

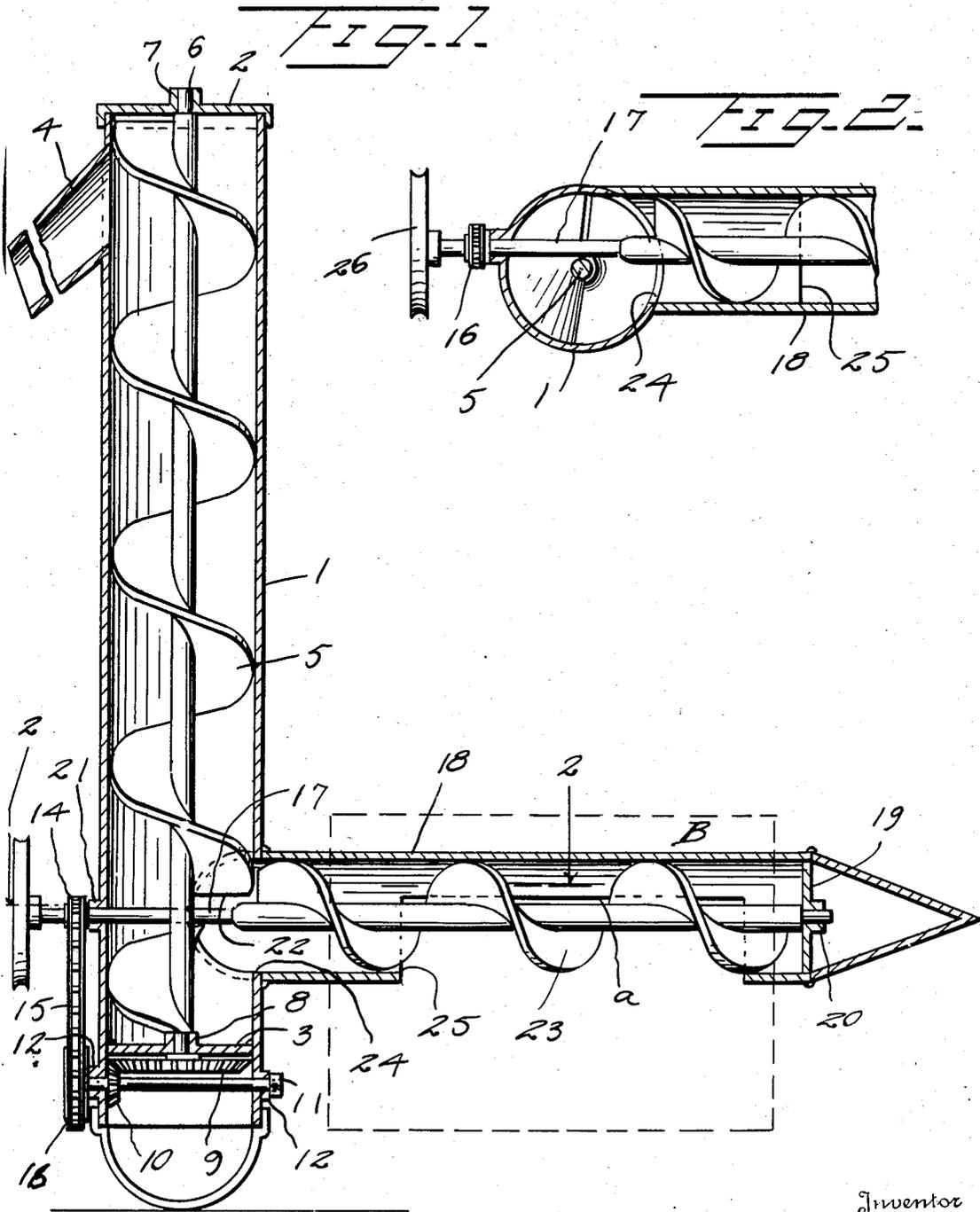
Aug. 29, 1944.

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2,357,220

GRAIN ELEVATOR

Filed June 29, 1943



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2,357,220

GRAIN ELEVATOR

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Application June 29, 1943, Serial No. 492,756

1 Claim. (Cl. 198—213)

This invention relates to a grain elevator and it is a particular object of the invention to provide an elevator which is especially adapted for use by the average farmer and which can be conveniently and effectively employed in transferring grain or other substances from a container to a receptacle.

It is also an object of the invention to provide an elevator which can be easily moved from one location to another and wherein the machine includes an elevator member which can be tilted to one side or the other thereby making it possible to direct the material to receptacles, bins, or the like to both sides of a driveway of a granary without changing or shifting the position of the machine as a unit.

It is also an object of the invention to provide a machine of this kind including as a unit an elevating section and a feed section for delivering material to the elevating section, said feed section being constructed to be inserted into a mass of the material to be elevated, as within a hopper, bin, truck box, or other source of supply.

An additional object of the invention is to provide a machine of this kind including an elevating spiral or auger and a feed spiral or auger delivering direct to the receiving end portion of the elevating spiral or auger and wherein one of said spirals constitutes a driver for the other.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved grain elevator whereby certain important advantages are attained, as will be hereinafter more fully set forth.

In order that my invention may be better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:

Figure 1 is a vertical sectional view with portions in elevation of a grain elevator constructed in accordance with an embodiment of the invention and;

Figure 2 is a transverse sectional view through the elevating section at a point above the feed section.

In the embodiment of the invention as illustrated in the accompanying drawing the elevator comprises as a unit two parts A and B, the part A being the elevating section and the part B constituting a feed section.

The part or elevating section A comprises an elongated tubular member 1 of desired dimensions having its outer or top end closed, as at

2, and the inner or bottom end of the member 1 is closed by the intersecting bottom wall 3 positioned a desired distance inwardly of the lower or inner end of the member 1. The upper or outer end portion of the member 1 in close proximity to the closed end 2 thereof carries and has in communication therewith a discharge spout 4.

Disposed axially of the member 1 is a spiral or auger elevator 5 of a length extending substantially from the closed end 2 of the member 1 to the bottom wall 3 thereof. The upper or outer extremity of the shaft 6 of the elevator is rotatably disposed through a bearing 7 carried by the closed end 2 while the lower or inner end portion of the shaft 6 is directed through a bearing 8 carried by the bottom wall 3. Fixed to the shaft 6 below the bottom wall 3 is a beveled gear 9 which engages from above a beveled pinion 10 fixed to a shaft 11. This shaft 11 is disposed radially through the member 1 and has its end portion engaged with the bearings 12 carried by the member 1 at diametrically opposed points.

One end portion of the shaft 11 exteriorly of the member 1 has fixed thereto a sprocket 16 with which is engaged an endless chain 15 also in operative engagement with a sprocket 14 carried by the extended portion of a shaft 17 extending transversely through the member 1 slightly to one side of the shaft 6 of the elevator and at substantially right angles thereto. This shaft 17 also extends axially of a tubular member 18 of desired dimensions which is comprised in the part or feed section B. The outer end of this member 18 is closed as at 19 and this closed end 19 carries a bearing 20 with which an end portion of the shaft 17 engages while the opposite end portion of the shaft 17 is operatively engaged with the bearing 21 carried by the member 1.

The blade or spiral of the elevator or auger 5, is cut away or interrupted as at 22 to allow for the placing of the shaft 17 so that the shaft 17 will offer no hindrance or obstruction to the desired rotation of the elevator or auger 5.

The shaft 17 carries the spiral or auger blade 23 which extends from a point closely adjacent to the outer closed end 19 of the member 18 to a point closely adjacent to the member 1 or more particularly the opening 24 in the wall of the member 1 whereby desired communication is had between said member 1 and the member 18.

The member 18 throughout its length is cylin-

dricial in form and for a material distance therealong the wall of the member 18 is cut out from below as at 25 to provide an entrance opening preferably extending more than one-half way around the member 18 or with the longitudinal edges a defining the opening 25 positioned above the shaft 17.

The extended end portion of the shaft 17 carries a driving member 26, herein disclosed as a pulley of desired radius, adapted to be coupled to a suitable source of power.

The device is particularly designed for use by the average farmer in the handling of grain although, of course, it is not desired to limit the invention to this particular use.

The device is preferably made of metal and its structure is such as to be light in weight whereby the device as a unit may be readily and conveniently transported from one location to another as desired.

In practice the member 18 of the part or feed section B is inserted in the mass of material to be handled and if such mass be within a hopper, bin, or the like a side wall thereof is cut out to allow for the insertion of the member 18 and which opening can be ordinarily closed by a suitable gate or door.

When the device is in working position the member 1 is disposed in a vertical direction but on account of the cylindrical formation of the member 18, this member 1 can be readily swung to one side or the other as may be desired and particularly when the material is to be delivered to receptacles or bins at both sides of the drive way in a granary.

The device requires no special supporting structure as the member 18 can be rested if desired upon the bottom of a hopper or the like or the mass of material therebelow will afford sufficient support.

When the device is in applied or working position, the driving member or pulley 26 is coupled to a suitable source of power and as the shaft 17 rotates, the blade 23 will carry the material entering the member 18 through the opening 24 and under pressure into the member 1 and in contact with the spiral elevator or auger 5.

It is also to be pointed out that by having the opening or cut out portion 25 underneath, the weight of the mass of material above the member 18 is held off of the blade 23 and thus facili-

tating the effective operation of the feed means with a minimum of power.

It is also to be pointed out that the various gears and bearings are exteriorly arranged so that any material that might get into the same will fall away.

The outer closed end 19 of the member 18 is tapered to a point to facilitate the desired insertion of the member 18 into the mass of material.

It is also to be noted that the inner or bottom end of the member 1 is provided thereacross with an arcuate shoe disposed radially thereacross to afford protection for such end portion of said member 1.

From the foregoing description, it is thought to be obvious that a grain elevator constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated.

I claim:

A fluent material elevator comprising a tubular housing, a foot secured to one end of the housing upon which the housing is maintained upright, said foot being designed to facilitate the support of the housing vertically and at an inclination from the vertical as required, a wall extending across the lower end of the housing inwardly of such end, a discharge outlet at the opposite end of the housing, a screw conveyer disposed within the housing and supported for rotation upon said wall, said conveyer having the screw transversely broken adjacent to said wall, a lateral tubular housing connected with the first housing adjacent the break of the screw and having a downwardly directed wall opening, a screw conveyer in the lateral housing having a central shaft extending transversely across the first housing within the break of the screw and through the wall of said first housing, means carried by said shaft facilitating the application of rotary power thereto, a gear in the first housing beneath the said wall and connected with the first screw, a stub shaft extending transversely of the first housing beneath the said wall and said gear and supported for rotation, a pinion gear carried by the last mentioned shaft and meshing with the first gear, and a driving connection between the two shafts.

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