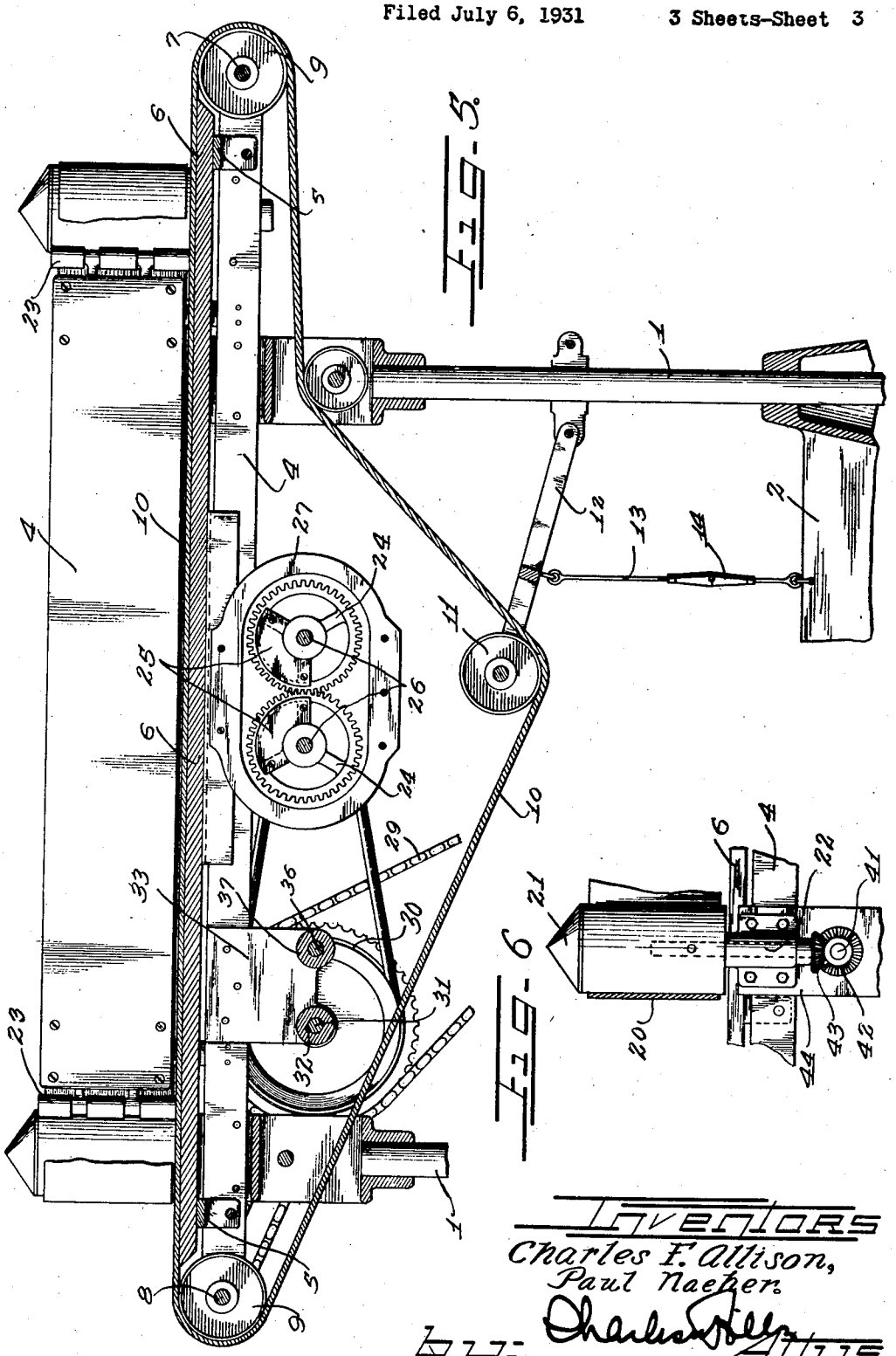

Fig. 5.

Fig. 6

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Patented Feb. 13, 1934 1,947,029

UNITED STATES PATENT OFFICE

1,947,029

VIBRATING MACHINE FOR SETTLING CONTENTS OF BAGS

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Application July 6, 1931. Serial No. 548,911

1 Claim. (Cl. 259—1)

This invention relates to a vibrating machine for settling the contents of bags and concerns itself with a traveling belt adapted for carrying filled bags together with means for guiding the same and means for vibrating the traveling belt for settling and packing the contents of the bag.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claim.

In the accompanying drawings which illustrate a preferred form and in which similar reference numerals refer to similar features in the different views:

Figure 1 is a side elevational view of a vibrating machine involving this invention.

Figure 2 is a top plan view of such machine.

Figure 3 is an end elevational view of the upper portion of said machine.

Figure 4 is an enlarged sectional view taken upon the line IV—IV of Figure 2.

Figure 5 is a longiturdinal sectional view of the machine taken in a vertical plane and illustrating more clearly the operating mechanism therefor.

Figure 6 is an enlarged sectional view taken upon tne line VI—VI of Figure 3.

In the drawings, one embodiment of this invention has been illustrated and in the form shown this illustrated embodiment consists of a pair of pedestals 1 which are connected to a suitable base 2. The top of each pedestal has a bifurcated casting 3 or the like secured thereto for supporting parts of the mechanism. A longitudinally extending side plate 4 is attached to each arm of the different birfurcated members 3 and a plurality of transverse braces 5, (Figure 5) connect the members 4 and form a support for a conveyor platform 6, which consists of a long narrow resilient plank or the like over which the bags are adapted to be propelled as will later more fully appear. The side plates 4 extend beyond the pedestals 1 and the conveyor platform 6. A tail shaft 7 is journaled in the plates 4 at the rear end thereof and a shaft 8 is journaled in the side plates 4 at the front end thereof. Suitable belt pulleys 9 are secured upon the shafts 7 and 8 and a conveyor belt 10 is trained over the pulleys 9. It will be noted that the tops of the pulleys 9 lie in the plane of the top surface of the conveyor platform 6 so that the traveling belt 10 can pass in contact with the platform 6 as it is rotated by the pulleys 9. The lower reach of the belt 10 passes over a slack adjusting pulley 11 which is journaled upon a suitable lever 12 pivoted to the adjacent pedestal 1 and anchored with respect to the base 2 by means of an adjustable anchor rod 13 having a turnbuckle 14 thereon for the purpose of adjusting the lever 12 to take up any slack in the conveyor belt 10.

Each side plate 4 has a plurality of upstanding brackets 15 which support longitudinally extending guide plates 16. To the inner surface of each guide plate 16 a board 17 is attached. These longitudinally extending boards 17 form a guideway therebetween for the passage of the filled bags upon the traveling belt 10. The guideways formed by the boards 17 may be laterally adjusted to widen or narrow the guideway in a manner that will now be explained: Each metal plate 16 has a plurality of outwardly projecting screws 18 which pass through rotatable nuts 19 in the brackets 15. By rotating the nuts 19, the guide bars may be moved inwardly or outwardly to narrow or widen the guideway for the bags.

In the construction illustrated, a pair of vertical guide belts 20 are provided for assisting the conveyor belt 10 and for maintaining the bags in proper shape as they pass therebetween. In addition these vertical guide belts may serve to give the proper shape to the wall of the bag as it travels therebetween. These vertical guide belts 20 are trained over vertical pulleys 21 which are journaled in suitable bearing brackets 22 attached to the side plates 4. The inner reaches of these belts 20 are designed to travel adjacent the inner surfaces of the adjacent guide bars 17. Guide rollers 23 as shown in Figure 2 are preferably journaled adjacent the ends of the guidewall 17 for guiding the belts from contacting the ends of the guidewall.

The bag platform 6 and the upper reach of the conveyor belt 10 are adapted to be vibrated when the machine is in operation for shaking the bags passing over the platform and settling the contents thereof. While different forms of vibrating mechanism may be used, a particular mechanism has been illustrated which consists of a pair of inter-geared members 24 having eccentric weights 25 thereon. These gear members 24 are secured to shafts 26 journaled in a suitable casing 26 which is suspended from the bottom of the platform 6 in any suitable manner. This particular vibrating mechanism or agitator as it is sometimes termed, may be better understood by reference to the Jubien Patent No. 1,675,560 which clearly describes and sets forth the operation thereof. It might be mentioned that as the gears 24 rotate, the eccentric weight 24 will tend to fly outwardly and impart a vibratory motion to the platform 6 and jar the belt 10 when the

centrifugal force thereof is directed in vertical directions.

A description of the mechanism for driving the different parts of the machine will now be set forth: Referring especially to Figures 1, 2 and 5, it will be noted that a motor 28 is anchored upon the base 2 and the shaft of this motor is geared to a sprocket chain 29 which in turn is trained over a sprocket wheel 30 mounted upon a shaft 31 which is journaled in suitable bearings 32 which are integral with castings 33 attached to the side plates 4. One of these side plates and its casting 33 is clearly shown in Figure 5. The shaft 31 extends transversely of the machine underneath the bag platform 6 and supports at its near end a pinion 34 which is clearly shown in Figure 2. Pinion 34 meshes with a gear 35 which is secured upon a shaft 36 which is journaled in suitable bearings 37 in the aforementioned casting 33. A sprocket wheel 38 is secured upon the end of the shaft 36 and a sprocket chain 39 is trained over the sprocket wheel 38 and also over a sprocket wheel 40 which is secured upon a shaft 41. In referring to Figure 3 it will be noted that the shaft 41 extends transversely across the machine and is provided with beveled pinions 42 rigidly secured thereon which mesh with beveled pinions 43 which are respectively secured to the shafts of the pulleys 21 for rotating the same and operating the guide belts 20 as will be apparent. The shaft 41 may be journaled in suitable depending brackets 44 secured to the side plates 4 as shown in Figure 6.

It will also be noted that the shaft 41 extends outwardly beyond the far pinion 42 and has a sprocket 45 rigidly secured thereon over which a sprocket chain 46 is trained. This sprocket chain 46 is also trained over a sprocket 47 secured upon the aforementioned shaft 8 that drives the pulleys 9 for rotating the conveyor belt 10.

The before described vibrating mechanism is adapted to be driven from the aforementioned drive shaft 31 which is provided with a belt pulley 48 as shown in Figure 2, and this belt pulley 48 is connected by a belt 49 with a small belt pulley 50 on one of the shafts 26 of the before described vibrating mechanism. It will be obvious that in the organization illustrated, one motor is used to drive the conveyor belt 10, the guide belt 20 and the agitator mechanism. Consequently, when the machine is set in motion, the vibrating mechanism will also be set in motion for vibrating the platform 6, and the upper reach of the belt 10 that carries the filled bags for the purpose of settling the contents thereof and tightly packing the same so that the upper neck of the bag may be folded and sealed either by hand or in a folding and sealing machine.

It will be appreciated that the machine embodying this invention, not only settles and packs the contents of the bags but that the guide belt 20 also serves to properly shape the walls of the bag for obtaining a substantial rectangular package or one having parallel sides whereby the folding operation can be readily carried out.

We are aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention and we, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

We claim as our invention:

In a machine for settling and packing the contents of a container, an elongated resilient platform, means fixedly supporting said platform near its ends, a conveyor belt supported for traveling movement slidable on the platform, spaced guide walls above said platform, means for adjusting said guide walls, a pair of vertical pulleys at each end of said guide walls, vertical belts trained over said pulleys for traveling movement along the inner surfaces of said guide walls, and vibratory means suspended supported by said elongated platform for vibrating the same.

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