

J. W. HILDEBRAND.
FEEDER.

APPLICATION FILED FEB. 25, 1908.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 1.

956,093.

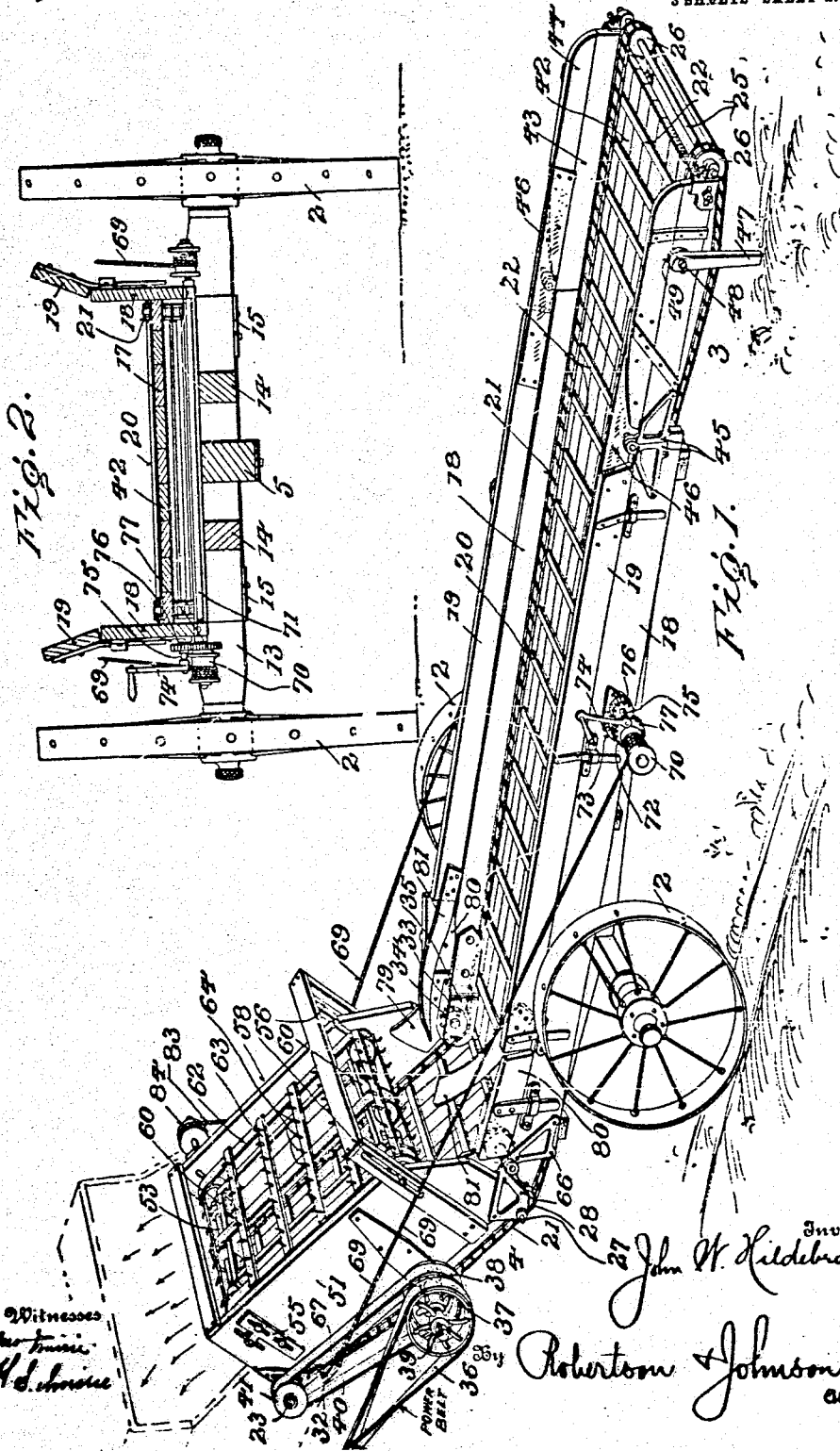


Fig. 2.

Fig. 1.

Witnesses
per
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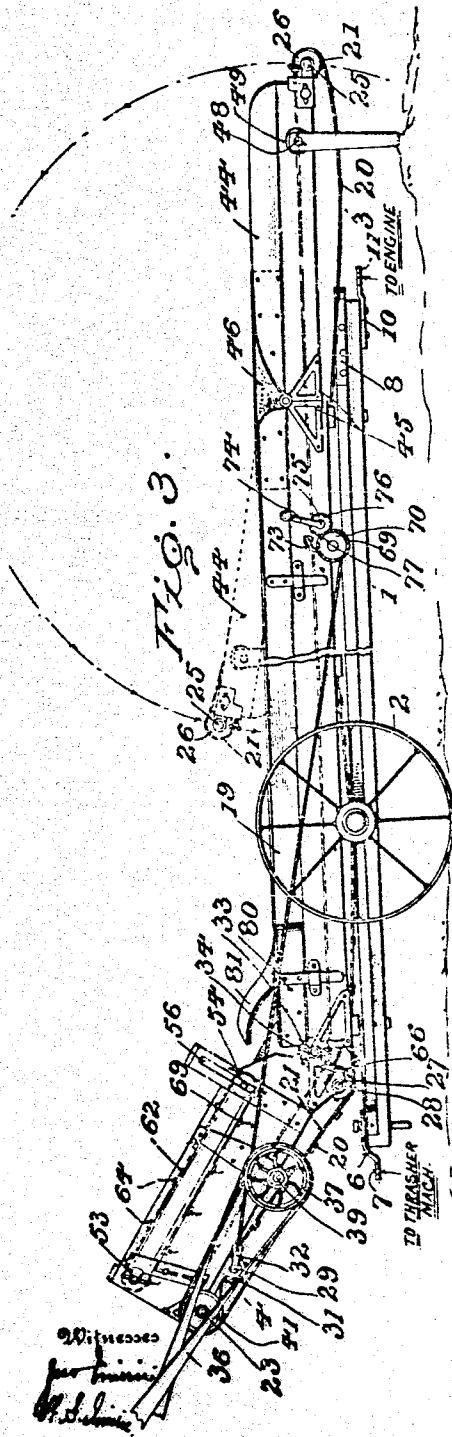
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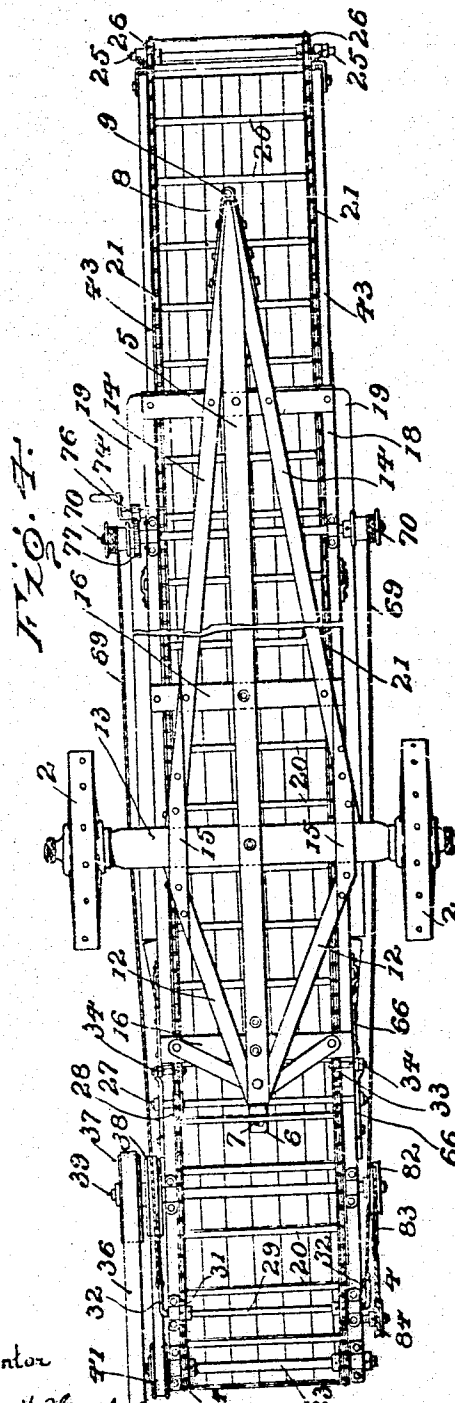
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Inventor

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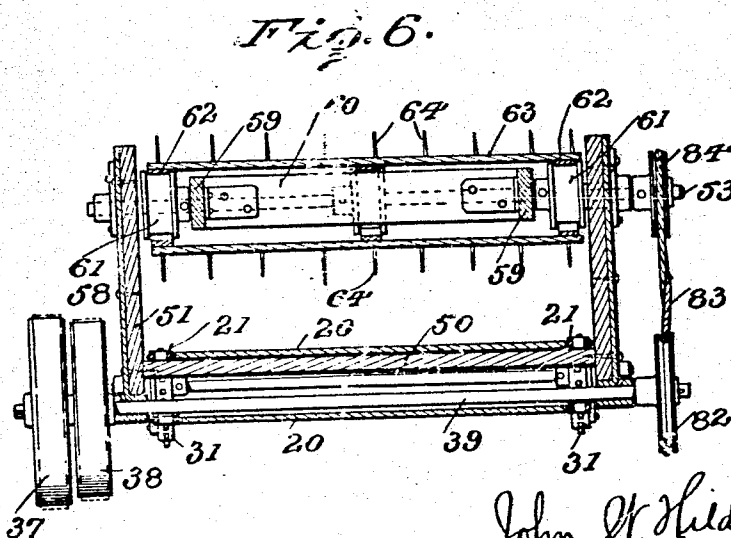
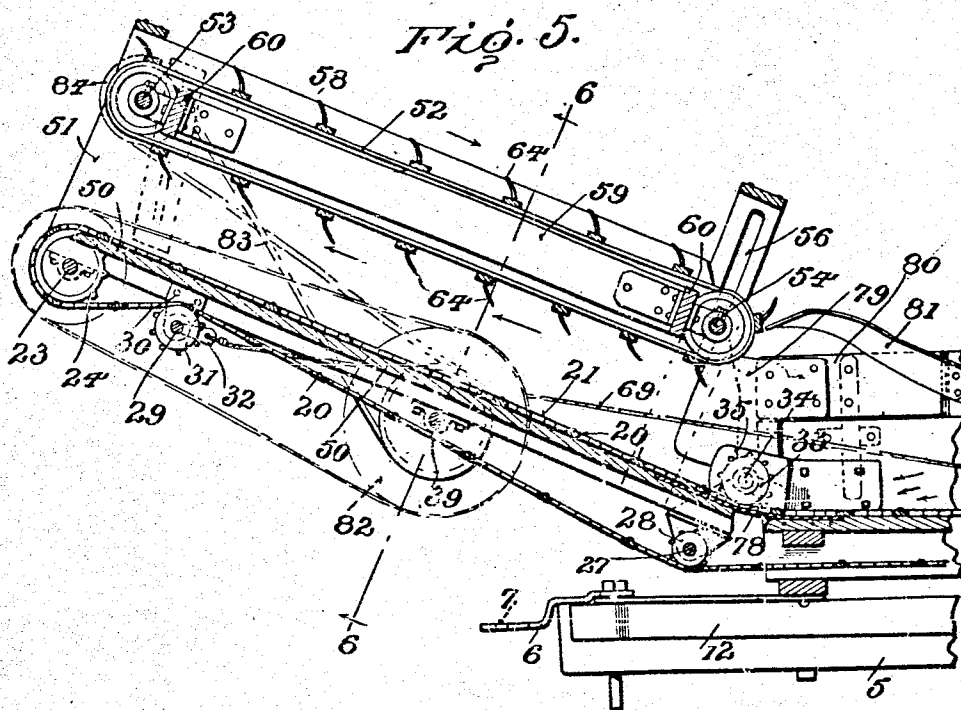
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3 SHEETS—SHEET 3.

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UNITED STATES PATENT OFFICE.

JOHN W. HILDEBRAND, OF RUSSELL, KANSAS.

FEEDER.

956,093.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed February 25, 1908. Serial No. 417,693.

To all whom it may concern:

Be it known that I, JOHN W. HILDEBRAND, a citizen of the United States of America, and a resident of Russell, in the county of Russell and State of Kansas, (whose post-office address is Russell, Kansas, aforesaid,) have invented certain new and useful Improvements in Feeders, of which the following is a specification.

My invention relates to feeders and is designed for use especially with threshing machines, being arranged for permanent connection therewith when in use so as to constitute also a continuous reach or hitch between the threshing machine and the traction engine or other hauling means. My feeder is connected at its rear or delivery end with the machine and at its front end with the engine, from which it may be readily disconnected.

The special features of my construction will be hereinafter more fully described.

My invention in its preferred embodiment therefor consists in the matters illustrated and described herein and set forth in the appended claims.

Referring to the drawings: Figure 1 is a perspective view of my feeder, a part of the threshing machine being indicated in broken lines at the rear thereof. Fig. 2 is a transverse section through the body. Fig. 3 is a side elevation showing the position of disuse of the front section being indicated in dotted lines. Fig. 4 is a bottom plan view. Fig. 5 is a central longitudinal section through the delivery section and the adjacent portion of the body. Fig. 6 is a transverse section on the line 6-6 Fig. 5.

My feeder consists of a body 1 supported on wheels 2. To each end of this body is hinged a folding section, one of these sections 3 being the front or preliminary section and the other 4 being the rear or delivery section. The body 1 is provided with an elongated frame or reach constructed as follows:

5 is a central longitudinal beam the rear end of which has a plate 6 provided with a bolt hole 7 for connection with the threshing machine. The other end of the beam 5 is provided with suitable means as a band 8 bent to conform to the shape of the end of the frame and to form a bolt hole 9 for permitting the connection of the reach with the engine. With this band a plate 10 having a bolt hole 11 registering with the

hole 7 coöperates. This frame is provided with short braces 12 extending rearwardly and inwardly from the axle 13 to the central longitudinal beam 5 and with long braces 14 extending forwardly and inwardly from the axle to the said beam. The plates 15 connect the axle and a member of each pair of braces with a member of the other pair.

The body 1 is supported on cross pieces 16 bolted upon the reach and by the axle 13. This body is provided with a bottom 17 and with sides 18 whose slanting extensions 19 keep the grain in position. The bottom 17 is sufficiently raised above the cross pieces and axle to afford room for the conveyer 20 which extends continuously from end to end of my feeder. This conveyer is of usual construction consisting of chains 21 with cross pieces 22. It is supported by the following means:

23 is a shaft at the delivery end of the feeder provided with sprocket wheels 24. 25 is a similar shaft at the front end of the feeder provided with sprocket wheels 26. 27 is a third shaft carried by the front end of the delivery section and provided also with sprocket wheels 28.

In order to allow for the swinging of the hinged sections of the feeder the chain must be somewhat slack when in the position approaching the horizontal. To take up this slack and to prevent the conveyer from interfering with the threshing machine when the device is in operation, a fourth shaft 29 is mounted near the delivery end of the delivery section. It is supported by bearing plates 30 which may be adjustable, and is provided with sprocket wheels 31 acting on the under side of the chains. These sprocket wheels are not fast to the shaft but are freely rotatable thereon being however held from movement along the shaft. The ends of the shaft 29 are bent at right angles to form arms 32 for a purpose to be explained hereafter.

The conveyer is guided and its upper reach caused to conform to the bottom of the body and to that of the delivery section by idlers 33 mounted near the rear end of the body on pins 34 supported from the body in any suitable manner. It will be apparent that this arrangement makes it possible to maintain the parts in operative relation and yet permit the movement of the delivery section on its hinge. To this end the pins 34 are conveniently those on which the deliv-

ery section turns and the idlers project well beyond the end of the body. Guards 35 which may be curved both from front to rear and from top to bottom so as to present only 5 curved surfaces to the grain protect the idlers and prevent jamming of the grain.

The conveyer is driven from the thresh- 10 41 on the shaft 23 at the rear end of the delivery section. The front section 3 like the body 1 is provided with a bottom 42 and with sides 43. These sides are provided with extensions 44, which when this section is 15 folded back upon the body 1 in the position of disuse are above the tops of the sides 18 within the extensions 19.

45, 45 are hinges whereby the body and section 3 are foldably connected and 46, 46 20 are pieces of flexible material suitably canvas to keep grain from falling out between the body and the front section. The front section is provided with legs 47 freely rotatable on headed pins 48, which are provided 25 with washers 49. These legs in the position of disuse turn by gravity so that they rest on the sides 18 and in the position of use automatically assume the vertical in which position they aid in supporting the 30 front section. The delivery section 4 is also provided with a bottom 50 and sides 51 to retain the grain in position. These sides 51 are sufficiently high to afford room for an upper conveyer 52 mounted on shafts 53, 54, 35 the shaft 53 being mounted in adjustable plates 55 and the shaft 54 being freely movable in the slots 56 which are sufficiently wide to permit this motion. These shafts are connected by a frame 58 consisting of 40 suitable longitudinal pieces 59 and cross pieces 60. Fast to each shaft are pulleys or drums 61 on which run the belts 62 of the conveyer 52, which is of the same type as the conveyer 20 but is provided with toothed 45 cross bars 63, whose teeth 64 point in the opposite direction to that in which the conveyer moves. This construction permits the upper conveyer to move toward and from the main conveyer so as to adapt itself auto- 50 matically to changing conditions. If much grain is being carried through the machine the front end of the upper conveyer rises, if little it drops by gravity. This prevents clogging and enables the machine automatic- 55 ally to restore normal conditions. The delivery section is connected with the body 1 by hinges 66, the pivots of the hinges being some distance above the bottom of the body.

The position of the delivery section is 50 controlled in the following manner: The arms 32 of the shaft 29 are provided with eyes 67 to which ropes or cables 69 are connected, the other ends of which are fastened to drums 70 fast to the rotatable shaft 71, 55 mounted for rotation underneath the body

1. This shaft is provided with suitable retaining means as the ratchet 72 and the retaining pawl 73. It is operated manually by crank 74 on stub shaft 75 through gears 76 and 77. In order to prevent the 70 grain from escaping between the body 1 and the delivery section, the bottom of the body is provided with an extension or extensions 78 suitably of metal which close the openings that would otherwise exist between 75 the body and the delivery section, when the apparatus is in use. The body is also provided for a similar purpose with rearwardly extending plates 79 suitably of metal which are supported from the removable portions 80 80 of the sides 18. These sections are preferably arranged diagonally with their rear ends nearer the central line of the conveyer so as to direct the grain inwardly. The body 1 is also provided with deflectors 85 or choke preventers 81 which, as shown, are curved metal strips extending rearwardly and inwardly from the sides 18 of the body in such a way as to direct the grain toward the center and toward the conveying apparatus 90 90 of the delivery section and to prevent it from spilling over the sides of the body. These deflectors are fastened at their forward ends to the slanting extensions 19 of the sides 18 and from these substantially 95 vertical planes curve gradually both lengthwise and crosswise so that their free rear ends are well in from the sides and occupy a plane or planes approaching the horizontal and as shown slanting toward the delivery 100 100 section. It will be apparent that these deflectors will gradually turn the grain toward the center and present it in proper order to the conveying mechanism to the rear of the deflectors. This prevents clog- 105 105 ging. As a precaution, however, the pieces 80 are, as stated, made removable so that surplus grain may be readily reached and removed. The upper conveyer 52 in the delivery section is driven from the shaft 39 110 110 by means of a grooved pulley 82 on said shaft, a crossed rope 83 and a grooved pulley 84 on the shaft 53. It will be noted that the crossing of the rope 83 causes the lower reach of the upper conveyer to travel in the 115 115 same direction as the upper reach of the main conveyer 20, i. e. toward the rear of the apparatus. It will also be observed that the greater part of my feeder is near the ground and therefore much more convenient 120 120 being more readily accessible. For this reason, it may be described as a low down carrier. It serves also the functions of a continuous reach and hitch. By means of the ropes 69, the delivery section may be 125 125 held in the position of use or in the most convenient position for transportation. When my feeder is out of use for the purpose of conveying grain, it acts as a continuous reach from the threshing machine to 130

the traction engine, the front folding section being for this purpose turned back upon the body.

In Figs. 1 and 3 the carrier is shown as slanting toward its front end and it will be apparent that the words "substantially parallel with the ground" which have been used in some of the claims to describe the location of the body are not to be understood as excluding a slanting arrangement.

What I claim as my invention is:

1. In apparatus of the character described, a fixed body substantially parallel with the ground, means for supporting said body, a section hinged to the front end thereof, another section hinged to the rear end thereof, and an endless conveyer extending from end to end of the apparatus and conforming to the upper surface of the substantially horizontal body and to the upper surfaces of the hinged sections.

2. In apparatus of the character described, a body substantially parallel with the ground, means for supporting said body, a section hinged to the front end thereof and foldable upon said body, another section hinged to the rear end thereof, an endless conveyer extending from end to end of the apparatus and conforming to the upper surface of the said body, means for turning the rear section with respect to the body and for retaining it in operative position in different angular positions with respect thereto, and means for driving the conveyer continuing operative when the rear section is so adjusted.

3. In apparatus of the character described, a body provided with wheels, a section hinged to the front end thereof, another section hinged to the rear end thereof, an endless conveyer extending from end to end of the apparatus and conforming to the upper surface thereof, said body constituting a relatively fixed conveyer section, means for maintaining said hinged sections in the desired positions, means for connecting the rear of the body to the machine being fed, and means for connecting the front end of the body to the hauling device whereby the apparatus is capable of use both as a feeder and as a continuous reach.

4. In apparatus of the character described, a delivery section provided with a conveyer, a second conveyer above the first, means for rendering the forward end of said second conveyer freely movable toward and away from the first conveyer, and means unaffected by the relative positions of the conveyers for driving the adjacent reaches of the two conveyers in the same direction.

5. In apparatus of the character described, a delivery section, an endless conveyer passing along the upper surface of the bottom thereof, an endless conveyer above said first conveyer and having its forward end free to

move toward and away from the first conveyer, and positive means for driving both conveyers.

6. In apparatus of the character described, a delivery section having a bottom and sides, an endless conveyer passing along the upper surface of the bottom, shafts mounted in the said sides, an endless conveyer supported by said shafts above the first named conveyer, said sides being provided with slots in which the forward shaft is freely movable, and means unaffected by the relative positions of the conveyers for driving said conveyers.

7. In apparatus of the character described, a body, a delivery section hinged to the rear thereof, an endless conveyer extending along the body and the delivery section, and rearwardly and inwardly extending deflectors on said body adjacent said delivery section, said deflectors being curved gradually both lengthwise and crosswise into a plane or planes approaching the horizontal.

8. In apparatus of the character described, a body, and rearwardly and inwardly extending deflectors curved gradually both lengthwise and crosswise into a plane or planes approaching the horizontal.

9. In apparatus of the character described, an endless conveyer, and deflectors mounted at the sides thereof, extending rearwardly and inwardly at a considerable distance above said conveyers and curved gradually both lengthwise and crosswise.

10. In apparatus of the character described, a body, a delivery section hinged thereto, an endless conveyer, suitable shafts on said delivery section and body for said conveyer, means for causing the upper reach of the conveyer to conform to the upper surface of the body and delivery section, an endless conveyer above the first conveyer, means to prevent material from spilling between the body and the delivery section, deflectors on the body adjacent said delivery section to direct material toward the center of the delivery section, and means for causing the adjacent reaches of the two conveyers to travel in the same direction.

11. In apparatus of the character described, a body, wheels on which said body is mounted, a delivery section hinged to the rear end of said body, means for turning said delivery section with respect to said body and for retaining it in position, an endless conveyer, means for causing the upper reach thereof to conform to the upper surface of said body and delivery section, means for taking up the slack of the lower reach of said conveyer, an endless conveyer provided with teeth slanting away from the direction of its movement, shafts for supporting said conveyer the shaft at the forward end thereof being supported for automatic movement toward and away from the first named conveyer, deflectors on the

body for concentrating material and directing it inwardly toward the center line of the apparatus, and means to prevent material from spilling between the body and the delivery section.

12. In apparatus of the character described, a body having sides, a delivery section hinged to the body, an endless conveyer, means to cause it to conform to the upper surface of said body and section, deflectors on the body for concentrating material portions of the sides of the body adjacent the delivery section and said deflectors being independently removable, and means for driving the conveyer.

13. In apparatus of the character described, a body having sides, a delivery section hinged to the body, an endless conveyer, means to cause it to conform to the upper surface of said body and section portions of the sides of the body adjacent the delivery section being independently removable, plates carried by said independently removable portions to prevent material from fall-

ing out at these points and means for driving the conveyer.

14. In apparatus of the character described, a body provided with sides, a section also provided with sides and hinged thereto, and flexible means attached to the sides of said body and section adjacent the hinged connection to prevent material from falling out.

15. In apparatus of the character described, a body having sides, a section hinged thereto, legs freely rotatable on said section whereby they are adapted automatically to rest by gravity upon the ground to aid in supporting the hinged section when in position of use and on the tops of the sides of the body when in position of disuse to support the hinged section.

Signed by me at Russell, Kansas this 11 day of February 1908.

JOHN W. HILDEBRAND.

Witnesses:

D. H. GOWER,

O. B. HOOVER.