J. J. CURRAN.

BAG HANDLING APPARATUS.

APPLICATION FILED FEB. 24, 1921.

1,383,790.

Patented July 5, 1921.

2 SHEETS—SHEET 1.

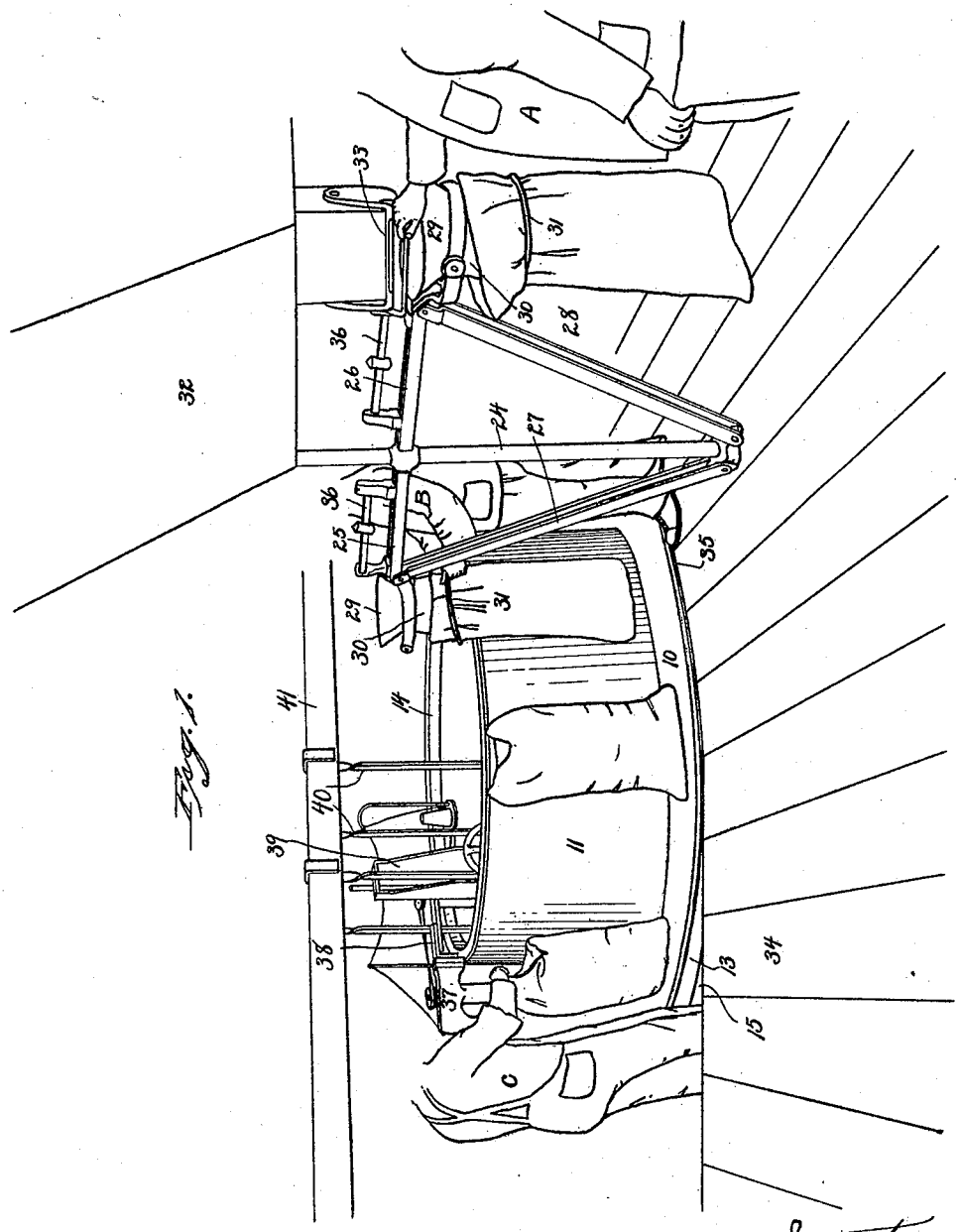


Fig. 1.

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John J. Curran
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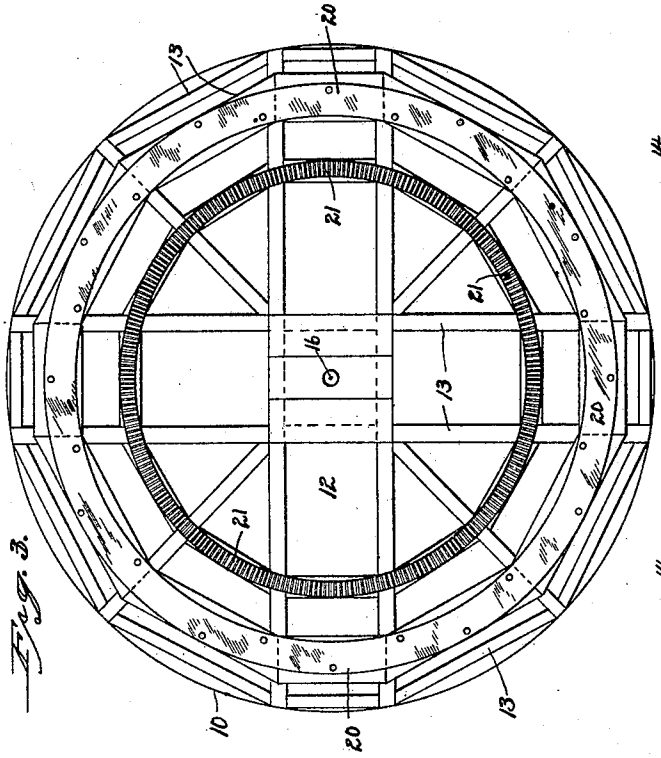


Fig. 3.

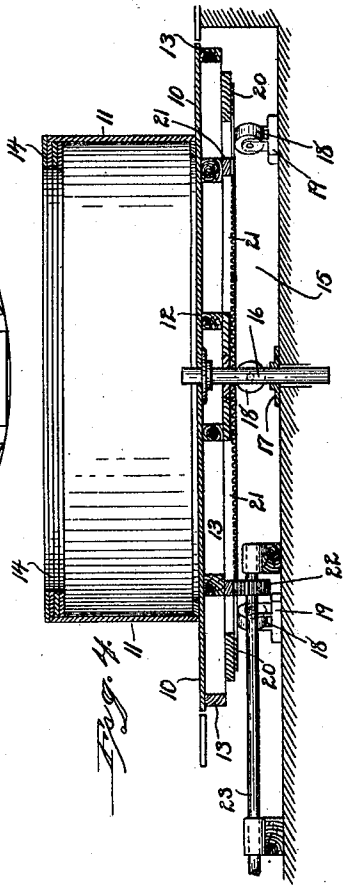


Fig. 4.

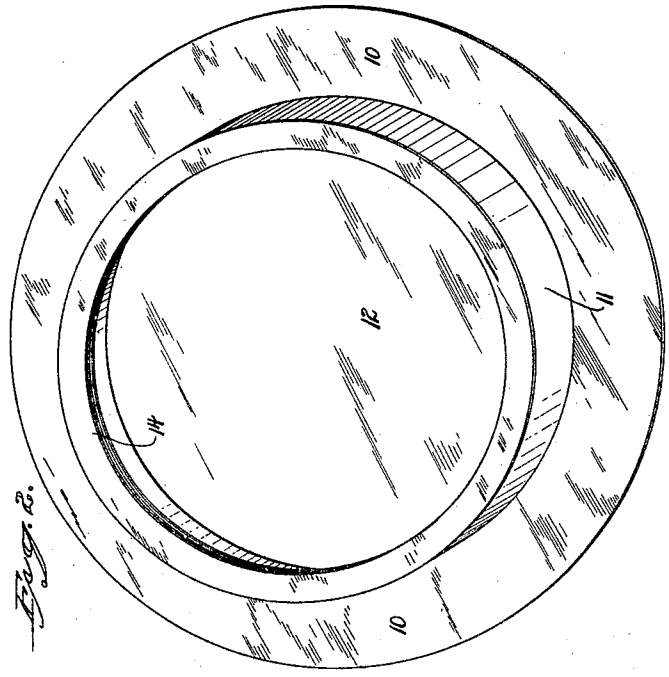


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN J. CURRAN, OF WEST HAVEN, CONNECTICUT, ASSIGNOR TO THE AMERICAN AGRICULTURAL CHEMICAL CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

BAG-HANDLING APPARATUS.

1,383,790. Specification of Letters Patent. Patented July 5, 1921.

Application filed February 24, 1921. Serial No. 447,539.

To all whom it may concern:

Be it known that I, JOHN J. CURRAN, a citizen of the United States, residing at West Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Bag-Handling Apparatus; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1, a perspective view of my improved apparatus.

Fig. 2, a detached perspective view of one form which my improved, rotary bag-carrier may assume.

Fig. 3, a reverse plan view thereof.

Fig. 4, a view in vertical central section of the bag-carrier as installed, with means for driving it.

My invention relates to an improved apparatus for handling bags of fertilizer, feed, and such other materials as are supplied to the trade in bags. My apparatus, while primarily designed for handling bags after they have been filled and weighed and in the operation of sewing them up, is not so limited. The object of my invention is to provide a simple, convenient and labor-saving apparatus in which the handling of the filled bags is reduced to the minimum, thus saving time and labor.

With these ends in view my invention consists in a bag-handling apparatus having a rotary bag-carrier, turning in a horizontal plane and comprising an annular bag-carrying platform from the inner portion of which a concentric bag-support rises.

My invention further consists in a bag-handling apparatus having a rotary bag-carrier, turning in a horizontal plane and comprising an annular bag-carrying platform and a concentric bag-supporting wall rising from the inner portion thereof.

My invention further consists in a bag-handling apparatus having a rotary bag-carrier, turning in a horizontal plane and comprising an annular bag-supporting platform from the inner portion of which a bag-support rises, and bag-filling and bag-sewing means respectively located adjacent to the inner and outer edges of the said rotary bag-carrier.

My invention further consists in a bag-handling apparatus having certain details of construction and combination of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, as herein shown, I employ a rotary bag-carrier turning in a horizontal plane and consisting of an annular bag-carrying platform 10, having an upstanding, concentric, bag-supporting wall 11 rising from its inner edge. As shown, the annular platform 10 comprises the outer edge of a large circular table 12, supported on framework 13, and is produced in effect by positioning the wall 11 thereon sufficiently within the edge of the said table to create the annular platform. The upper edge of the wall 11 is reinforced by a laminated collar 14. I do not, however, limit myself to constructing the rotary bag-carrier in the manner shown.

The said bag-carrier is installed over a pit 15, in which it is centered by a short shaft 16 projecting downward from it and into a bearing 17 secured to the bottom of the said pit in which latter it is supported upon casters 18, journaled in brackets 19 secured to the bottom of the pit. An annular, sheet-metal track 20, secured to the bottom of the framework 13 of the carrier, rests upon the casters 18, which turn as the carrier is slowly revolved by means of an annular rack 21, secured to its lower face and driven by a pinion 22 upon a shaft 23 connected with any convenient source of power.

In the embodiment of my invention herein shown, my improved, rotary bag-carrier is used in combination with a rotary filling-and-weighing machine and a sewing machine, these two machines forming "stations" at which the bags are operated upon. The bag filling-and-weighing machine may be of any standard character, such as the Sawyer-Fulford revolving bagging and weighing machine, herein sufficiently shown as consisting of an upright post 24 carrying horizontal arms 25 and 26 supported by braces 27 and 28. The outer ends of these arms carry funnels 29, formed at their lower ends with flaring-skirts 30, upon which the mouths of the bags are held by hoops 31. The bags are filled from a hopper 32 under the control of a hopper-gate 33, manually operated by an operator designated by A. After the bag has been filled from the hop-

per, the device is rotated through a half circle, so as to swing the filled bag over the annular platform 10 upon which it is dropped by an operator B standing close to the edge of the platform upon the floor 34, which conforms in curvature to the platform as at 35. The arms 25 and 26 are provided with the usual scales, here merely indicated at 36.

Directly over the annular platform 10 and at a point just above the upper edge of the wall 11 thereof, I locate a sewing-machine head 37, of any standard construction, and provided for sewing up the mouths of the bags, which are presented to it by an operator C standing at what may be called the "sewing station" on a level below the floor 34, so that he will not be obliged to stoop at his task. The head 37 is supported from a point within the wall 11 by a bracket 38 connected with a frame 39 suspended by straps 40 from a hanger-beam 41. However, these details are immaterial, as the particular construction and operation of the sewing-machine is no part of my present invention, which comprehends only the location of a sewing-head directly over the rotary platform 10 at about the height of the top of the wall 11. However, provision is made for the vertical adjustment of the sewing-head 37 to accommodate different heights of bags.

In the use of my invention the bags, after being filled and weighed by operator A, are swung through a half circle over the platform 10 upon which they are dropped by operator B, who tilts the bag inward against the bag-supporting wall 11, so that it will not fall off the platform 10, which is all the time slowly revolving, whereby the bags are carried in a circular path to operator C, who presents their mouths to the sewing-machine head 37, whereby they are sewed up, after which he may himself tilt them outward to permit them to fall upon a separate conveyer, or upon hand trucks, or into chutes. In case the sewing-machine thread should break, or the sewing-machine fail to function, operator C has only to ignore the bag before him and attend to the repair of his machine. In due time, the same bag will be returned to him for the completion of the sewing operation. If he is not ready for it he may allow it to pass again, and so on. In any case the same bag will be repeatedly presented to him for attention until it is removed from the rotary carrier. Here my invention presents a great advantage over the bag-conveyers of the prior art, which made no provision for returning any given bag to the operator of the sewing-machine, but carried it on and discharged it unsewed, or only half sewed, unless he lifted it off the conveyer and carried it to the other end thereof, for its re-presentation in the proper manner to the sewing-machine, thus entailing a great loss of time, heavy handling, and often the spilling of the contents of the bag. In the conveyers of the prior art, the operator of the sewing-machine could not ignore the bags presented to him, since, if he did so, they would be discharged unsewed by the conveyer. He was compelled, therefore, to stop the conveyer while he attended to the repair or readjustment of his sewing machine, or call in help. On the other hand, my improved apparatus presents the advantage of permitting the sewer to leave a bag partly sewed, or to ignore bags as they are presented, while he looks after the machine, since, in due time, the bags will be re-presented until they are manually removed from the platform.

In case the bags are to be hand-sewed, a group of sewers are stationed at substantially equidistant points around the rotary bag-carrier from which they remove the bags as required. As different sewers work at different speeds, exact timing is impossible, so here again the sewers may ignore the bags passing before them except as they are ready for them, whereby the efficiency of the sewers is increased and the handling of the bags reduced to the minimum. My invention thus avoids pressing any sewer for time to the extent of neglecting to sew the bag thoroughly in his haste to be ready to remove the next bag presented to him, as was the case with the bag-handling apparatus of the prior art. It is intended that the rotary, annular bag-carrier shall be large enough to receive a large number of bags, so that in case the sewing-machine gets out of commission, the filling-and-weighing machine need not be stopped, but allowed to load the bag-carrier to capacity. This full load is soon taken care of by the sewing-machine when it starts up, as it operates very rapidly, and can sew bags faster than they can be filled.

I claim:

1. In a bag-handling apparatus, the combination with a rotary, annular platform, of a bag-support upstanding from the inner portion of the said platform for preventing the bags dropped thereupon from toppling inward with respect thereto, bag-handling mechanism located adjacent to the outer edge of the said platform and adapted to carry bags thereover preparatory to dropping them thereupon, and a sewing-machine having its sewing-head positioned directly above the platform for the sewing of the mouths of the bags as they are brought under it by the rotation of the rotary platform.

2. In a bag-handling apparatus, the combination with a rotary, annular platform, of a bag-support upstanding from the inner edge of the said platform for preventing

bags dropped thereupon from toppling inward, bag-handling mechanism located adjacent to the outer edge of the said platform in position to drop bags thereupon, a sewing-machine having its sewing-head positioned directly over the platform for sewing the mouths of bags brought under it thereby, and means located within the upstanding bag-support for mounting the sewing-head, whereby such supporting means are removed from the path traveled by the bags.

3. In a bag-handling apparatus, the combination with a rotary, annular platform, of a bag-support upstanding from the inner portion of the said platform for preventing the bags from toppling inward with respect thereto when dropped thereupon, and a sewing-machine head positioned directly above the platform for the sewing of the mouths of the bags as they are brought under it by the rotation of the rotary bag-carrier, and supported from within the said bag-support and hence out of the path of the bags.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JOHN J. CURRAN.

Witnesses:
M. E. HUNTINGTON,
MALCOLM P. NICHOLS.