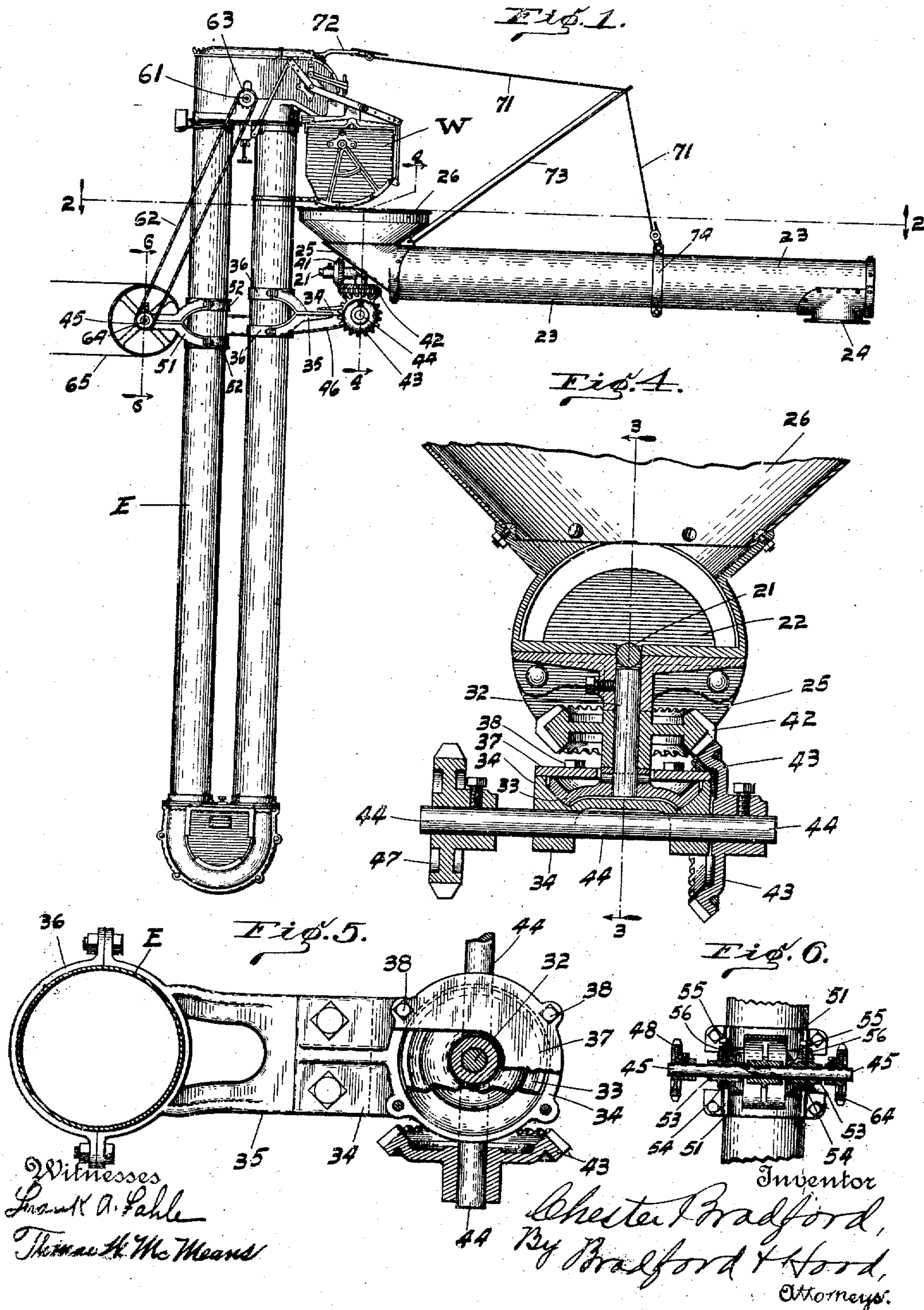


No. 881,295.

C. BRADFORD.  
SWINGING CONVEYER.  
APPLICATION FILED APR. 2, 1906.

PATENTED MAR. 10, 1908.

2 SHEETS—SHEET 1.





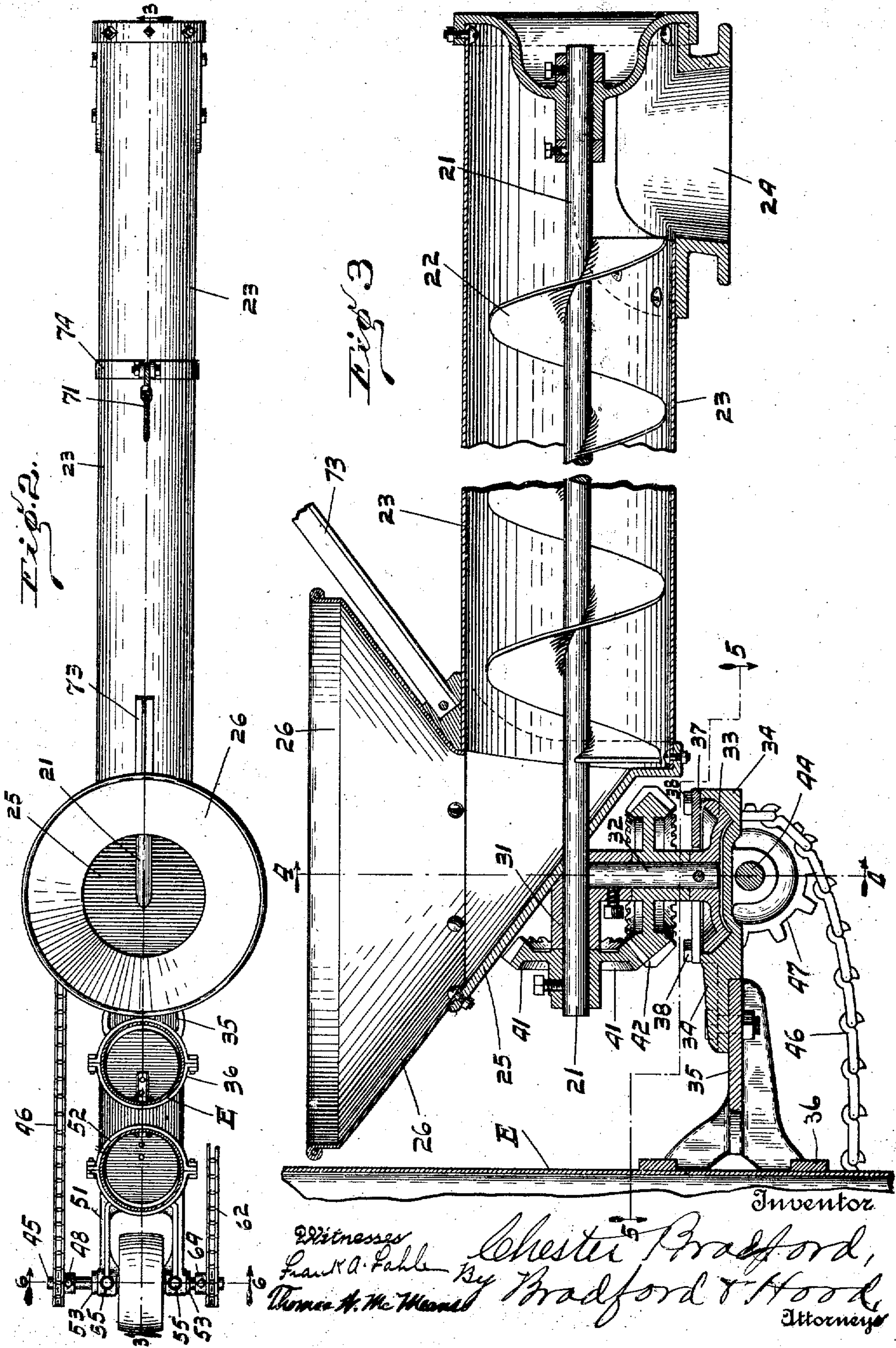
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# UNITED STATES PATENT OFFICE.

CHESTER BRADFORD, OF INDIANAPOLIS, INDIANA.

SWINGING CONVEYER.

No. 881,295.

Specification of Letter Patent.

Patented March 10, 1908.

Application filed April 2, 1906. Serial No. 309,345.

*To all whom it may concern:*

Be it known that I, CHESTER BRADFORD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Swinging Conveyers, of which the following is a specification.

In the class of devices which are attached to threshing machines to receive the threshed grain from the separator, elevate and weigh the same, and deliver it to stacks or wagons for further disposition, two distinct varieties of the grain delivering or transferring device commonly known as a "cross conveyer" are employed. One is the well known "stationary" cross conveyer which is mounted upon the deck of the separator and remains continuously in the position where placed. The other is supported by pivotal mountings and is adapted to swing to various positions, so that the grain can be delivered at different points by merely moving the discharging end of the conveyer to the point desired.

My present invention relates to the latter or "swinging" variety, and it mainly consists in an improved supporting and driving mechanism for such a conveyer, and in the peculiar form and construction of parts incident thereto, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a side elevation of a grain elevator, weigher, and swinging conveyer, embodying my said invention; Fig. 2 a top or plan view on an enlarged scale of the conveyer with the elevator in section, as seen when looking downwardly from the dotted line 2 2 in Fig. 1; Fig. 3 a longitudinal vertical sectional view with the central portion broken away, and on a still further enlarged scale, as seen when looking from the dotted lines 3 3 in Figs. 2 and 4; Fig. 4 a transverse vertical sectional view as seen when looking in the direction indicated by the arrows from the dotted line 4 4 in Figs. 1 and 3; Fig. 5 a detail plan view as seen when looking downwardly from the dotted line 5 5 in Fig. 3; and Fig. 6 a detail sectional view as seen when looking in the directions indicated by the arrows from the dotted lines 6 6 in Figs. 1 and 2.

The elevator E and the weigher W (while embodying features of novelty forming the subject-matter of other patents and applica-

tions) constitute no part of my present invention, and therefore will not be described herein except incidentally in describing the invention.

The conveyer proper has the usual auger shaft 21 and worm or auger 22, said shaft being mounted in suitable bearings in the ends or heads of the tube or casing 23 which forms the principal part of the shell of the conveyer. Said conveyer is provided at its discharging end with a discharging mouth 24, and its opposite end develops into a receiving mouth having an end inclined wall 25, and to the upper edge of this mouth (which constitutes the lower part of the receiving hopper) the upper portion 26 of said hopper is secured—this portion being located directly below the weigher W, or the discharging mouth of the elevator, (according to the variety of machine with which the conveyer is used), and is adapted to receive the grain.

The wall 25 is inclined (as shown and just described) for the purpose of providing room for the peculiar arrangement of driving gears which I have devised. It also facilitates the flow of the grain to the auger, and enables the conveyer to clean itself more thoroughly in operation. To the outer and under side of this inclined wall is secured a bearing 31 for the shaft 21. In the same structure is also a socket to receive the pivot shaft 32. Said pivot shaft is provided on its lower end with a bearing plate 33 which rests in a suitable cavity in the bracket members 34. The bearing surface on the part 33 is preferably of the form of a zone on a globe, the center of which is coincident with the center of the gear traveling on the pivot shaft, as will be presently described, and the corresponding surface on the part 34 is similarly formed. This permits of the slight oscillation desirable to a support of this character, without causing any of the parts to bind. The supporting bracket is shown as formed in two parts 34 and 35, the part 35 being fitted to one leg of the elevator E and being clamped thereon by clamping bands 36. The bracket however might be made in a single piece if desired. Escape of the head 33 from its socket is prevented, when the parts are assembled, by a suitable keeper secured to the part 34, said keeper being shown in the form of a slitted plate 37 secured to the part 34 by cap screws 38.

Upon the shaft 21 is a bevel gear 41 which



engages with the upper side of a corresponding double bevel gear 42 which is mounted loosely on the pivot shaft 32. The under side of said double bevel gear 42 engages with a bevel gear 43 which is mounted on the driving shaft 44, said driving shaft being mounted in suitable bearings secured to or formed integrally with the part 34, as is best shown in Fig. 4. Said driving shaft is driven from a countershaft 45 (see especially Fig. 1), and the usual and preferable means of transmitting the power is a sprocket chain 46 which runs over suitable sprocket wheels 47 and 48.

The countershaft 45 is mounted in suitable bearings in a bracket 51 which is adjustably mounted on the other leg of the elevator from that on which the bracket 34—35 is mounted and is secured thereto by suitable clamping rings (or rather half-rings) 52. Said bracket is adjustable on said elevator leg both circumferentially and longitudinally, and is thus capable of being adjusted to the exact position desired. The bearings 53 for said countershaft 45 are also adjustably mounted in the bracket, being supported upon one side by projecting points 54 which enter suitable cavities in the adjacent sides of said bearings, so that said bearings are capable of sliding somewhat thereon, and upon the other side by means of set-screws 55, the points of which enter cavities in the opposite side of said bearing. Said set-screws are also provided with jam nuts 56 by means of which they may be securely locked in adjustable position. Said bearings are thus rendered self-adjustable, so that they will line up properly with the shaft automatically. The countershaft 45 is shown as also driving the main upper elevator shaft 61 by means of a sprocket chain 62 running over suitable sprocket wheels 63 and 64, and as being driven by a belt 65 from some suitable pulley on the separator (not shown).

The bracket 34—35, like the bracket 51, is adjustable on the elevator leg both circumferentially and longitudinally, and the conveyer may thus be brought to the exact position desired. The outer portion of the conveyer is supported from the elevator head by a suitable and preferably flexible support 71 running from a point substantially perpendicular above the pivot shaft 32 (where it is shown as connected to said head by a bracket 72) over the end of a strut 73 to a band 74 surrounding the tube or casing 23.

The operation may be briefly described as follows: The grain coming from the elevator or weigher falls into the hopper 26 and slides down the inclined wall 25 into the tube 23 through which the auger 22 conveys it rapidly to the discharging mouth 24. The hopper is circular in form so that it receives the

grain with equal facility at whatever position the conveyer may be placed—the center of said hopper being substantially perpendicularly below the center of the weigher bucket, as shown. The auger shaft 21 is driven in any position by the gears which have been described from any suitable source of power—usually the countershaft 45. By reason of the peculiar form of the conveyer end these gears are enabled to be of substantial size and proportions and to be located centrally below the hopper and receiving end of the conveyer. As will be obvious, the gears permit the swinging of the conveyer to any position desired, either across the separator, or extending out therefrom, and to be so positioned as to be able to deliver into a plurality of receptacles by simply swinging it from one position to another. All the parts are of a very substantial and durable character and are simple and certain in their operation. The adjustability of the brackets render it easy to adjust the conveyer with certainty and accuracy to any position desired.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is,—

1. The combination, with a swinging conveyer composed of a tube having bearings at opposite ends and an auger in said tube the shaft whereof rests in said bearings, of a driving mechanism therefor composed of a bevel gear mounted on the said auger shaft, a double gear loosely mounted on a pivot shaft at right angles with the auger shaft, a driving shaft positioned below said pivot shaft, and a gear mounted on said driving shaft and also engaging with the double gear on the pivot shaft.

2. The combination, in a swinging conveyer, of a conveyer structure having an inclined receiving end through which the auger shaft extends to the outside, and a power transmitting device arranged below said inclined end whereby power is transmitted from the driving shaft to the auger shaft.

3. The combination, in a swinging conveyer, of the conveyer structure having an inclined end through which the auger shaft extends to the outside, a pivot shaft arranged perpendicularly below the center of said inclined end, a driving shaft arranged below said pivot shaft, and gears mounted on said shafts and below said inclined end whereby said auger shaft is driven through said gears from said driving shaft.

4. The combination, in a swinging conveyer, of the conveyer structure, a driving mechanism including a pivot shaft, a head on the lower end of said pivot shaft, and a bracket upon which said head rests, the contacting surface of said head being substantially of the form of a zone of a globe,



5. The combination, in a swinging conveyer, of the conveyer structure, a driving mechanism for the auger of said conveyer, a bracket supporting said driving mechanism, a bearing therein for the pivot-shaft head, and a keeper whereby said pivot-shaft head is held from escaping from said bearing.

6. The combination, in a swinging conveyer, of the conveyer structure, a pivot shaft, a driving shaft, gears mounted on said several shafts whereby power is transmitted from one to the other, and a bracket adjustably secured to the elevator leg whereby said gearing and elevator are supported.

7. The combination, in a swinging conveyer, of the conveyer structure, the driving mechanism, supporting devices therefor whereby the driving end is supported, said driving device consisting of gearing arranged centrally below the receiving end of said conveyer structure which is inclined to provide room therefor, and a strut and a flexible support for carrying the outer end of said conveyer structure.

8. The combination, in a conveyer, of the conveyer structure, the driving mechanism therefor, a bracket supporting said driving

mechanism, a countershaft, a bracket supporting said countershaft, and a power transmitting device connecting shafts carried by said two brackets whereby power is transmitted from said countershaft to said conveyer driving mechanism.

9. The combination, with a conveyer, of a countershaft therefor, a bracket for said countershaft both circumferentially and longitudinally mounted on the elevator leg, and self-adjustable bearings for the countershaft carried by said bracket.

10. The combination of an elevator, a conveyer, a countershaft from which both said elevator and said conveyer are driven, and a bracket adjustably mounted on said elevator and provided with automatically adjustable boxes for said countershaft.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this 31st day of March, A. D. one thousand nine hundred and six.

CHESTER BRADFORD. [L. s.]

Witnesses:

ARTHUR M. HOOD,  
THOMAS W. McMEANS.