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H. G. KIDDER.
GRAIN SHOOKER.
APPLICATION FILED DEC. 27, 1909.

Patented July 4, 1911.

4 SHEETS—SHEET 1.

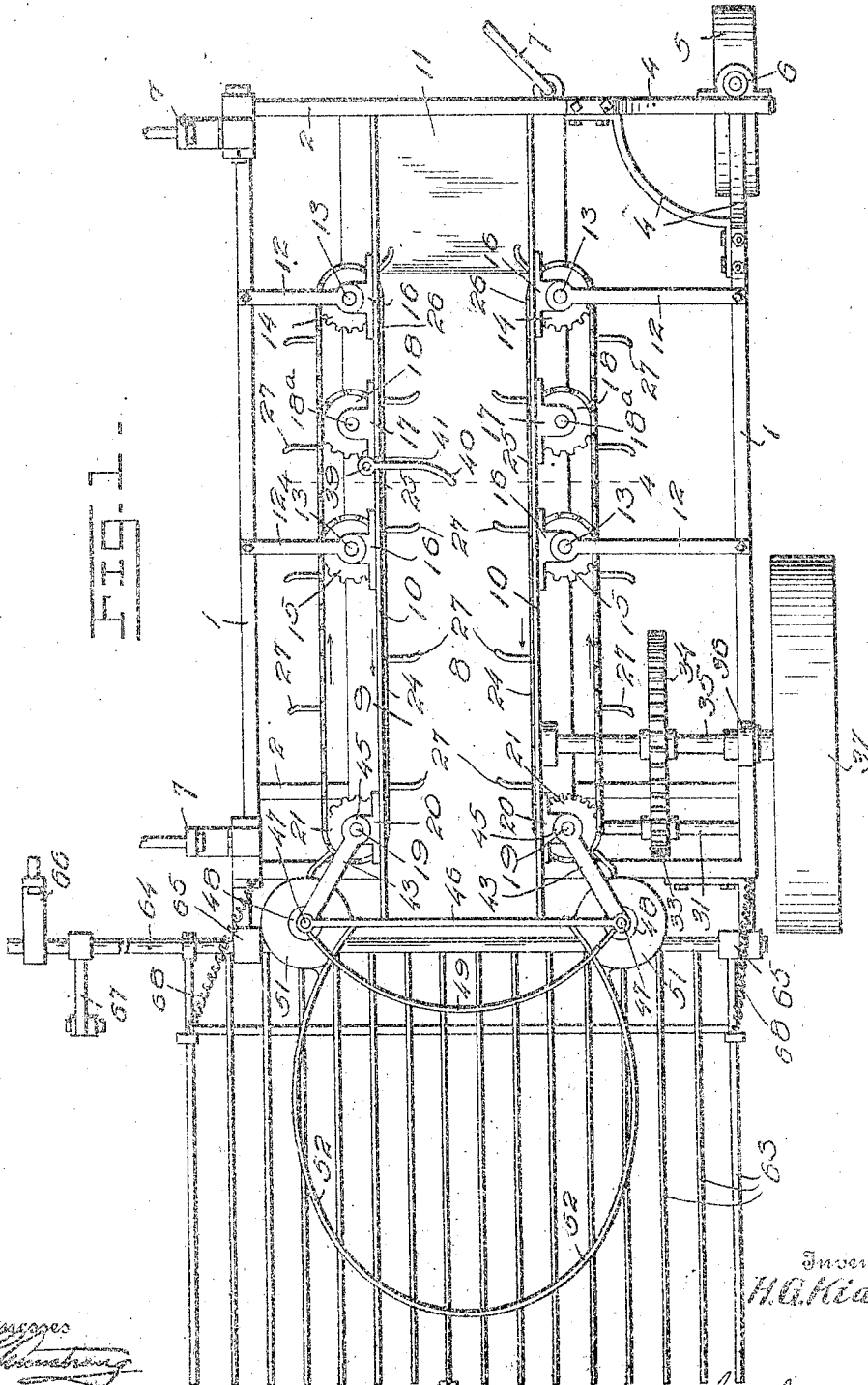


FIG. 1

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4 SHEETS-SHEET 2.

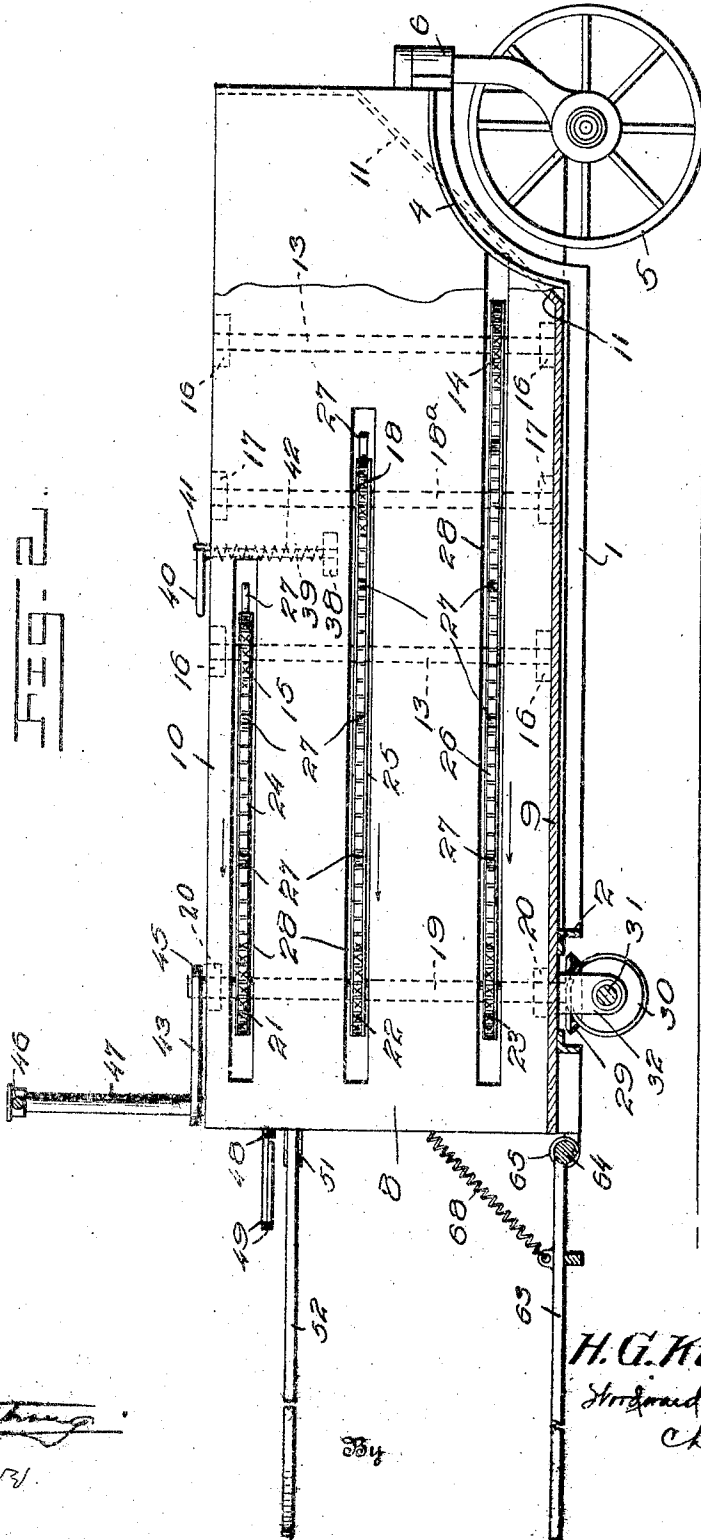


FIG. 2.

Witnesses
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4 SHEETS-SHEET 3.

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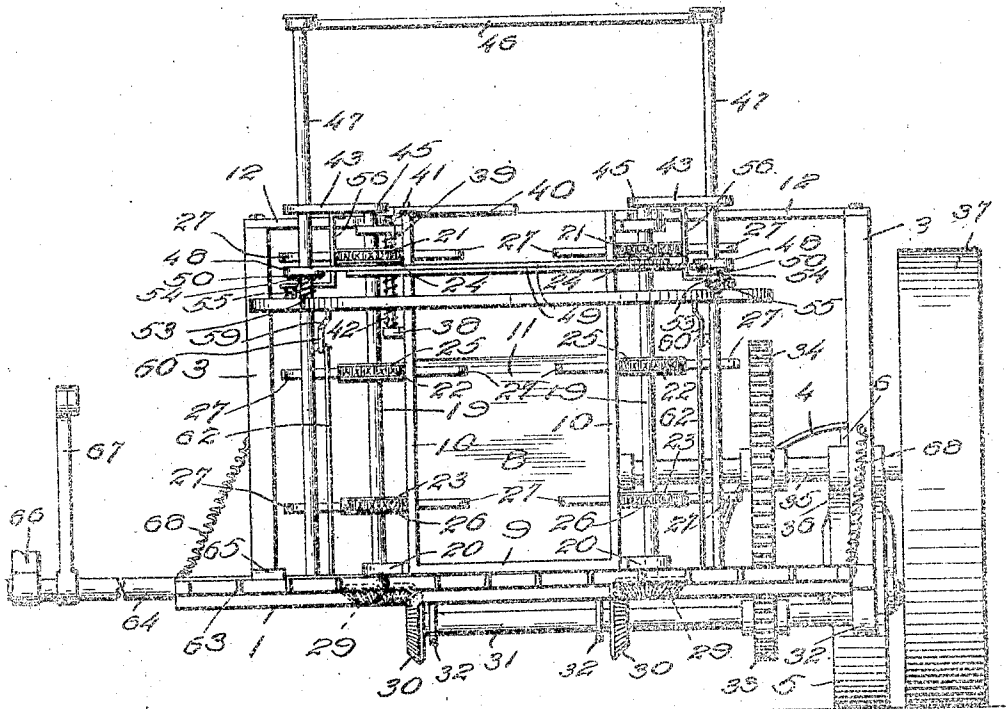


FIG. 1.

FIG. 6.

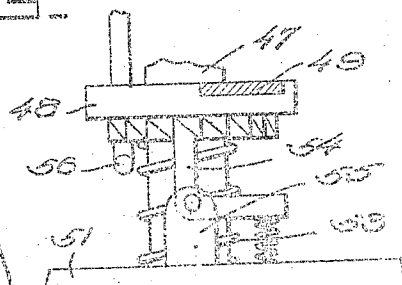
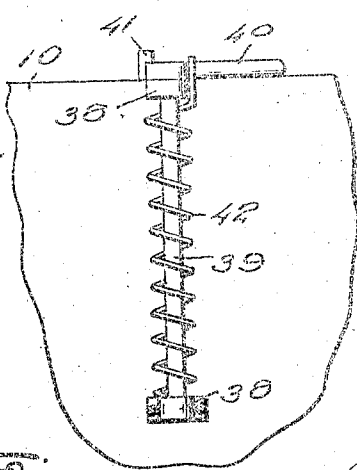


FIG. 7.

Witnesses
[Signature]
M. L. Lorr

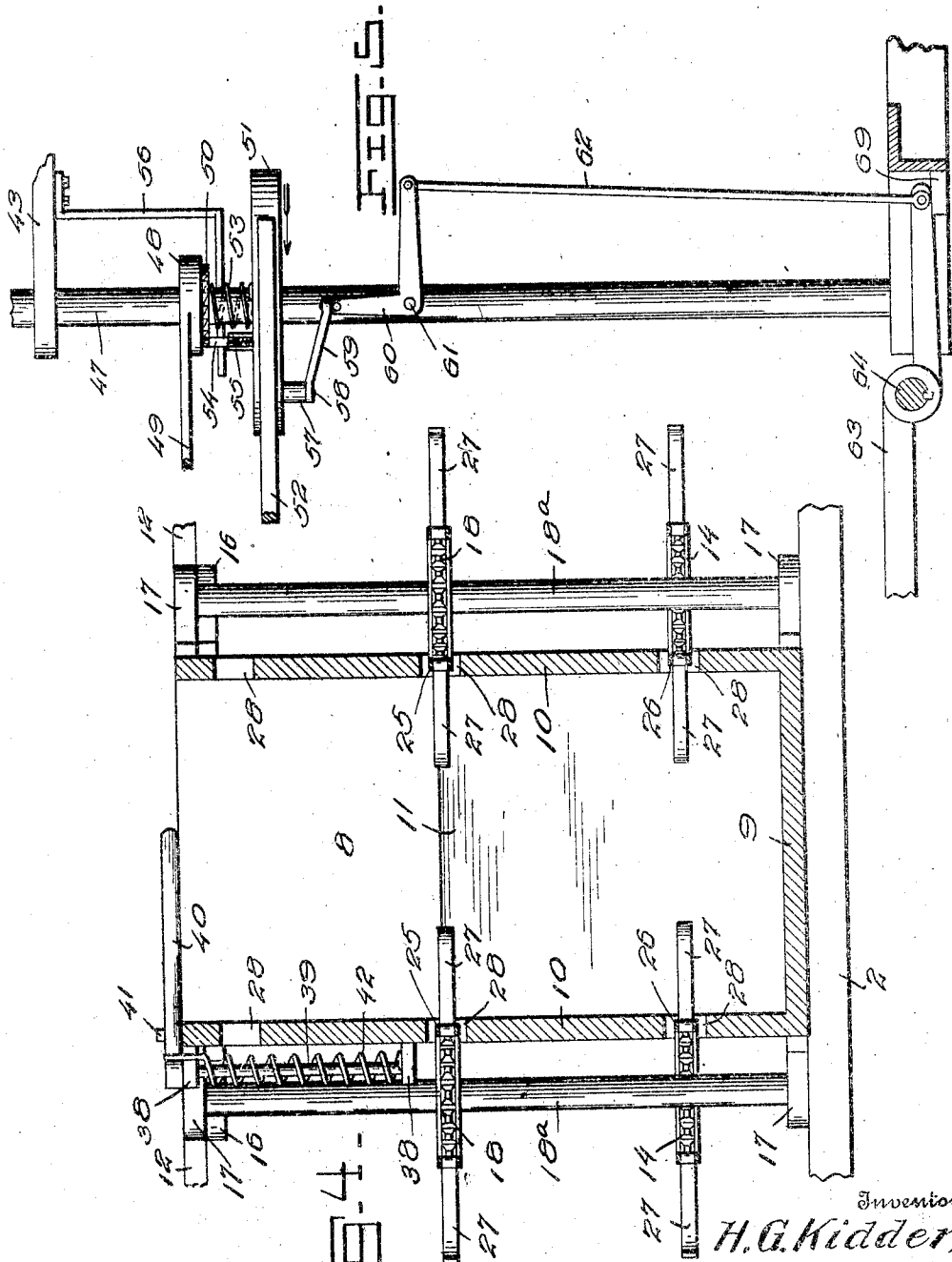
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4 SHEETS—SHEET 4.

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FIG. 4

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UNITED STATES PATENT OFFICE.

HARRY G. KIDDER, OF HOLDREGE, NEBRASKA.

GRAIN-SHOCKER.

996,930.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed December 27, 1909. Serial No. 535,071.

To all whom it may concern:

Be it known that I, HARRY G. KIDDER, a citizen of the United States, residing at Holdrege, in the county of Phelps and State of Nebraska, have invented certain new and useful Improvements in Grain-Shockers, of which the following is a specification.

This invention relates to certain new and useful improvements in grain shockers.

10 The object of my invention is to provide an improved mechanism for forming shocks from sheaves as they are discharged from the binder and place same in an upright position on the ground.

15 Another object is to provide a novel mechanism for standing the sheaves in upright position on their butt ends.

20 Another object is to provide a novel mechanism for simultaneously dumping the shock forming platform and opening the encircling arms.

25 A still further object is to provide means for closing one pair of encircling arms prior to the raising of the shock-forming platform.

30 With the above and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

35 In the drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a plan view of my machine, Fig. 2 is a side elevation partly in section of my machine, Fig. 3 is a rear elevation. Fig. 4 is a section along the line 4-4 of Fig. 1 looking forward. Fig. 5 is a detail view of the arm extending mechanism. Fig. 6 is an enlarged detail view of the trip arm mechanism. Fig. 7 is a view of the trip arm mechanism, taken at right angles to Fig. 5, looking toward the right in said figure.

45 Referring to the drawings 1 represents suitable frame work for supporting my shocking mechanism, provided with cross beams 2 and uprights 3. The frame work 1 is arched at the forward end and corner farthest removed from the binder as at 4

for the reception of the supporting wheel 5 55 which is connected to the frame work by means of swivel bearings 6. On the opposite side from the wheel 5 are attached hinged brackets 7 which join the shocker with the binder. Said binder constituting 60 no part of my invention, is not shown.

Centrally positioned in my shocking mechanism and extending from front to back of same is the trough 8, composed of a bottom 9, preferably of steel, and sides 10. The 65 bottom 9 is inclined at the forward end as at 11. Extending inwardly from the sides 1 of the frame and toward the sides 10 of the trough are the brackets 12, and from the sides 10 toward the sides 1 extend the brackets 16. The brackets 12, 16 are formed with 70 vertical openings to receive the shafts 13, the openings in the inner ends of the brackets 12 registering with those in the brackets 16. Mounted on the shafts 13 are the sprocket 75 wheels 14 and 15.

Mounted midway between the brackets 16 on the sides 10, are the journal brackets 17 in which are journaled the shafts 18 on which are mounted the sprocket wheels 18. The 80 sets of sprocket wheels are in stepped relation to one another as shown in Fig. 2. At the rear end of the trough and on both sides thereof, are the upright shafts 19, which are revolubly mounted in the journal brackets 85 20, attached to the sides of the trough 8. Keyed to the shafts 19, at different levels, are the sprocket wheels 21, 22 and 23, over which respectively pass the sprocket chains 24, 25 and 26, said sprocket chains passing 90 over the sprocket wheels 15, 18 and 14, respectively.

Attached to the sprocket chains equidistant from one another are fingers 27, which are curved backward in respect to the 95 direction of travel of the chains. These fingers are so mounted on the different chains that those on the separate chains will always be vertically disposed in relation to one another. The sides 10 of the trough 8 are 100 slotted as at 28, for the purpose of allowing the fingers 27 to project into the trough. The shafts 19 have keyed to their lower ends the bevel gear pinions 29 which mesh with the bevel gear pinions 30, keyed to the shaft 105 31, which is revolubly mounted in bearings 32 fastened on the under side of the frame-work. Keyed to the shaft 31 is the geared

pinion 33, which meshes with the gear wheel 34, keyed to the shaft 35. Said shaft 35 is revolubly supported in bearings 36 mounted on the framework. The shaft 35 is extended 5 out of the framework on the side opposite the binder and is keyed to the traction wheel 37, said traction wheel serving to impart rotary motion to the various gears and bevel gears, and sprocket chains connected 10 therewith, as the binder moves forward.

Revolubly mounted in suitable bearings 38 on the sides 10 of the trough 8 is a shaft 39 which carries at its upper end a curved arm 40. A pin 41 extending upward from 15 the side of the trough limits the forward movement of the arm 40. Around the shaft 39 is mounted a coil spring 42, one end of which is fastened to one of the bearings 38, the other to said shaft resiliently holding the 20 arm 40 against the pin 41.

In the rear of the framework are beams 43, the ends of which are journaled as at 45, the bearings 45 being supported by the vertical shafts 19. The opposite ends of the 25 beams hold the vertical shafts 47, the other ends of which are fastened in the lower framework of the machine. The shafts 47 are extended vertically and are provided at their upper extremities with a brace beam 30 46. Revolubly mounted on the shafts 47 near the top of the sides 10 are the wheels 48, which have fastened thereon the curved arms 49. One wheel 48 is placed a little higher than the other to allow the arms 49 to overlap. The wheels 48 are provided on 35 their under sides with the ratchet rings 50. Revolubly mounted on the shafts 47, a little below the wheels 48, are other wheels 51 which carry the curved arms 52. The wheels 40 and arms, 48 and 49, are preferably smaller than the wheels and arms 51 and 52 respectively. Coil springs 53, the ends of which are fastened to the wheels 48, the other ends to the wheels 51, are mounted on the shafts 45 47. On the upper side of the wheels 51 are the sockets 55 in which are revolubly mounted the spring held pawls 54 which engage the teeth of the ratchet ring 50 on the wheels 48. Mounted on the under sides of the 50 beams 43 are the L-shaped arms 56, the horizontal portions of which pass between the two pairs of wheels and are so placed that they may impinge against the pawl 54.

On the under side of each wheel 51 is a lug 55 57. Mounted on each lug is a pin 58 on which is revolubly mounted the arm 59 which is pivotally fastened to one arm of a bell crank 60 pivoted on the shaft 47 as at 61. The other end of said bell crank 60 is 60 pivotally attached to the pitman 62, which is in turn pivotally attached to the inner end of the shock platform 63.

The shock platform 63 is keyed to the shaft 64, which is revolubly mounted in 65 bearings 65 on the rear lower framework.

The shaft 64 extends toward the binder and is supported thereon by a bracket 66. A lever 67 is fastened thereto and is provided with a handle or pedal as desired for operation by the workmen on the binder. A spring 70 68 is disposed between the rear upright framework and the outer part of the shock platform for the purpose of assisting in raising said platform. A lug 69 is placed 75 on the inner rear framework for engaging the inner end of the shock platform and arresting its upward movement.

The operation of the machine is as follows: Sheaves are discharged from the binder directly over the trough, their heads 80 pointing to the rear. The heads strike the arm 40 and the butt ends fall into the trough striking the inclined plane 11 and being engaged by the fingers 27 on the chains 26, 25 and 24, in succession. The chains are 85 all traveling in the direction indicated by the arrows, the arrangement pulling the sheaves in upright position on their butt ends and passing them to the rear of the machine. The arm 40 is resiliently held so 90 that when the sheaves press against it in their backward movement it is adapted to give way and allow the sheaves to pass, re-assuming its position projecting at right angles to the sides of the trough. The sheaves 95 are then passed to the rear of the machine and out on the shock forming platform, the fingers 27 releasing the sheaves their curved ends facilitating a free disengagement. As the sheaves on the platform increase in number 100 the arms 49 are forced outwardly thereby and give way against the force of the spring 53, the pawl 54 engaging successive ratchet teeth of the ring 50. The shock thus 105 gradually is passed into the longer arms 52.

When it is desired to dump the shock the lever 67 may be depressed by the machine operator thus rotating the shaft 64, which 110 tilts the shock platform 63 downward. The inner end of the shock platform 63 raises the rod 62, which oscillates the bell crank 60. This presses rearwardly the rod 59 thus revolving the wheel 51, in the direction indicated by the arrow, on the shaft 47 and 115 as the pawl 54 is engaged with the ratchet ring 50, this will also revolve the wheel 48 thus moving the arms 52 and 49 away from each other. The arm 56 is so placed that when the platform is at its lowest level, and 120 consequently the arms 49 and 52 at their greatest spread, it will strike the pawl 54 releasing the wheel 48 from engagement with the wheel 51 and the force of the spring 53 will bring the arms 49 partly together, the raising of the platform by releasing the 125 lever 67, completing the closing of the arms. The forward movement of the binder will pass the shock to the ground at the same time the arms 49 come together over it. The platform will then be raised by the ac- 130

tion of the springs 68, upon release of the lever 67, thus bringing the arms 52 back to their original position.

What is claimed is:

- 5 1. In a grain shocking machine, the combination with a resiliently held retaining arm, located near the forward end of the machine, of a plurality of series of conveyer chains, the forward ends of said chains being disposed adjacent the retaining arm, the chains of each series being horizontal and parallel, the forward ends of the chains in each series being arranged in stepped relation to each other.
- 10 2. In a grain shocking machine, the combination with a resiliently held retaining arm located near the forward end of the machine of a plurality of series of conveyer chains, the forward ends of said chains being adjacent the retaining arm, the chains of each series being horizontal and parallel, the forward ends being arranged in stepped relation to each other, a trough between said chains, the bottom of said trough being inclined upwardly and forwardly at its forward end.
- 15 3. In a grain shocking mechanism, the combination with a movable platform of a

pair of arms disposed thereover and a second pair of arms resiliently connected with the first mentioned arms by means of a coil spring, a ratchet ring, and spring held pawl engaging therewith, a series of levers connecting said arms with said platform, and adapted to open said arms when said platform is tipped.

4. In a grain shocking mechanism, the combination with a movable platform of a pair of arms disposed thereover and a second pair of arms resiliently connected with the first mentioned arms by means of a coil spring, a ratchet ring, and spring held pawl engaging therewith, a series of levers connecting said arms with said platform, and adapted to open said arms when said platform is tipped, means to engage said pawl for release of one pair of arms prior to raising of said platform.

In testimony whereof I affix my signature in presence of witnesses.

HARRY G. KIDDER.

Witnesses:

Q. MCPHERSON,
N. H. KROUQUEST,
J. E. MOORE.