

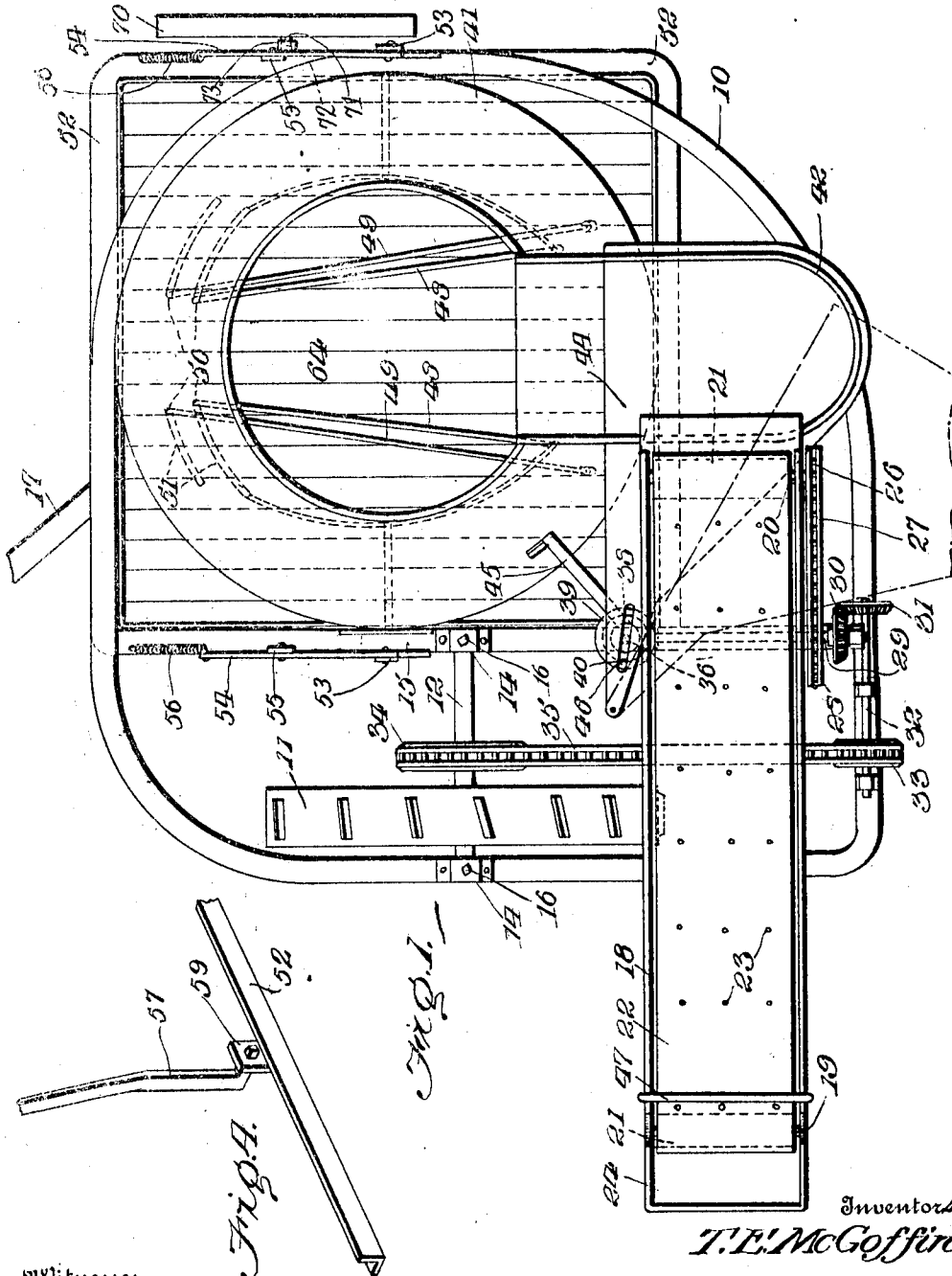
J. H. SLEEPER & T. E. MCGOFFIN.
GRAIN SHOOKER.

APPLICATION FILED SEPT. 9, 1909.

Patented Mar. 19, 1912.

3 SHEETS—SHEET 1.

1,020,521.



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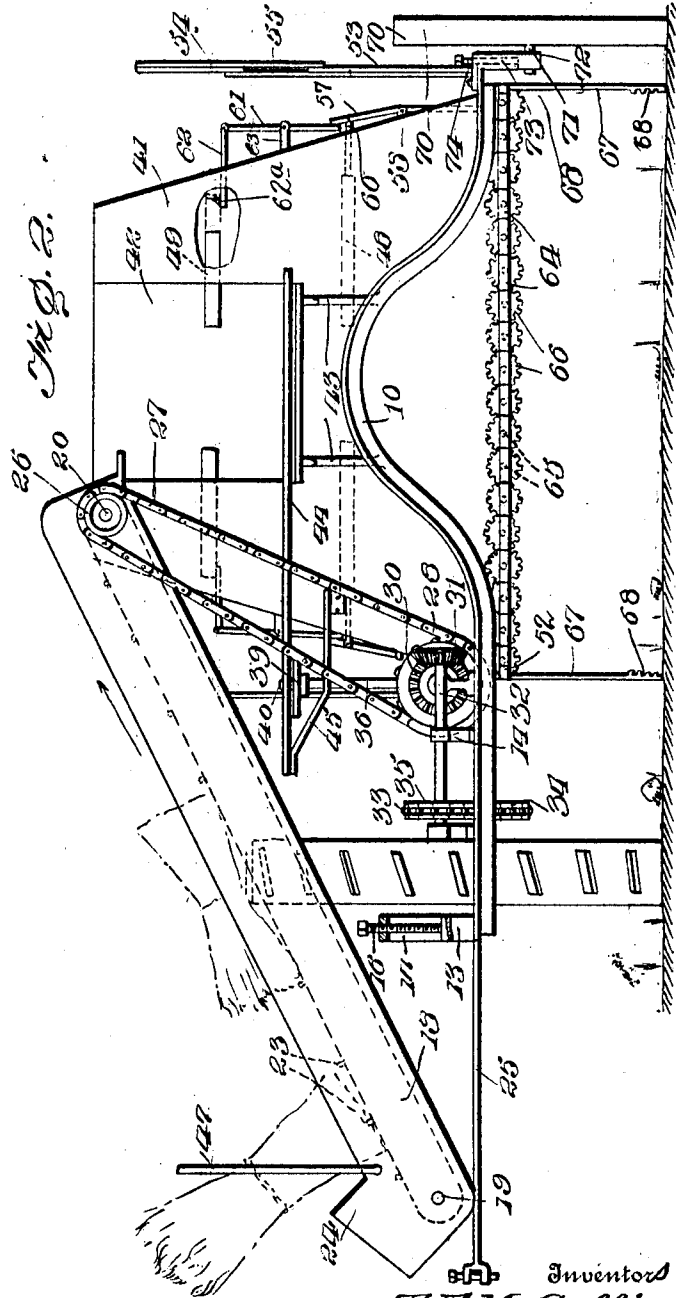
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3 SHEETS—SHEET 2.



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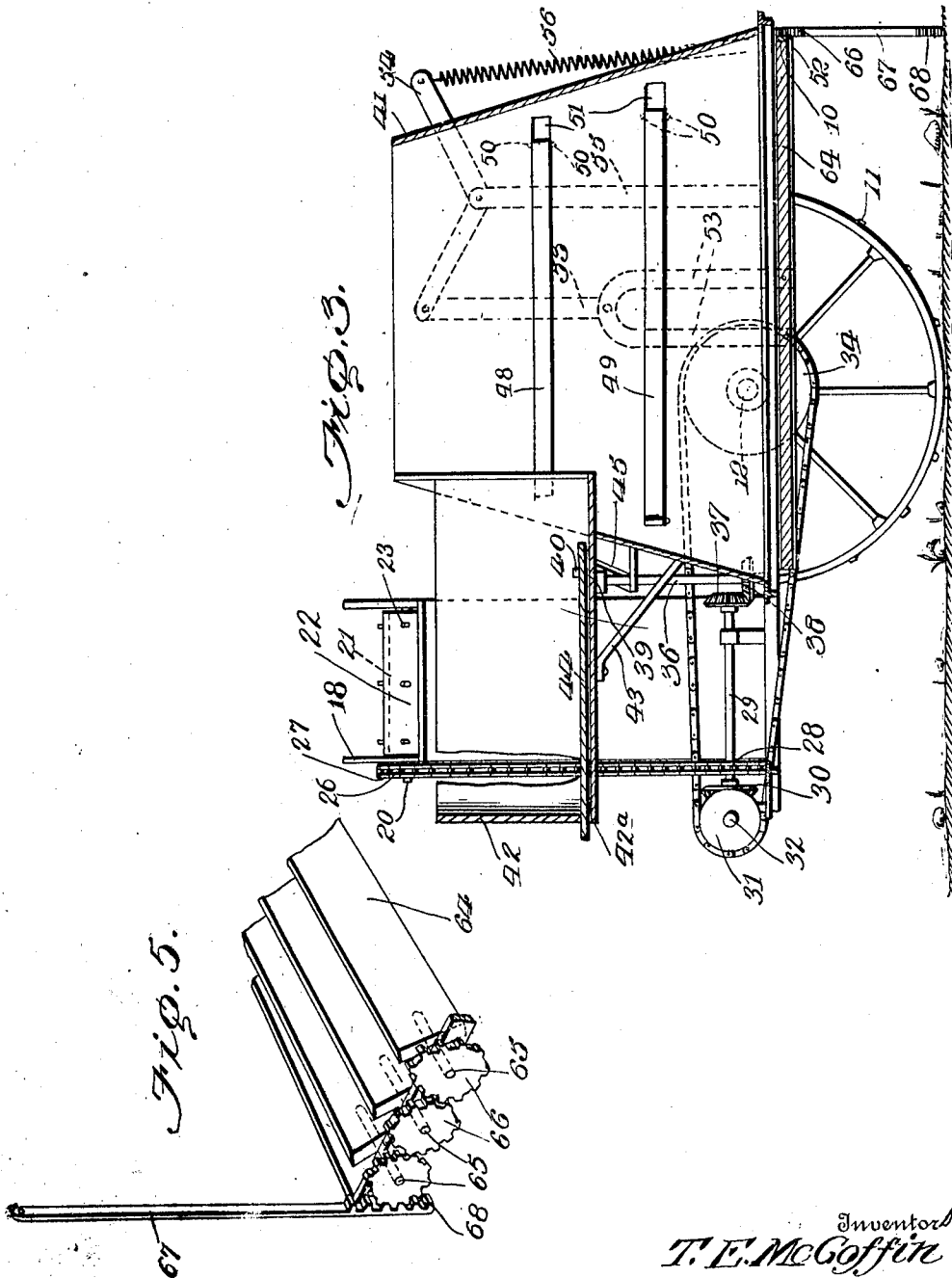
GRAIN SHOCKER.

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3 SHEETS-SHEET 3.

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UNITED STATES PATENT OFFICE.

JOHN H. SLEEPER AND THOMAS E. MCGOFFIN, OF WEATHERFORD, OKLAHOMA.

GRAIN-SHOCKER.

1,020,521.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed September 9, 1909. Serial No. 516,893.

To all whom it may concern:

Be it known that we, JOHN H. SLEEPER and THOMAS E. MCGOFFIN, citizens of the United States, residing at Weatherford, in the county of Custer and State of Oklahoma, have invented certain new and useful Improvements in Grain-Shockers, of which the following is a specification.

This invention relates to grain shockers, and refers particularly to a machine which is adapted for attachment to a self binder.

An object of this invention is to provide means for collecting bundles from the binder and forming the same into shocks when they are deposited from the packing chamber of the machine.

The invention has for another object the provision of a machine of this character in which the bundles are caught as they fall from the binder and are carried into a suitable hopper or the like for the reception of the bundles. From the hopper they are fed by the packer into a suitable chamber or receptacle from whence they are deposited or dumped upon the disposing of a predetermined number of the bundles in the chamber.

A further object of this invention is to construct a machine of this character which comprises but few operative parts which are dependent upon the movement of the machine and not upon auxiliary power and which are so arranged and disposed that the mechanism will operate positively and will not become choked or blocked during the operation.

The invention has for a still further object the provision of a shocker of this character which is provided with means whereby the bundle which is deposited in the same is so turned as to be fed butt end foremost into the packing chamber. By this arrangement the bundles are in position to be placed upon the ground when deposited from the sectional bottom formed in the packing chamber.

For a full understanding of the invention and the merits thereof, and also to acquire a knowledge of the details of construction and the means for effecting the result, ref-

erence is to be had to the following description and accompanying drawings, in which;

Figure 1 is a top plan view of the complete stacker; Fig. 2 is a rear elevation of the same; Fig. 3 is a side elevation of the stacker, the same being disclosed partly in section; Fig. 4 is a detail view of a latch and eye employed; Fig. 5 is a detailed perspective view of the sectional bottom and means for opening the same.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring specifically to the drawings in which is disclosed one embodiment of the invention, the numeral 10 designates a frame which is of substantially rectangular form, being preferably made from metallic beams in order to rigidly support the improved mechanism which will be hereinafter set forth. At one side of the frame 10 a traction wheel 11 is mounted which is rigidly disposed upon a drive shaft 12 journaled at its opposite ends in bearings 13 mounted in vertical guides 14 arranged in registered relation upon one side of the frame 10 and upon a longitudinal beam 15 mounted within the frame 10 and spaced inwardly from the side of the same. The bearings 13 are adjustably disposed within the guides 14 by means of threaded bolts 16 which are disposed through the upper ends of each of the guides 14 and engaged against the upper faces of the bearings 13. This construction forms a rest for the bearings 13 and permits of the vertical adjustment of the frame 10 to accommodate the same to self binders of various heights. The forward end of the frame 10 is provided with a tongue 17 extending forwardly and inwardly from the frame 10 where it is secured to the self binder, (the binder not being disclosed in the drawings as it forms no part of this invention).

Upon the rear end of the frame 10, and at the inner side thereof, a conveyer is mounted which comprises a channeled member 18 in the opposite ends of which are

journaled shafts 19 and 20 carrying rollers 21 which support an endless belt 22 provided in its outer face with pluralities of spurs 23. The conveyer is provided with a receiving spout 24 at its lower end which is positioned adjacent to the outlet chute of the self-binder, and is retained in such relative position through the medium of a connecting bar 25 extending from the frame 10 beneath the conveyer and secured in any suitable manner to the self binder. The shaft 20 extends beyond the rear side of the conveyer, and carries upon its rear extremity a sprocket 26 over which passes a chain 27. The chain 27 depends from the sprocket 26 and passes over a large sprocket 28 mounted upon a jack-shaft 29 journaled longitudinally in the rear end of the frame 10. The jack-shaft 29 is provided upon its rear extremity, and outwardly beyond the sprocket 28 with a bevel gear 30 meshing with a second bevel gear 31 carried upon a stub shaft 32 arranged transversely upon the rear end of the frame 10. The stub shaft 32 receives motion from the main drive shaft 12 through the medium of sprockets 33 and 34 intercommunicating through a chain 35.

The jack-shaft 29 extends beneath the channeled member 18 in longitudinal alignment over the longitudinal beam 15, and is connected to a vertical shaft 36 by the bevel gears 37 and 38. The upper extremity of the vertical shaft 36 is provided with a disk 39 in the upper face of which is eccentrically disposed a wrist pin 40.

The frame 10 is provided with a relatively large frusto-conical receptacle 41, being reduced at its upper extremity, and being disposed adjacent to the forward outer corner of the frame 10. The receptacle 41 is preferably formed of sheet metal which is bent into the desired form, and which is open at its rear side, and at its upper end, to intercommunicate with a hopper 42 disposed thereagainst. The hopper 42 is supported in position adjacent the upper edge of the receptacle 41 by means of suitable bracket arms 43 extending rearwardly from the outer wall of the receptacle 41. The hopper 42 is slotted as at 42^a at its lower end in order to accommodate a horizontally swinging packer arm 44 adapted to feed bundles from the hopper 42 into the receptacle 41. The packer arm 44 is of flattened form and is reduced at one extremity where it is pivotally secured upon the outer end of a supporting arm 45. The arm 45 is carried against the side of the receptacle 41 and extends to the vertical shaft 36, the latter being preferably journaled therethrough, when it is carried toward the inner side of the frame. The reduced end of the packer arm 44 passes directly over the disk 39 and

is provided with a longitudinal slot 46 for the reception of the wrist pin 40. The channel member 18 carries an abutment 47 which is in the form of a bail extending upwardly and transversely from the lower end of the channel member 18, and is of such height as to strike the upper ends of the bundles which are deposited upon the endless belt 22 from the self binder. The bundles are deposited upon the belt 22, butt end foremost and the bail strikes the upper ends of the bundles turning the same downwardly and causing them to be fed upwardly upon the endless belt 22 butt end foremost and to fall into the hopper 42 in an upright position.

Disposed within the opposite sides of the receptacle 41 are two pairs of springs 48 and 49. The springs are hingedly connected at their rear ends to the inner rear wall of the receptacle. The forward ends of the springs 48 and 49 are slidably connected to the front wall of the receptacle 41 through the medium of sliding pins 50, carried by the springs 48 and 49, and projecting into arcuate recesses 51 formed in the front wall of the receptacle. The rear ends of the springs are secured upon the inner wall of the receptacle 41 at the opposite sides of the hopper 42. The springs 48 and 49 converge slightly toward their forward ends in order to yieldingly receive the bundles which are forced from the hopper 42 into the receptacle. The slots 51 receive the pins 50 and prevent the free ends of the springs 48 and 49 from leaving the inner wall of the receptacle 41 and limit the inward movement of the springs when released by the falling of the bundles from the receptacle. The receptacle 41 is provided with a movable bottom comprising a substantially rectangular frame 52 supported upon arms 53 which extend upwardly from the opposite sides of the frame 52 and are pivotally secured at their upper extremities upon the rear arms of bell crank levers 54 which are mounted on standards 55 carried upon the sides of the frame 10. The forward arms of the bell crank levers 54 are provided with springs 56 depending therefrom which are secured at their lower extremities upon the frame 10 to normally retain the bottom frame 52 upwardly against the lower edge of the receptacle 41.

The frame 52 is locked in an upward position by means of latch levers 57 which are pivotally mounted on lugs 58 extending from the opposite sides of the receptacle 41, and having outturned lower extremities to engage through upwardly projecting eyes 59 carried upon the opposite sides of the bottom frame 52. The upper ends of the latch levers 57 are provided with push rods 60 extending through the wall of the receptacle

41 in alinement with the lower springs 48, and are adapted to be struck by the same upon the bowing outwardly of the springs by disposing a plurality of bundles within the receptacle 41. Vertical rods 61 are carried at the sides of the receptacle 41 and are pivotally connected to horizontal rods 62 movable through the sides of the receptacle. The vertical rods 61 are hinged midway of the ends upon ears 63 extending outwardly from the receptacle 41. The rods 62 are arranged in alinement with the upper springs 49 and are provided with upturned lips or shoulders 62^a upon their inner ends to receive and to retain the springs 49 when the same are bulged outwardly by the bundles.

Within the bottom frame 52 are rotatably mounted a plurality of slats 64 supported upon pins 65 longitudinally projecting from the forward ends of the slats 64 and engaging through apertures formed in the forward cross-bar of the frame 52. The pins 65 are each provided with intermeshing pinion 66 to communicate motion between the slats 64. For the purpose of moving the slats 64, in order to open the bottom, rods 67 are depended from the forward corners of the frame 52, and are formed with short racks 68 at their lower ends and upon their inner faces to mesh with the outer pinions 66. The outer side of the frame 10 is adjustably supported upon a wheel 70 which is mounted upon a stub-shaft 71 disposed in a bearing 72. The bearing 72 is slidably disposed in a vertical guide 73 carried upon the frame 10, and is adjustably retained in position by a threaded bolt 74.

The operation of the device is as follows:—The tongue 17 is secured to the forward end of the self-binder, and the connecting rod 25 is secured to the side of the binder adjacent to the outlet chute of the same. As the device is moved, the traction wheel 11 rotates the drive shaft 12, the stub-shaft 32 through the medium of the sprockets 33 and 34 and the chain 35, and the longitudinal shaft 29 through the medium of the bevel gears 30 and 31. The endless belt 22 is also set in motion by the passage of the chain 27 over the sprockets 26 and 28 rotating the shaft 20. The endless belt 22 is moved in such direction as to cause the feeding upwardly of the bundles deposited thereon from the hopper 24 and primarily from the binder. The bundles fall from the binder butt end foremost so as to stand upright upon the lower end of the endless belt 22 and engage with the spurs 23 and are carried upwardly until the upper ends of the bundles strike against the abutment 47. The upper ends of the bundles are thrown downwardly so as to dispose the butt ends of the bundles in the direction of the movement of the belt 22. When a bundle reaches the top of the chan-

nel member 18 the bundle falls into the hopper 42 in an upright position. After the bundle has been deposited in the hopper 42, the packer arm 44 is adapted to move through the bottom of the hopper 42, by the action of the disk 39 and the vertical shaft 36 to force the bundle forwardly into the receptacle 41. The bundle falls upon the bottom of the receptacle 41 in an upright position between the springs 48 and 49, and as the bundles are increased in number the springs 48 and 49 are bulged outwardly, into the curved position which is disclosed in dotted lines in Fig. 1. When the accumulated shock is of a predetermined size the springs 48 strike the push rods 60 and swing the latch levers 57 to release the bottom. Simultaneous with this movement the upper springs 49 engage over the shoulders 62^a of the rods 62 and are held in such position to release the bundles. The weight of the bundles upon the bottom is now such as to overcome the tension of the springs 56 whereby the bottom is permitted to fall. The downward movement of the bottom carries the outer pinions 66 into the path of the racks 68 to rotate the entire train of pinions and to turn the slats 64. When the slats 64 are turned to open the bottom the lower ends of the bundles protrude below the bottom and strike the ground causing the bundles to slide from the frame 52 and to be left upon the field in clustered position. The springs 56 now return the bottom up against the lower edge of the receptacle 41, and the operator now manually swings the latch-levers 57 into engagement with the eyes 59 to lock the bottom in its normal position. When the bundles are released from between the springs 48, and the springs 49, the springs 49 are manually released from the shoulders 62^a when they return immediately to their normal contracted positions.

Having thus described the invention what is claimed as new is:

1. A shocker including a frame, an inclined conveyer mounted on the frame, a hopper disposed upon the frame beneath the conveyer, a receptacle carried by the frame and having communication with the hopper, the receptacle having a releasable bottom, springs located in said receptacle for engagement with bundles of grain, latch-levers carried by said receptacle and engaging with the bottom, and push-rods carried by said latch-levers for engagement with springs to release said latch-levers upon the expansion of the springs.

2. A shocker including a frame, an inclined conveyer arranged upon the frame to receive bundles therefrom, an abutment located upon the receiving end of the conveyer for turning the bundles, a hopper arranged beneath the delivery end of the con-

veyer to receive bundles therefrom; a receptacle mounted on said frame and having communication with the hopper, the receptacle having a releasable bottom, a packer-arm mounted in said hopper for feeding bundles from the same to said receptacle, latch-levers carried by said receptacle for engagement with the bottom, push-rods carried by the latch-levers and extending inwardly through the sides of the receptacle, springs arranged in the receptacle for engagement, with the push-rods to withdraw the latch-levers from engagement with the bottom, standards mounted on said frame, arms upwardly projecting from the opposite sides of the bottom of said receptacle, bell-crank levers pivoted in the upper ends of said standards and connected to said arms, and springs disposed between the frame and said bell-crank levers for raising the bottom of the receptacle.

3. A grain shocker including a main frame, a receptacle located on said main frame having a releasable bottom normally located therein, releasing means connected to the bottom to drop the same from the receptacle, springs carried by said main frame for normally restoring the bottom to normal position, the bottom of said receptacle comprising slats rotatably mounted in the sides of the receptacle, intermeshing gears carried by the slats, and racks carried by the main frame engaging with the gears to rotate the slats upon the movement of the bottom.

4. A shocker including a main frame, a traction wheel mounted upon the frame, a conveyer carried by the frame, a train of gears disposed between the traction wheel and the conveyer for actuating the latter, a vertical shaft journaled in the frame and having connection to the train of gears, a disk carried upon the shaft, a wrist-pin mounted in the disk, a packer-arm carried by the frame and engaging with the wrist-pin for the reciprocation of the packer-arm, a hopper carried by the frame beneath the delivery end of the conveyer and having an opening in the lower end thereof to receive the packer-arm, a receptacle arranged upon the frame and having communication at its upper end with the hopper, and depositing means arranged within the receptacle to release shocks of predetermined size.

5. A shocker including a frame, a receptacle carried on the frame to receive bundles and having a bottom locked therein, releasing means disposed in the frame for the bottom to drop the same and adapted to be engaged by the bundles, the bottom having a plurality of slats, and opening means carried by the frame to open the slats by the movement of the bottom.

6. A grain shocker including a main

frame, a receptacle carried in the main frame and having a releasable bottom, the bottom comprising a horizontal U-shaped frame open at its rear end, a plurality of longitudinally disposed revolving slats, gears carried upon the forward end of the slats in intermeshed relation, racks depending from the main frame and engaging with the outermost gears to turn the slats, releasing means carried by the frame and having connection to the bottom to drop the same, and a lifting mechanism disposed upon the frame and having connection with the bottom to raise the same when the shock is released from the bottom.

7. A shocker including a frame, an inclined conveyer mounted on said frame, a hopper mounted adjacent to the upper end of the conveyer, a receptacle disposed on said frame and communicating with said hopper, a packer carried by said frame for feeding bundles from the hopper to said receptacle, a releasable bottom disposed in the receptacle, and springs located in said receptacle for engagement with the bundles and having connection with the bottom to release the same by the pressure of the bundles.

8. A shocker including a frame, an inclined conveyer mounted upon the frame, a hopper carried by said frame beneath the upper end of the conveyer, a receptacle disposed upon said frame in communication with said hopper, and means carried by said frame for disposing bundles on the conveyer with butts toward the upper end of the conveyer, said receptacle having opening slats adjustably mounted in the bottom thereof.

9. A shocker comprising a frame, wheels adjustably mounted on the frame, an inclined conveyer located on the frame for receiving bundles, a hopper carried by the frame and arranged beneath the delivery end of the conveyer, a receptacle disposed upon the frame and communicating with said hopper and having a releasable bottom, springs mounted longitudinally within the receptacle at the opposite sides of the hopper, supporting means disposed between the springs and the bottom, means connected to the bottom and actuated by said springs for releasing the bottom, and springs carried by the frame and connected to the bottom for restoring the same to normal position after the bundles have been delivered.

10. A grain shocker comprising a frame, a conveyer upon the frame adapted to receive bundles, a hopper carried by the frame in register with the delivery end of the conveyer, a receptacle carried by the frame having communication with the hopper and being provided with a releasable bottom, retaining means carried in the receptacle for engagement with the bottom and adapted to

release the same upon the disposition of a
shock of predetermined size within the re-
ceptacle, the bottom comprising a horizontal
frame provided with a plurality of longi-
tudinal slats having intermeshing gears
5 upon their ends, and racks carried within
the main frame for engagement with the
outer of the gears upon the movement of
the bottom.

In testimony whereof we affix our signa- 10
tures in presence of two witnesses.

JOHN H. SLEEPER. [L. S.]
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Witnesses:

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