

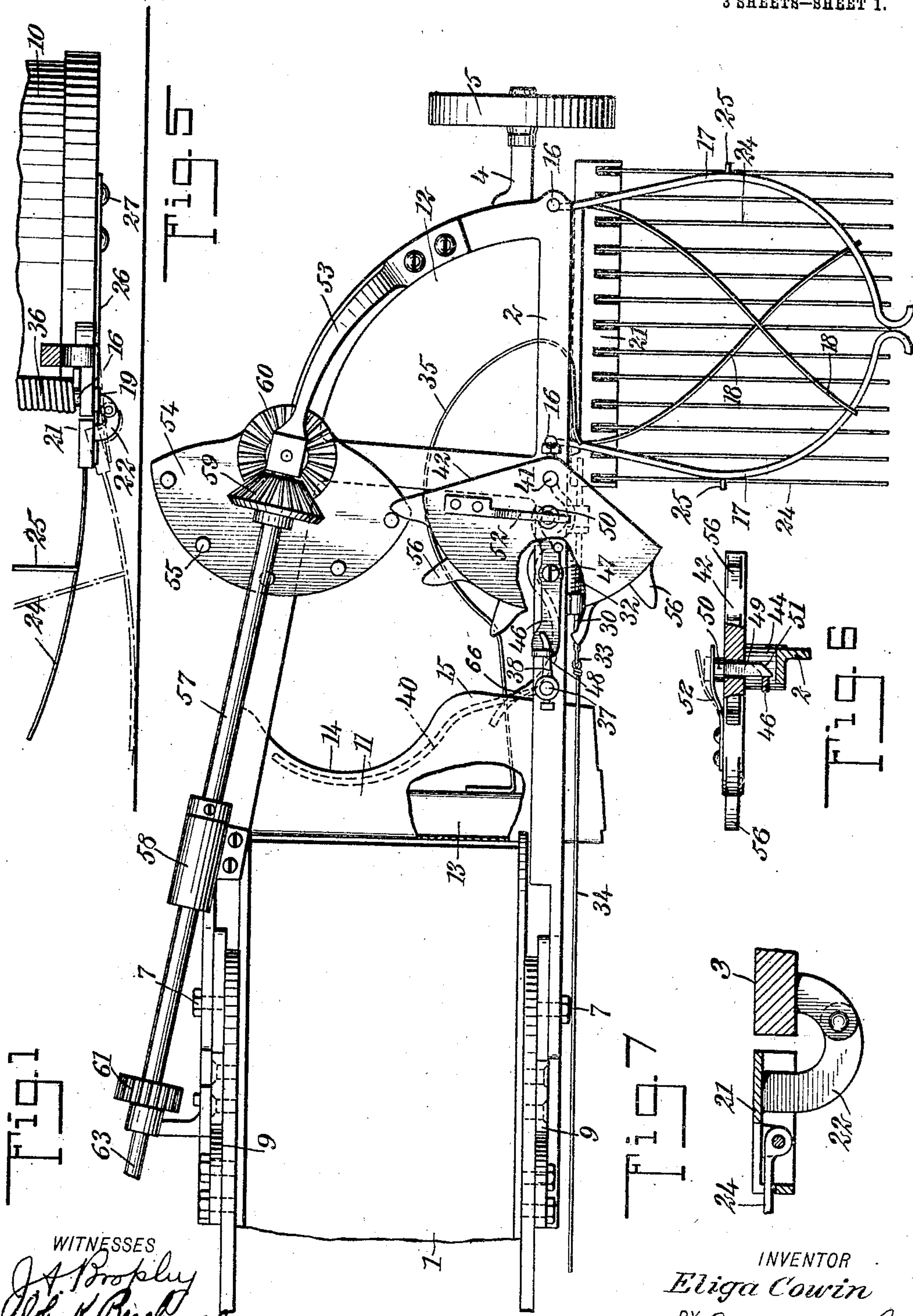
E. COWIN.
GRAIN SHOCKER.

APPLICATION FILED AUG. 13, 1907.

Patented Dec. 22, 1908.

3 SHEETS—SHEET 1.

907,467.



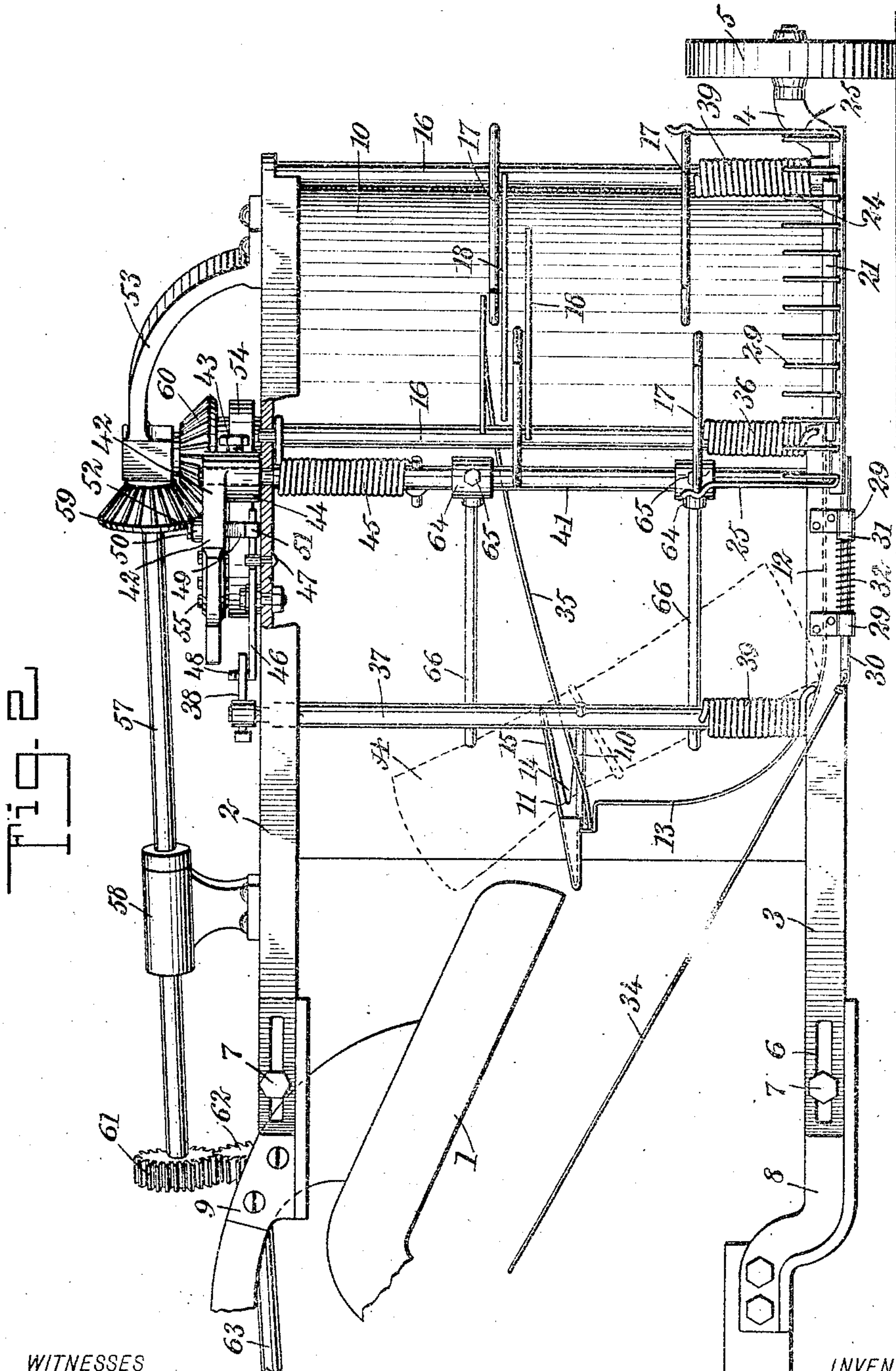
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3 SHEETS—SHEET 2.



WITNESSES

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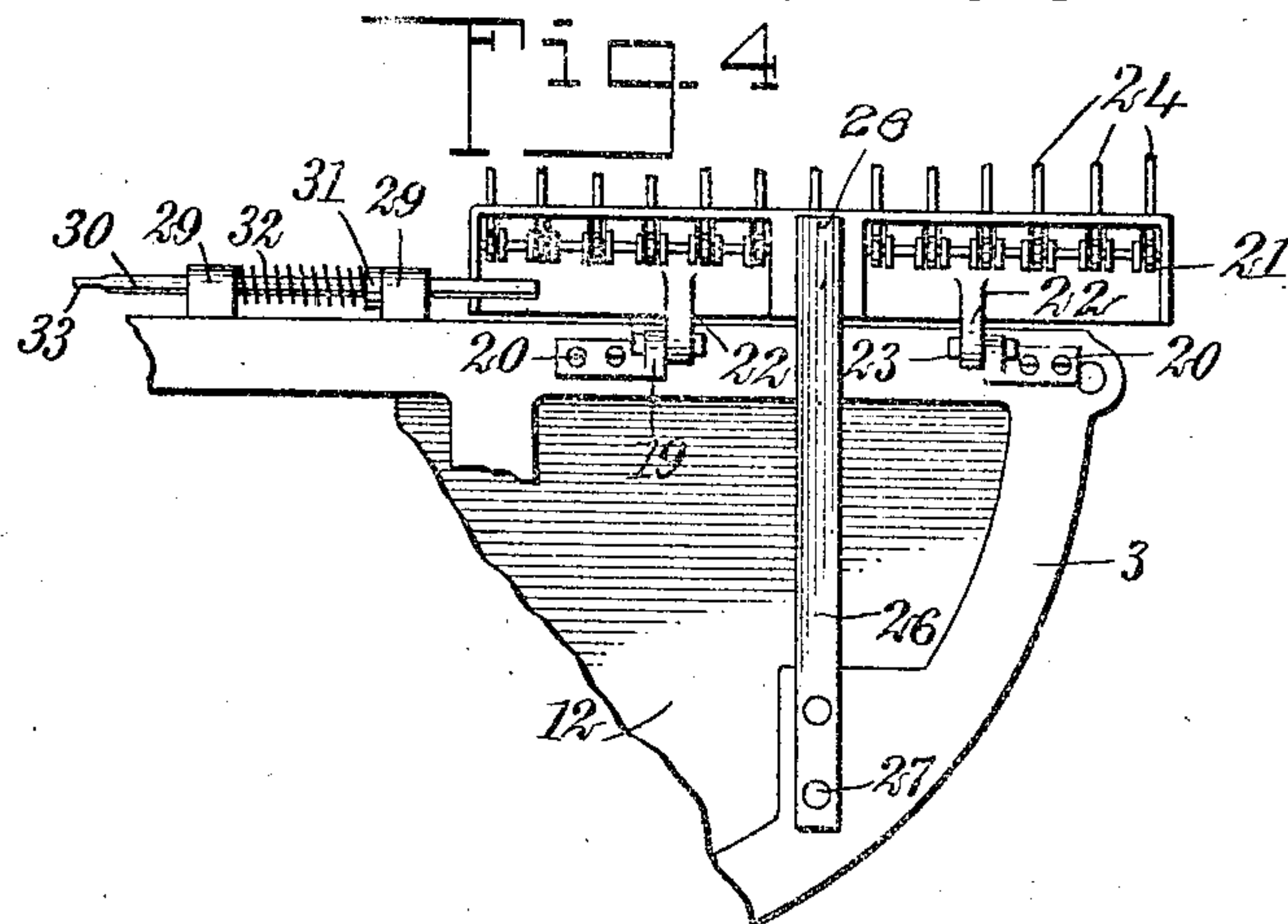
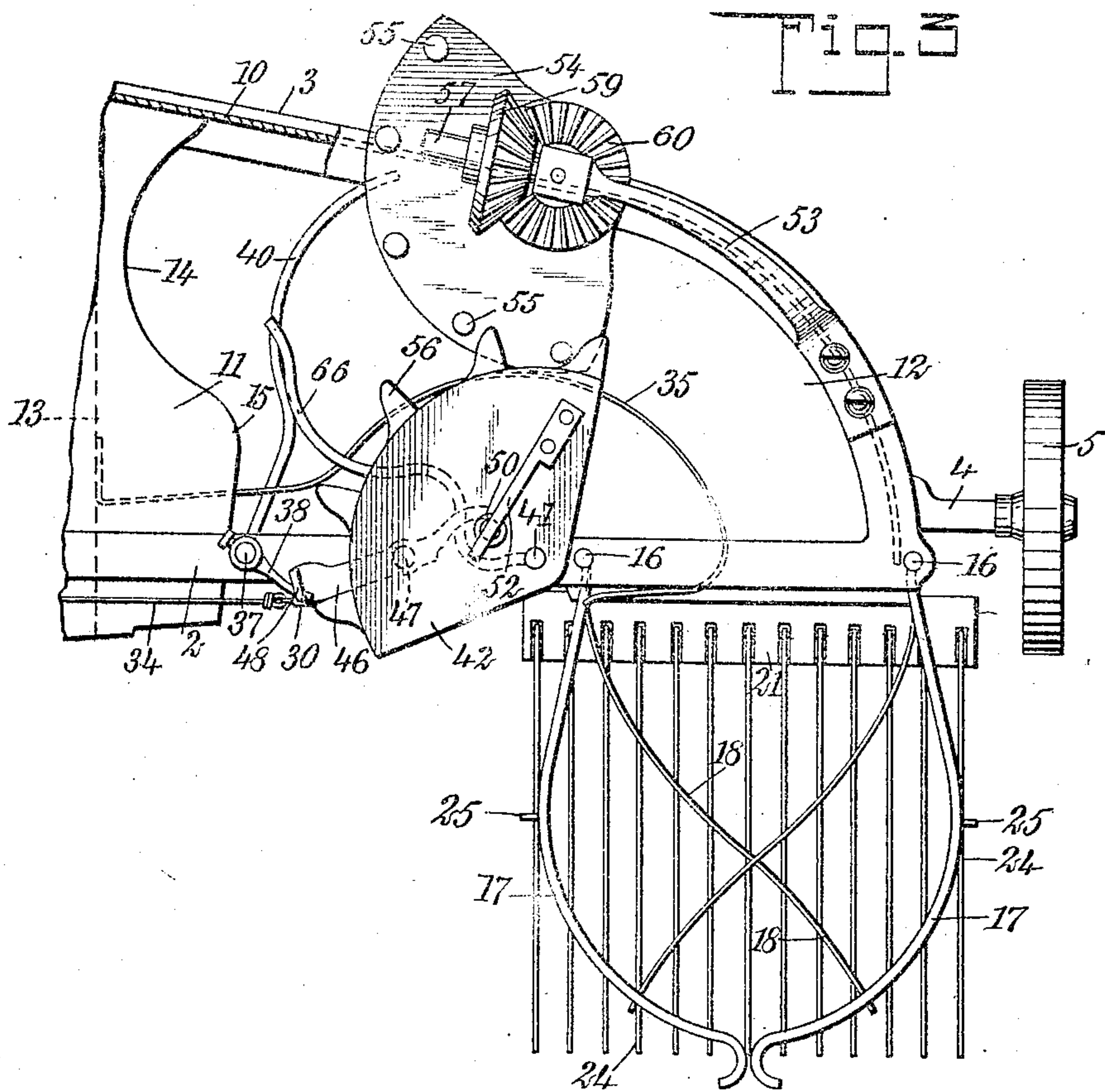
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ELIGA COWIN, OF YORK, NORTH DAKOTA.

GRAIN-SHOCKER.

No. 907,467.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed August 13, 1907. Serial No. 388,302.

To all whom it may concern:

Be it known that I, ELIGA COWIN, a citizen of the United States, and a resident of York, in the county of Benson and State of North Dakota, have invented a new and Improved Grain-Shocker, of which the following is a full, clear, and exact description.

This invention relates to grain shockers, and more particularly to that class of shockers which is used in connection with binders.

The object of the invention is to provide a simple, strong and efficient grain shocker, adapted to be used in connection with a binder, and having means for receiving the bundles of grain from the binder and arranging them upon a carrier to form a shock, and means for releasing the carrier, whereby the shock is positioned upon the ground and the carrier withdrawn from under the same by the forward movement of the machine.

A further object of the invention is to provide a grain shocker adapted to be adjustably connected to a binder and provided with an apron for receiving the bundles from the binder and causing the same to assume an upright position, the bundles being advanced in an upright position to a carrier upon which the shock is formed and from whence the shock is removed to the ground as the machine advances.

A still further object of the invention is to provide a grain shocker adapted to be used in connection with a binder and having actuating mechanism operable from the driving mechanism of the binder.

The invention consists in the construction and combination of parts to be more particularly described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a plan view of the shocker; Fig. 2 is a rear elevation of the shocker; Fig. 3 is a plan view of my invention, showing certain of the parts in positions different from those shown in Fig. 1; Fig. 4 is an inverted plan view of a part of the shocker; Fig. 5 is an elevation of the same part, showing the carrier in dotted outline in the released position; Fig. 6 is a side view of a detail showing parts in cross-section, and Fig. 7 is a detail showing the attachment of the supporting rods to the head.

Before proceeding to a more detailed explanation of my invention it should be understood that the same is applicable to binders of various types and kinds. It is provided with adjustable means for connecting it to a binder so that it can be shifted forward and backward to suit different conditions and different lengths of grain, in a manner similar to that used in shifting the binding mechanism on many modern forms of grain binders. The binders almost uniformly deliver the bundles of grain in a horizontal position. To form a shock it is of course necessary to upright the bundles; for this purpose I provide an apron which receives the bundles and over which the latter pass, so arranged that the bundle in falling from the apron assumes an upright position. The upright bundle is advanced slightly from the apron by means of a swinging arm and is positioned thereby for engagement with other swinging arms which advance the bundle along a narrowing path formed by a wall of the device and a guide member, to the carrier. The bundles are held resiliently in position upon the carrier by means of spring arms which are so arranged that the bundles tend to assume positions of mutual inclination, as is usual in forming shocks of grain and the like. The carrier includes a support having bars or rods which carry the bundles. When a sufficient number of bundles has been advanced to the carrier the latter is manually released and swings about a hinge connection with the shocker, to the ground and slides along upon the surface of the latter as the machine advances. As the support comprises bars or rods merely, the bottom of the shock comes into partial contact with the ground and owing to the friction due to the engagement of the shock with the ground and stubble, the shock slides free of the carrier and assumes a position upon the ground. As soon as the weight of the shock is removed from the carrier the latter, which is spring-pressed, swings into its original position and the catch can then be manually operated again to lock the carrier in this position.

Referring more particularly to the drawings, 1 represents an inclined chute of the binder, along which the bundles pass to the shocker. I provide substantially similar angle-frames 2 and 3 forming the upper and lower portions of the shocker. The frames 2 and 3 each have sides, one of which is curved with respect to the other and joins

the latter at the end of the frame. The frames are preferably of metal, such as wrought-iron. The lower frame 3 at the end, has an axle bracket 4 upon which is mounted a supporting wheel 5. At the ends opposite to the supporting wheel 5 the frames are provided with slots 6 in which are arranged bolts 7 carried by brackets 8 and 9 of the binder. By means of the slots 6 and the bolts 7 the shocker can be adjustably secured to the binder and can be shifted laterally to suit different conditions and different lengths of grain.

The frames are arranged transversely of the direction of movement of the agricultural machine and have the side which is curved and inclined with respect to the other side, arranged toward the forward end of the machine. Between the curved sides of the upper and lower frames is located a wall 10 which may consist of sheet metal, of wood, or of rods of suitable material arranged fairly close together and with the upper and lower ends secured at the upper and lower frames respectively. The curved wall 10 forms one side of a guide-way leading from an apron 11 arranged at the discharge end of the bundle chute 1 to a shock-carrier at the end of the shocker. The apron is preferably formed of sheet metal and is carried at the inner end 13 of a floor 12, the end 13 being curved upward as is shown most clearly in Fig. 2. The apron 11 is inclined to the horizontal and has its lower edge adjacent to the chute 1. The edge of the apron remote from the chute 1, at one side has a recess or cut-away portion 14 and at the other side an extension 15, the latter being nearer the rear of the shocker and remote from the curved sides of the frames. As the bundles A slide down the chute 1 they are received by the apron 11 and pass over the same. The bundles are delivered by the binder with the butts toward the forward part of the binder so that as each passes upon the apron the butt is adjacent to one cut-away portion 14. Thus in passing over the apron the butt end of the bundle falls therefrom while the opposite end is still supported by the extension 15, and thus in falling from the apron the bundle assumes an upright position. It may be found of advantage to provide the apron with spring members or the like, which assist in depressing the butt end of the bundle as the latter passes over the end of the apron. The extended portion 15 of the apron, as appears most clearly in Fig. 2, is raised and the cut-away portion 14 is depressed to assist in up-ending each bundle as it falls from the apron. Thus, the apron is inclined to the horizontal longitudinally and transversely of its length.

Near the end of the shocker remote from the apron 11 are arranged pivoted uprights 16, having the ends carried in suitable bear-

ing openings of the upper and lower frames. Each of the uprights carries a pair of rigid, outwardly-curved arms 17, with the ends disposed toward the corresponding arms of the opposite upright 16, the extremities being outwardly curved. Between the arms 17, and adjacent to the upper arm, each upright 16 has a spring prong 18 extending toward the corresponding prong 18 of the opposite upright 16. The prongs 18 cross each other within the embracing area of the arms 17. Underneath the lower frame member 3, between the uprights 16, are hinge-brackets 19, secured in position by means of bolts or screws 20. A head 21 having ears 22 extending at one side thereof is arranged parallel and adjacent to the rear side of the lower frame member and is pivoted at the hinge-brackets 19 by means of hinge-pins 23 located in suitable openings of the hinge brackets and the ears. The head carries laterally-extending rods 24, constituting a floor, said rods being parallel and upwardly-curved toward the rear ends. Each rod is pivoted to the head and extends through a corresponding slot to permit a limited movement independent of the other rods. Each of the two outermost rods 24 carries a spring clip 25, which engages with an arm 17 and aids in supporting the floor. A spring bar 26 is secured at the under side of the lower frame by means of rivets 27 and has the free end 28 engaging the head 21 at the under sides thereof to hold the carrier floor in the normal position. At the side of the lower frame adjacent to the head 21 are guide sleeves 29, in suitable openings of which is arranged a catch bar 30 having an end adapted to engage the carrier support at the under side to lock the carrier floor in the normal or elevated position. The catch bar 30 has a rigid collar 31 and between the latter and one of the guide sleeves 29 is arranged a helical spring 32 normally projecting the catch bar toward the carrier support. At the end remote from the latter the catch bar has an eye 33 to which is secured a flexible member 34, such as a cord, to permit the catch to be operated from a distant part of the machine. In the normal position, the carrier is held from contact with the ground by means of the catch. When the catch bar is disengaged from the carrier support the weight of the shock upon the latter swings the floor downward on to the ground against the resistance of the spring bar 26. When the carrier is withdrawn from under the shock by the forward movement of the machine, the spring 26 returns the floor upwardly to the normal position and the catch can then be released to allow the spring 32 to project the catch bar to a locking position underneath the head 21. A helical spring 36 is mounted upon each of the uprights 16 near the lower end and has the extremities secured respectively to the uprights 16 and the lower frame 3. The

5 springs 36 hold the uprights in the normal position and resist the movement of the uprights in opposite directions; thus the springs tend to hold the extremities of the arms 17 adjacent, thereby assisting in forming the shock and preventing the accidental displacement of the same from the carrier floor. When the floor is allowed to drop and the engagement of the ground with the base of the shock holds the latter and permits the floor to be withdrawn from under the same, the arms as well as the prongs 18 are forced apart against the tension of the springs 36 as the binder moves forward.

15 The guide-way from the apron 11 to the shock carrier is formed by the curved wall 10 of the shock and a spring guide 35 having one end mounted underneath the apron and the other end disposed substantially parallel to the ends of the frames, the length of the guide being so curved that the guide-way formed between it and the wall narrows somewhat as it approaches the carrier. Thus each bundle is delivered to the carrier at substantially the same point and is thereby forced into engagement with the bundles already held upon the carrier and gradually these are all pushed outwardly upon the latter, against the embracing arms 17 and against the resistance of the spring-holding prongs 18, which causes the bundles to be slightly inclined to the horizontal.

A vertical shaft 37 is carried in suitable bearing openings of the upper and lower frames adjacent to the apron 11. The upper end of the shaft 37 extends beyond the upper frame and has a laterally extending finger 38 for a purpose which will appear hereinafter. Arranged upon the shaft 37 near the lower end is a helical spring 39 having the ends secured respectively to the shaft and the frame 3. The spring 39 holds the shaft in a normal position and tends to resist a movement of rotation thereof. A starting arm 40 is rigidly mounted upon the shaft 37 and extends laterally therefrom to a normal position underneath the lip or edge of the apron. The starting arm is curved to conform substantially to the curve of the edge of the apron. A second vertical shaft 41 is similarly mounted between the upper and lower frame members at the side of the shaft 37 remote from the apron and has the extremity projecting above the upper frame member. The projecting extremity carries a toothed segment 42 held in position by means of a set-screw 43 provided at a supporting sleeve 44 integrally with the segment and mounted upon the end of the shaft. A helical spring 45 is arranged upon the shaft 41 near the upper end, and has the extremities secured respectively to the shaft and the upper frame member. The spring 45 holds the shaft 41 in a normal position and resists a movement of rotation of the shaft. A

lever 46 is pivoted upon the upper frame by means of a suitable pivot pin 47 and has a laterally disposed recessed extension 48 operatively engaging the finger 38. The segment 42 has a vertical opening in which is slidably arranged a tongue 49, having a laterally extended head 50 and a beveled end 51. The tongue is held in position with the head adjacent to the upper face of the segment by means of a spring 52 mounted upon the latter and engaging the head.

A thrust and bearing bracket 53 is suitably mounted upon the upper frame. A shaft is journaled in the bracket 53 and carries a rack segment 54 having rack pins 55 arranged to engage the teeth 56 of the segment 42. A driving shaft 57 is mounted in a suitable bearing 58 arranged upon the upper frame, and has the end carried by the bracket 53. It has at one end a bevel gear 59 engaging a suitable bevel gear 60 rigid with the rack segment 54. At the opposite end, the shaft 57 has a gear wheel 61 in mesh with a gear wheel 62 carried by a shaft 63 of the binder driving mechanism. The arrangement of the driving mechanism is such, that while the binder proper is completing one bundle the parts of the shocker are performing a single cycle of operation; that is, each time a bundle is delivered by the binder one bundle is seized by the shocker and advanced to the shock carrier, thereafter the parts returning to the original or normal positions for the succeeding bundle. This relative operation of the binder and the shocker will depend upon the ratio of the gearing and the methods of connecting the two apparatus. The ratios and connections can of course be varied to suit different circumstances and binders of varying types.

Upon the vertical shaft 41 are arranged two slidable sleeves 64 having set-screws 65 by means of which they can be clamped or locked in position at different points of the length of the shaft 41. The sleeves 64 carry rigid swinging arms 66 which serve to advance the bundles of grain from the apron to the shock carriers. The arms 66 are preferably curved, partially to embrace each bundle, as is shown most clearly in Fig. 1. As the sleeves can be secured to the shaft 41 in a plurality of positions, the height of the arms above the floor can be so regulated as to allow for grain of different lengths.

The operation of the shocker is as follows: As a bundle falls from the apron 11 and assumes an upright position, indicated in dotted outline in Fig. 2 at A, the driving mechanism of the shocker, which is actuated by the driving mechanism of the binder, effects the initial movement of the vertical shaft 41, rotating the latter in a direction away from the apron and against the tension of the spring 45. The movement of the driving mechanism is transmitted to the

shaft 41 by means of the rack segment and the toothed segment. As the latter starts to turn, the tongue 49 which engages an arm of the lever 46 swings the latter about its pivot, thereby in turn revolving the shaft 37 away from the apron 11 and against the resistance of the spring 39. The movement of the shaft 37 swings the starting arm 40 against the bundle and initiates the advancing movement of the same, positioning the bundle suitably for engaging with the swinging advancing arms 66, which of course swing with the shaft 41. The bundle positioned by the starting arm 40 is seized by the arms 66 and is swept along the guide-way between the wall 10 and the spring guide 35 to a position upon the carrier floor between the arms and prongs of the carrier. The rack segment revolves continuously, but the arrangement is such that as the swinging arms reach the end of the guide-way the engagement of the segments ceases and the spring 45 thereupon returns the shaft 41 and the arm 66 to the normal or original position. The shaft 37 has already assumed its normal position, for the tongue slips from engagement with the lever 46 as the shaft 41 advances towards the rack carrier, so that when the arms 66 are returned the starting arm is already in position for the succeeding bundle. As the shaft 41 returns to its normal position, the tongue slips over the end of the lever, the beveled end 51 engaging the latter and the tongue being forced upward thereby against the resistance of the spring 52. As each bundle is swept into position upon the shock carrier, it pushes the previous bundles toward the embracing arms of the carrier and toward the outer portions of the carrier floor. The movement of the bundles on to the carrier floor is resisted by the spring prongs 18 near the upper ends of the bundles, so that the latter are slightly mutually inclined to form a shock of the usual kind. When a sufficient number of bundles is in position upon the carrier floor to constitute a shock of suitable dimensions, the catch holding the floor is released and the latter swings downward to trail upon the ground and thereby the shock engages the ground to permit the floor to be withdrawn from under the same as the machine advances.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a grain shocker, an apron for receiving bundles, said apron being inclined with respect to the horizontal in two directions, and having an edge extended irregularly whereby in falling over said edge each bundle assumes a substantially upright position.

2. In a grain shocker, an apron for receiving a bundle from a binder, said apron being inclined in the direction of its length and transversely of its length and being extended

at one side to support unequally, a bundle passing from said apron.

3. In a grain shocker, an apron for receiving a bundle from a binder, said apron being inclined in the direction of its length and transversely of its length, and being cut away at one side thereof to support unequally, a bundle passing from said apron.

4. In a grain shocker, an apron for receiving bundles from a binder, said apron being inclined in two directions with respect to the horizontal, and being cut away at one side thereof, unequally to support a bundle passing from said apron and thereby to permit the bundle in falling from said apron to assume an upright position, a shock carrier, and means for successively advancing the bundles in an upright position to said carrier.

5. In a grain shocker, an apron for receiving bundles from a binder, said apron having an edge provided with a curved extension for a part of its length so that a bundle in falling over said edge is unequally supported and is thereby caused to assume a substantially upright position, a carrier a guideway between said apron and said carrier, and means for successively advancing the bundles from said apron along said guideway to said carrier.

6. In a grain shocker, an apron for receiving bundles from a binder and having the edge provided at one side with an extension serving to support unequally, a bundle passing from said apron, said apron being inclined with respect to the horizontal in the direction of its length and transversely of its length, a shock carrier, a guideway between said apron and said carrier, a swinging arm for advancing the bundles from said apron along said guideway to said carrier, and means for actuating said arm.

7. In a grain shocker, an apron for receiving bundles from a binder, a shock carrier, a guideway between said apron and said carrier, a swinging arm for advancing the bundles from said apron along said guideway to said carrier, said swinging arm being adjustable transversely of the direction of its swing, and means for imparting to said arm a reciprocatory movement, said apron having the edge adjacent to said carrier curved so that one part of the apron is extended and another part is recessed, said apron being tilted with respect to the horizontal in two directions.

8. In a grain shocker, an apron for receiving bundles from a binder, a shock carrier, a guideway between said apron and said carrier, a swinging arm for advancing the bundles from said apron along said guideway to said carrier, and means for actuating said arm, said guideway being arranged in the arc of a circle having the center substantially at the center of swing of said arm, said apron having the edge adjacent to said car-

rier so formed that said apron is cut away at one side thereof and extended at the other side thereof, said apron being inclined so that said curved edge is higher than the opposite edge, and so that said extended portion is higher than said cut away portion.

9. In a grain shocker, an apron for receiving bundles from a binder and having the edge remote from the binder irregularly formed to support at one end a bundle passing from said apron, said apron being inclined so that said irregularly formed edge is higher than the opposite edge, a shock carrier, a guideway between said apron and said shock carrier and narrowing as it approaches said shock carrier, means for successively advancing the bundles in an upright position from said apron along said guideway to said carrier, and means for holding the bundles upon said carrier.

10. In a grain shocker, an apron for receiving bundles from a binder, said apron having an edge integrally extended at one side to support a bundle at one end as the bundle passes from said apron, said apron being inclined with respect to the horizontal in the direction of its length and transversely of its length, a shock carrier, a guideway between said apron and said shock carrier and narrowing as it approaches said shock carrier, means for successively advancing the bundles in an upright position from said apron along said guideway to said carrier, and resilient means at said carrier for holding the bundles in position thereupon.

11. In a grain shocker, an apron for receiving bundles from a binder, a shaft having an arm for advancing a bundle, a second shaft having an arm for positioning each bundle at said apron for engagement with said advancing arm, said first shaft controlling said second shaft, and means for operating said first shaft, and resilient means for holding said shafts in normal positions.

12. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle, means for resiliently resisting the movement of said shaft, a second shaft, means for resiliently resisting the movement of said second shaft, means whereby said second shaft is controlled by said first shaft, said second shaft having an arm for positioning a bundle at said apron for engagement with said arm of said first shaft, and means for reciprocally operating said first shaft.

13. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle, means for resiliently holding said shaft in a normal position, a second shaft having an arm normally adjacent to said apron and adapted to position a bundle for

engagement with said first arm, resilient means for holding said second shaft in a normal position, and means for operatively connecting said shafts when said first shaft is turned in one direction, and means for imparting to said first shaft successive interrupted movements of rotation in one direction.

14. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle from said apron, resilient means for holding said shaft in a normal position, a second shaft having an arm normally adjacent to said apron and adapted to position a bundle for engagement with said first arm, resilient means for holding said second shaft in a normal position, means for operatively connecting said shafts when said first shaft is turned in one direction, a toothed segment rigid with said first shaft, a rack segment adapted to engage said toothed segment, and means for continuously rotating said rack segment.

15. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having a vertically adjustable arm for advancing a bundle from said apron, springs for holding said shaft in a normal position, a second shaft having an arm normally adjacent to said apron and adapted to position a bundle for engagement with said first arm, resilient means for holding said second shaft in a normal position, means for operatively connecting said shafts when said first shaft is turned in one direction, a toothed segment rigid with said first shaft, a rack segment adapted to engage said toothed segment, and means for continuously rotating said rack segment, whereby a series of interrupted movements of rotation in one direction is imparted to said first shaft.

16. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shock carrier, a guideway between said apron and said shock carrier, a shaft having an arm for advancing a bundle from said apron along said guideway to said carrier, a spring holding said shaft in a normal position, a second shaft having an arm normally adjacent to said apron and adapted to position a bundle for engagement with said first arm, said second shaft holding said first shaft in a normal position, a toothed segment rigid with said first shaft and provided with a spring-pressed finger, a lever engaging said finger of said second shaft and adapted to be engaged by said spring-pressed finger when said first shaft is turned in one direction, said spring-pressed finger being adapted to pass inoperatively over said lever when said first shaft is turned in the opposite direction, a

rack segment adapted operatively to engage said toothed segment, and means for imparting a continuous movement of rotation to said rack segment.

5 17. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle from said apron, resilient
10 means for holding said shaft in a normal position, a second shaft having an arm for positioning a bundle at said apron for engagement with said first arm, resilient means for holding said second shaft in a normal posi-
15 tion, said first shaft having a spring-pressed finger presenting a beveled edge, said second shaft presenting a finger, a lever engaging said finger of said second shaft and adapted to be operatively engaged by said spring-
20 pressed finger of said first shaft when said first shaft is turned in one direction, said beveled edge of said spring-pressed finger inoperatively engaging said lever when said first shaft is turned in the opposite direction, and
25 means for imparting a series of interrupted movements of rotation in one direction to said first shaft.

18. In a grain shocker, a frame having a floor, a second frame above said first frame, a
30 guide-wall between said frames, a spring guide constituting, with said wall, a guide-way, an apron arranged at one end of said guide-way and adapted to receive bundles from a binder and having means for causing
35 each bundle to assume an upright position, a shock-carrier at the opposite end of said guide-way, a swinging arm arranged to move longitudinally of said guide-way and adapted to advance a bundle from said apron to said
40 carrier, and means controlled by said swinging arm for positioning a bundle at said apron for engagement with said swinging arm.

19. In a grain shocker, a frame having
45 sides one of which is curved with respect to the other, a similar frame above said first frame, said first frame having a floor, a curved guide-wall between said frames at the curved sides thereof, a guide constituting,
50 with said guide-wall a guide-way, an apron for receiving bundles from a binder, and having means for causing each bundle to assume an upright position, a shock-carrier at the opposite end of said guide-way, a shaft hav-
55 ing an arm for advancing a bundle from said apron along said guide-way to said carrier, resilient means for holding said shaft in a normal position a second shaft having an arm for positioning a bundle at said apron
60 for engagement with said first arm, resilient means for holding said second shaft in a normal position means whereby said second shaft is controlled by said first shaft, and means for imparting a reciprocatory move-
65 ment to said first shaft, said guide-way being

curved in the arc of a circle having the center at the center of rotation of said first shaft.

20. In a grain shocker, a frame, a carrier-
70 floor having a head hinged to said frame and provided with a plurality of floor rods extending therefrom, resilient means for normally holding said floor in an elevated position, a spring-held catch engaging said floor to lock the same in an elevated position, piv-
75 oted uprights carried by said frame adjacent to said floor and having arms extending over said floor, resilient means for holding said uprights in a normal position, and intersecting prongs rigid with said uprights respec-
80 tively, and extending over said floor.

21. In a grain shocker, a frame, a carrier-
85 floor having a head hinged at said frame and provided with a plurality of substantially parallel floor rods extending therefrom, a spring carried at said frame and having an end engaging said head to hold said floor in a
90 normal position, a spring-held catch normally engaging said head to lock said floor in a normal position, said catch being adapted to be manually operated, pivoted uprights
95 having arms curved towards each other and extending over said floor, springs holding said uprights in a normal position, and intersecting prongs carried by said uprights and extending over said floor.

22. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for
100 advancing a bundle, resilient means for holding said shaft in a normal position, a second shaft, means whereby said first shaft controls said second shaft, said second shaft having an arm for positioning a bundle at
105 said apron for engagement with said arm of said first shaft, resilient means for holding said second shaft in a normal position, means for reciprocally operating said first shaft, a carrier adapted to receive bundles and hav-
110 ing a carrier floor arranged to swing vertically, resilient means normally holding said floor in an elevated position, means for locking said floor in an elevated position, pivoted arms resiliently held adjacent to said carrier, and intersecting prongs within said arms.

23. In a grain shocker, an apron for receiving bundles from a binder and having means
115 for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle, resilient means for resisting the movement of said shaft a second
120 shaft having an arm for positioning a bundle at said apron for engagement with said arm of said first shaft, means whereby one of said shafts controls the other of said shafts, resilient means for resisting the movement of
125 said second shaft, means for reciprocally operating said first shaft, a shock carrier, a guide-way between said apron and said shock carrier, said carrier having a carrier floor ar-
130

5 ranged to swing vertically and having a plurality of floor rods, resilient means normally holding said floor in an elevated position, means for locking said floor in an elevated position, pivoted arms resiliently carried by said frame above said floor, and intersecting prongs within said arms.

10 24. In a grain shocker, an apron for receiving bundles from a binder and having means for causing each bundle to assume an upright position, a shaft having an arm for advancing a bundle, means for resiliently holding said shaft in a normal position, a second shaft having an arm normally adjacent to said apron and adapted to position a bundle for engagement with said first arm, means for resiliently holding said second shaft in a normal position, means for operatively connecting said shafts when said first shaft is turned in one direction, means for imparting to said first shaft successive interrupted movements of rotation in one direction, a

shock-carrier, a guide-way between said apron and said shock-carrier, said shock-carrier having a floor comprising a head arranged to swing vertically, and a plurality of floor rods, resilient means for normally holding said floor in an elevated position, a resiliently held catch engaging said floor to lock the same in an elevated position, pivoted uprights carried by said frame adjacent to said floor and having arms extending over said floor, resilient means for holding said uprights in a normal position, and intersecting prongs rigid with said uprights respectively, and extending over said floor.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELIGA ^{his} X COWIN
mark

Witnesses:

J. W. HURD,
W. F. PETERS.