

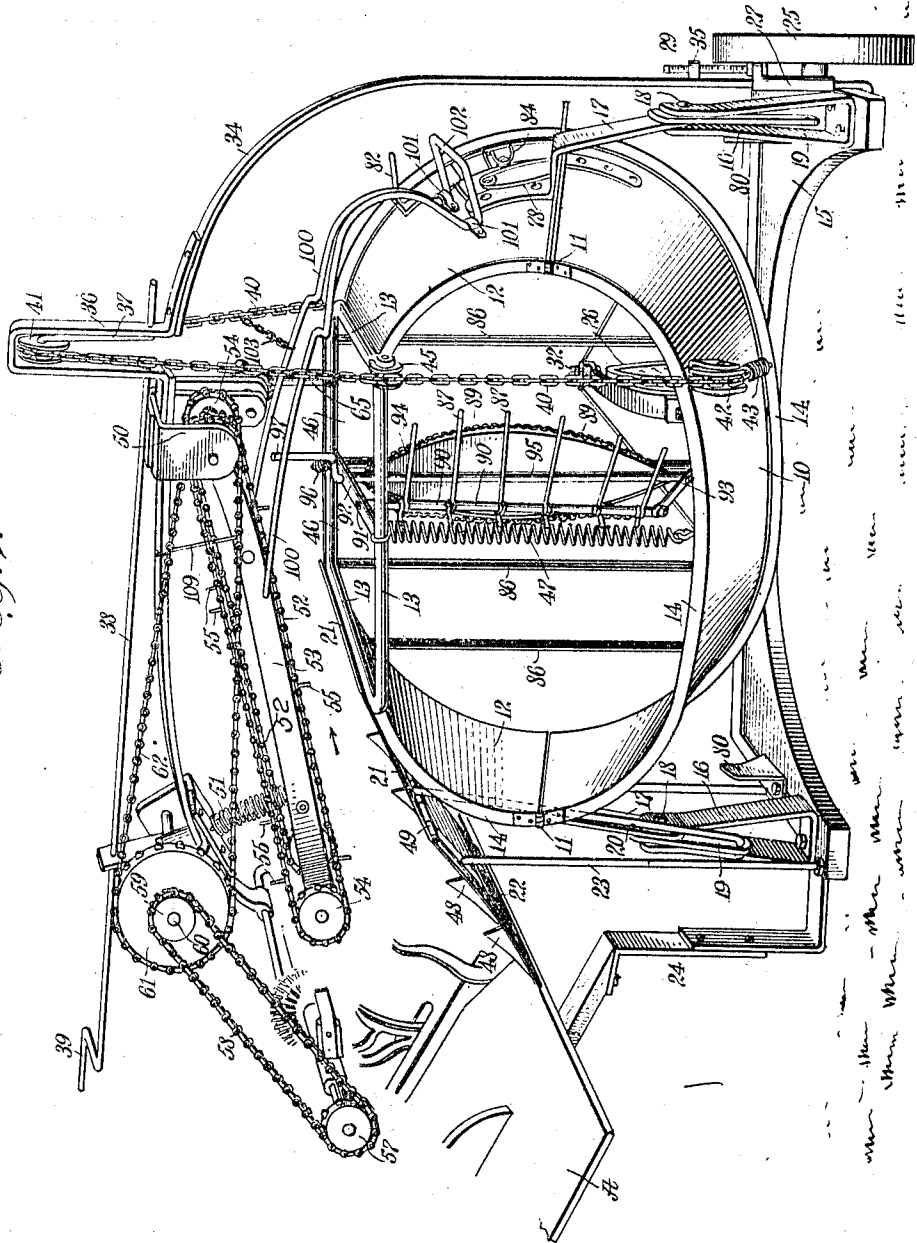
V. J. A. STOAKES.  
STOOKER.  
APPLICATION FILED SEPT. 15, 1910.

1.053,750.

Patented Feb. 18, 1913.

5 SHEETS—SHEET 1.

Fig. 1.



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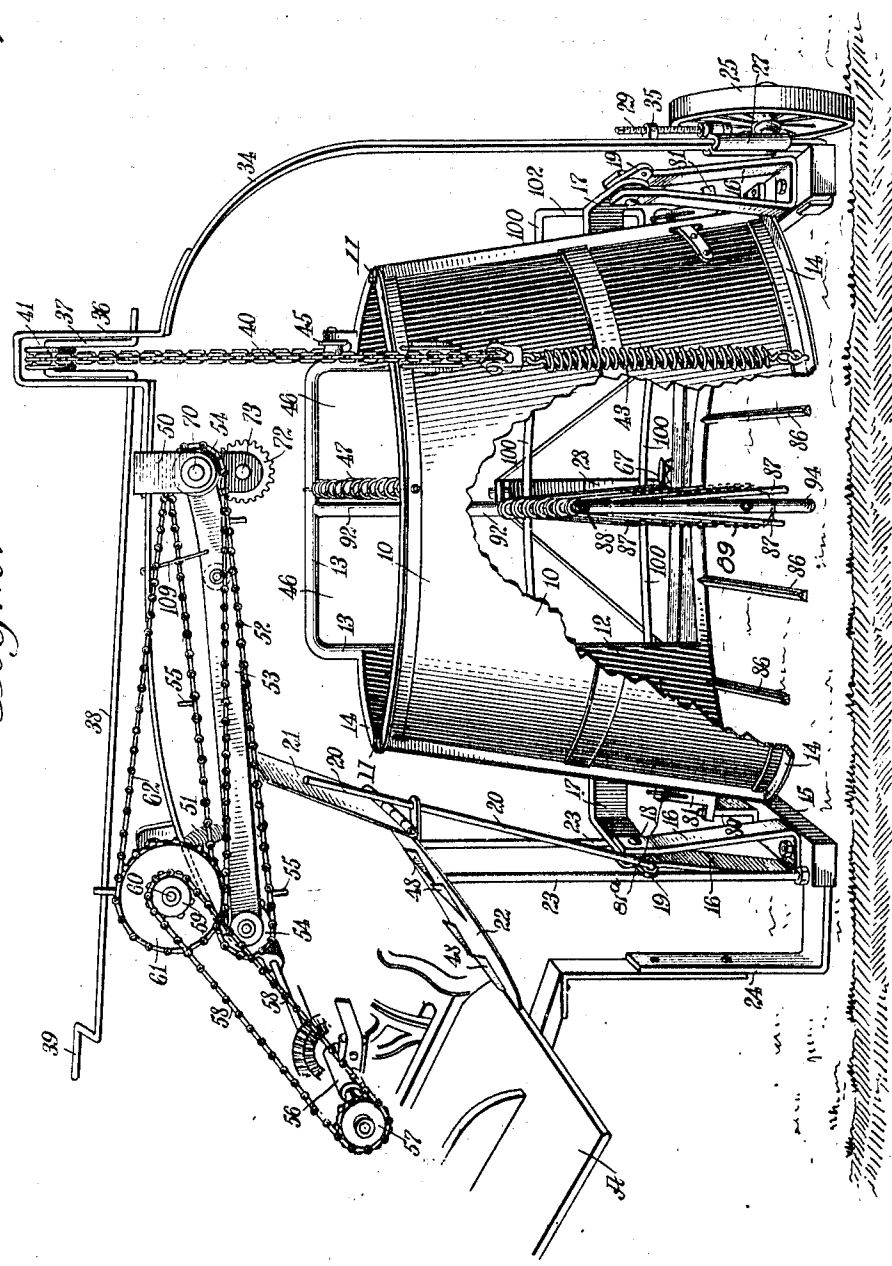
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5 SHEETS-SHEET 2.

Fig. 2.



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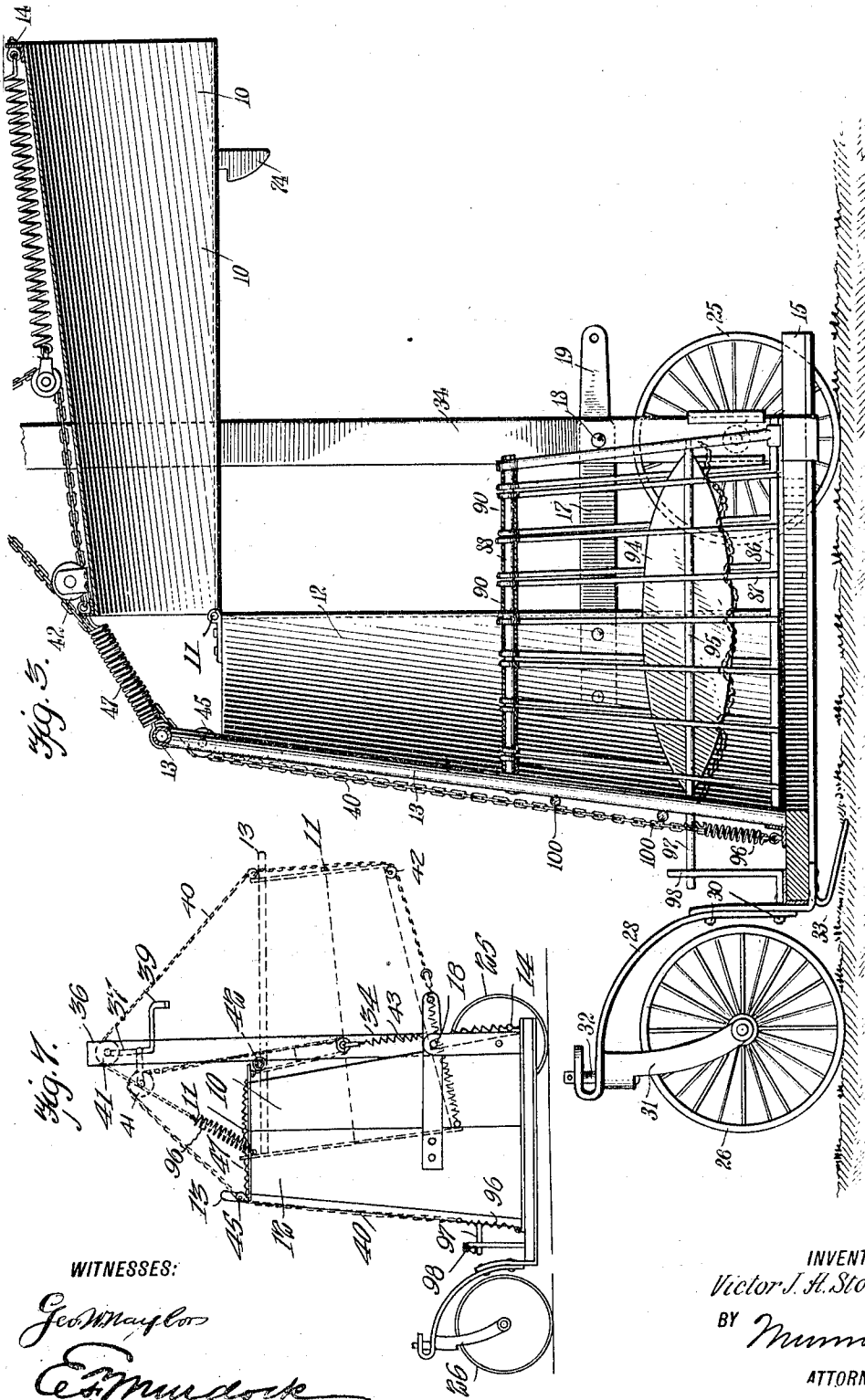
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5 SHEETS—SHEET 3.

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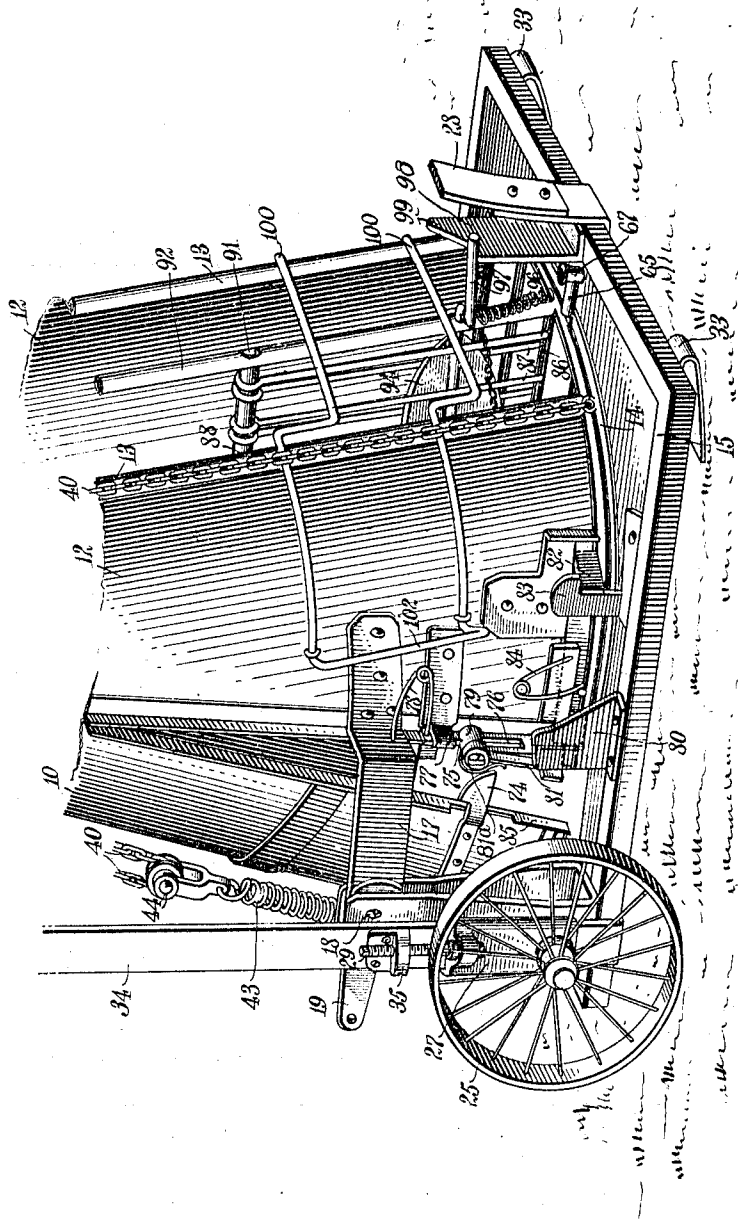
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5 SHEETS—SHEET 4.

1,053,750.

Fig. 4.



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5 SHEETS—SHEET 5.

Fig. 6.

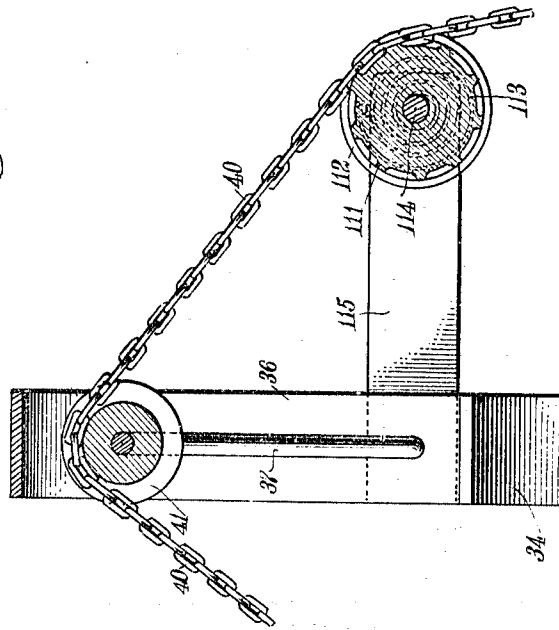
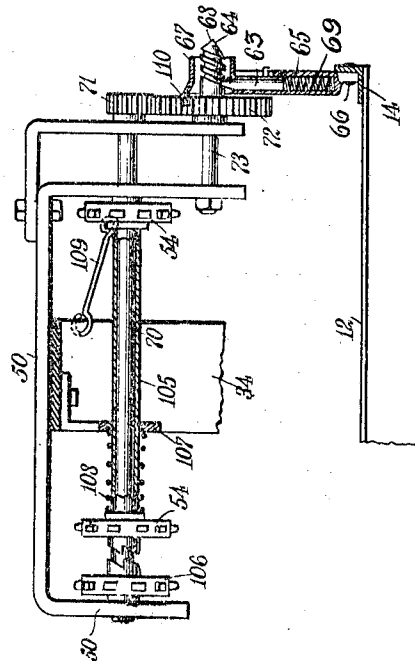


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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STOOKER.

1,053,750.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed September 15, 1910. Serial No. 582,195.

*To all whom it may concern:*

Be it known that I, VICTOR J. A. STOAKES, a subject of the King of Great Britain, and a resident of Moose Jaw, in the Province of Saskatchewan and Dominion of Canada, have invented a new and Improved Stooker, of which the following is a full, clear, and exact description:

Among the principal objects which the present invention has in view are: to provide a receptacle to receive, shape and deposit sheaves or bundles of grain-bearing or other straw; to provide a mechanism for automatically controlling the operation of the receiving and dumping receptacle in timed relation with the operation of a binder machine to which said stooker is connected and whereby the same is operated; and to provide means for adjusting the operating mechanism of the stooker to vary the timed relation to the operation of the binder.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a stooker constructed and arranged in accordance with the present invention, shown in the receiving position and attached to the draper or delivery chute of a binder; Fig. 2 is a perspective view of the stooker, shown in position to set the stook, part of the receptacle being cut away to show the position of the interior members thereof; Fig. 3 is a vertical longitudinal section of the same, showing the receptacle parted and in position to deliver the stook; Fig. 4 is a perspective view of the stooker, showing the parting members of the stooker in partly separated relation; Fig. 5 is a detail view, on an enlarged scale, showing the operating gearing for inaugurating the operation of the receptacle to deliver the stook; Fig. 6 is a detail view, in vertical section, showing a modified means for elevating the receptacle; and Fig. 7 is a side elevation of a stooker constructed and arranged in accordance with the present invention, showing in dotted and full lines the arrangement of the receptacle in its receiving and dumping position, and the operating mechanism therefor.

The receptacle illustrated in the accompanying drawings consists of two sections formed as a frustum of a cone and open

ended. The conical shape is also preferably elliptical in cross section, as shown particularly in Fig. 1 of the drawings. The receptacle is formed of a solid rear section 10, which, in its operation forms a gate portion hinged at 11, 11 upon the body section 12, 12. The body section 12, 12 is parted at the center and rigidly secured to a square tubular frame 13. The tubular frame 13 and the sections 12, 12 and 10 are held rigidly in shape by annular flanges 14, 14. The receptacle is pivotally mounted on a portable platform 15, being supported thereon by standards 16, 16, between the bifurcated upper ends whereof are pivoted supporting arms 17, 17. The arms 17, 17 are united to the standards 16, 16 by pivots 18, 18. The arms 17, 17 are provided with extensions 19, 19, a rod 20 being connected to one of said extensions. The rod 20 is guided to impinge upon a hinged leaf 21 forming part of an apron 22, which is supported on a stanchion rod 23 and suitably connected to the delivery chute A of the binder to which the stooker is connected. The connection thus formed between the leaf 21 of the apron 22 and the receptacle, provides for the shifting of the said leaf to arrest the delivery of the sheaves to the said receptacle when the said receptacle is upturned in stook setting or delivering position.

The platform 15 is supported on the binder by a hanger bar 24. Guiding wheels 25 and 26 are mounted in suitable bracket members 27 and 28 respectively. The said bracket members are vertically adjustable, the bracket 27 being suspended on a screw threaded bolt 29 and the bracket 28 being held by bolts 30, 30. The wheel 26 is mounted in fork arms 31, pivoted on a bolt 32 which is extended through the upper and lower extensions of the bracket 28 to form a guided construction for the swiveling of the wheel 26 and arms 31 thereof. The vertical adjustment of the wheels 25 and 26 is to accommodate the structural condition of the binder to which the said stooker is attached.

It is to fend the platform 15 that I have provided, at the forward edge thereof, runners 33, arranged to impinge upon the ground and to lift the platform 15 therefrom should the same be injured by striking an irregularity in the ground or a boulder which would check the movement of the said platform.

The stooker is further provided with a raised arch formed by a heavy metal strap 34, which is fixedly connected with the platform 15, and upon which slides the bracket 27 when the screw 29 is manipulated in a threaded socket 35 which is fixedly connected on the strap 34. The strap 34 is secured at any convenient position to the binder structure, that shown in the drawings being to the gear shaft thereof. The arched strap 34 is parted near the median section of the arch to form a raised mast, a narrow looped bar having vertical separated sides and long laterally outspread feet forming the said mast.

The mast 36 is provided to form a passageway for the rotation of a crank extension 37 of the operating lever rod 38. The rod 38 is provided at the end adjacent to the binder with a lever 39, the crook of the said lever being disposed adjacent to the foot of the driver or attendant for the binder. By the rotation of the rod 38 the chain 40 is slacked allowing section 10 of the stooker receptacle to drop after the delivery from the receptacle of the completed stook. Also, the manipulation of the rod 38 effects the upturning of the receptacle to a receiving position, such as shown in Fig. 1 of the drawings, after the delivery from the receptacle of the completed stook. This operation is produced by a chain 40, which is supported upon a pulley 41 pivotally mounted in the crank extension 37 and at the outer end thereof. The chain 40 is secured to the lower flange 14 on the forward and upper framing section 12 of the stooker receptacle. The opposite end of the chain 40 is anchored to the upper flange 14 of the section 10, and is roven through a pulley block 44. The pulley block 44 is pivotally connected to a spiral spring 43, which is anchored to the lower flange 14 of the section 10. The section 10 is provided near the upper edge thereof with a pulley 42 to operate as a guide fender for the chain 40 when the same is disposed in the position where it would otherwise ride upon the flange 14 at the top of the said section. A similar guide pulley 45 is formed on the upper edge of the section 12. The pulleys 42 and 45 are brought into action when the receptacle is disposed in the position illustrated in Fig. 1 of the drawings, which, as stated, is the receiving position of the receptacle assumed thereby when the sheaves or bundles are being delivered to the receptacle through the spaces 46, 46 formed in the frame 13. The spring 43 operates in conjunction with a spring 47 to swing the section 10 on the hinges 11, 11.

The sheaves from which the stooks are formed are delivered over an apron or delivery chute formed on the attendant binder to the apron 22. The apron 22 is provided

with a series of wedge shaped upwardly inclined edge pieces 48, 48, and is pivotally connected at 49, 49 to the leaf 21. Suspended above the stooker and supported by the strap 34 by means of depended clips 50 and a spiral spring 51, is a feeder for engaging and advancing the sheaves or bundles by the apron 22 to deposit the same within the receptacle formed by the sections 10 and 12.

The feeder mechanism comprises the endless belts 52, which are mounted at the end of a frame 53 upon sprocket wheels 54, 54. The members of the frame 53 are spaced apart to dispose the belts 52, 52 at a desired distance each from the other. The belts 52, 52 are provided at suitable intervals with a series of extended fingers 55, 55. The fingers 55, 55, when the end of the frame suspended by the spring 51 is permitted to descend, engage the sheaves from above as they are delivered upon the apron 22, the said fingers 55 sinking between the straws forming the said sheaves. This engagement of the fingers 55 with the said sheaves causes the sheaves to roll up the inclined apron 22 and over the leaf 21 thereof, until they drop successively into the first of the spaces 46, 46.

The feeding mechanism is rotatively connected with a kicker shaft 56, at the end of which is provided a special sprocket wheel 57. The sprocket wheel 57 is rotatively connected by means of a sprocket chain 58 with a sprocket wheel 59 on a shaft 60. Fixedly connected with the shaft 60 and the sprocket wheel 59 is a sprocket gear 61. The sprocket gear 61 is rotatively connected with the sprocket wheel 106 by means of a sprocket chain 62. The wheels 57, 59, and 61, together with the chains 58 and 62, constitute a transmission mechanism for operating the feeding mechanism from the binder to which it is for the moment connected.

The spring 51, when the weight of the feeding mechanism is imposed thereon, is extended to permit the free end of the frame 53 to be depressed upon the sheaves or bundles, resting at the inner end of the said apron 22. From this position the frame 53 is elevated by reason of the uplifting of the leaf 21. The leaf 21 is lifted by the rod 20 to the position shown in Fig. 2 of the drawings. In the indicated position of the leaf 21, as shown in said Fig. 2 of the drawings, the feeding mechanism is raised out of engagement with the sheaves on the apron 22, and, further, the upturning of the leaf 21 prevents the delivery of sheaves to the receptacle formed by the sections 10 and 12 while the same are in delivery position. The upward projection of the rod 20 is caused by the uplift of the extension 19 of the arm 17 to which the said rod is attached. The arms 17 are disposed in the horizontal position shown in Fig. 2 of the drawings when the stooker receptacle is disposed in

the position shown in said Fig. 2, which position is that assumed by the stooker when depositing the stook upon the ground.

The receptacle is supported in the receiving position shown in Fig. 1 of the drawings by the arms 17, 17, which, in the receiving position of the receptacle are thrown slightly to the rear of the vertical line of the pivots 18, 18, and are there held by reason of the rod 20 striking upon the side of the standard 16. The receptacle is further held in the receiving position by a latch bolt 63, which is engaged with and held by the threads of a worm 64, as seen more particularly in Fig. 5 of the drawings. The bolt 63 is slidably mounted in a casing 65, which is bolted at 66 to the flange 14 secured to the section 12 of the receptacle as best seen in Fig. 5. When the receptacle is disposed in position, as shown in Fig. 1 of the drawings, the sleeve 67 is passed over the worm 64, and the bolt 63 is engaged with the threads of the said worm. The face of the bolt 63 is beveled to override the conical head 68 of the worm 64, and the successive convolutions of the thread thereof cause the bolt 63 to yield inwardly within said casing 65, compressing the spring 69 mounted in the said casing 65. The bolt 63 yields to the pressure exerted by the thread of the worm when being pressed thereover, and prevents the disengagement thereof when moved outwardly along the said worm. The end of the bolt 63 is tapered to an angle which passes the head 68 and threads of the worm when the force of the blow is sufficient to drive the bolt downward.

Fixedly mounted upon the shaft 70 is the sprocket wheel 106 carrying the chain 62 and at the opposite end is a pinion 71 suitably meshed with a gear wheel 72, which is mounted upon a shaft 73, upon the outer end whereof is formed the worm 64. The ratio between the gears 71 and 72 is related to produce a given number of revolutions of the worm 64 for a given number of revolutions of the shaft 70, and sprocket wheel 106 mounted on the said shaft 70 is connected by the chain 62 and proportioned to the sprocket 61 to produce a certain rate of revolution of the worm 64 for each of the revolutions of the sprocket gear 61. The result of the above arrangement is that with one revolution of the sprocket gear 61, a certain distance of the belt 52 is traveled with the further result that the worm 64 receives a partial turn for each sheaf delivered in the stooker receptacle, and on a set number of sheaves being deposited the bolt 63 is forced out of engagement with the worm 64. The ratio between the gears 71 and 72 is related to produce a given number of revolutions of the worm 64 for a given number of revolutions of the shaft

70, and the sprocket wheel 106 mounted on the said shaft 70 is related to the belts 52, 52 to produce a certain travel of the said belts for each of the revolutions of the sprocket gear 61. The result of the above arrangement is that with one revolution of the sprocket 106 a certain distance of the belts 52 is traveled, with the result that a certain number of sheaves or bundles are acted upon by the said belts for delivery to the stooker receptacle.

In the above manner there is provided a mechanism, the operation whereof gradually forces outward the bolt 63 and the upper edge of the section 12 of the receptacle. When the bolt 63 is finally moved forward by the worm 64 to be released thereby, the stooker receptacle has been rocked forward on the arms 17, 17 past the pivotal bearings of the said arms 17 and will then move to discharging position by gravity. When now the bolt 63 is disengaged from the worm 64, the stooker rocks about the pivots 18 to be disposed in the uptilted position shown in Fig. 2 of the drawings. While moving to this position the stooker raises the extension 19 of the arm 17 with which the rod 20 is connected to lift thereby the leaf 21 and the feeding mechanism by which the sheaves are delivered to the stooker, thus arresting the delivery of the sheaves until the stooker is again disposed in the position shown in Fig. 1.

The stooker, as above stated, is composed of the sections 10 and 12, which sections are hinged at 11, 11, and are formed to the shape of the frustum of a cone. In the receiving position of the stooker receptacle, such as shown in Fig. 1 of the drawings, the smaller end of the frustum is turned toward the rear of the platform 15. The platform 15 is cut away to provide a space for the extension therethrough of the larger end of the frustum, and the contents, or stook, formed within the stooker or receptacle when the same is upturned, as shown in Fig. 2 of the drawings. As the platform and supporting frame of the stooker are connected with the binder to travel over the ground therewith, it becomes necessary, in order that the stook may be left standing, to remove the section 10, which, in the upstanding position is to the rear of the stook. For this purpose are provided the springs 43 and 47.

It will be noted that in the uptilt of the stook the chain 40 runs over the pulley 41, but does not relieve the strain upon the spring 43. Further, it will be noted that in the uptilted position of the stooker, as shown in Figs. 2 and 4 of the drawings, the spring 43 is extended outward from the section 10 so as to exert an outward pulling strain upon the section 10 at the lower edge thereof. This pull of the spring 43 sepa-

rates the sections 10 and 12 at the lower edge when the lock by which the two sections are joined is released.

The sections 10 and 12 are locked together at the lower edge by means of a strap hook 74 in a plate 75, as most clearly seen in Fig. 4 of the drawings. The plate 75 is provided with a slot 76, through which is extended the head of the hook 74. The plate 75 is guided in a loop 77, and is depressed by a spring 76 when the head of the hook 74 is driven through the slot 76. In this position the sections 10 and 12 are locked together.

When in the course of operation the stooker is uptilted as shown in Fig. 4 of the drawings, a cam plate 80 mounted on the side of the platform 15 is impinged upon by an arm 81 which lifts the plate 75 out of engagement with the hook 74. The hook 74 being thus released the spring 43 is given the needed opportunity to separate the lower edges of the sections 10 and 12, as shown in the said Fig. 4. Should the strain of the spring 43 be insufficient to separate the sections 10 and 12, this will be accomplished by the rather sudden arresting of the section 12 when the same strikes upon the platform 15. The arm 81 is held in its normal position by a spring 81<sup>a</sup>, which is wound on the spindle 79, and so disposed as to hold the said arm in position to strike the plate 80 and lift the plate 75, when the stooker is rocked to deliver. When, however, the stooker is raised to the horizontal or receiving position, the spring 81<sup>a</sup> yields to permit the arm 81 to pass over the plate 80. The upper edge of the plate 80 is inclined, as shown, to form a releasing point at the forward edge of said plate which releases the latch 74. At the rear of said plate 80 the plate 75 is lowered on said upper edge of the plate 80 in position to engage the said latch. Coincident with the parting of the sections 10 and 12 at the lower edges thereof, the upper edges are lifted out of alinement so that the pull of the spring 47 is permitted to be exerted to draw the edges of the sections to which the said spring is connected toward each other, and to rotate the said sections on the hinges 11, 11. From this point the operations of the two springs 43 and 47 are in unison, and result in the uplifting of the section 10 to the position shown in Fig. 3 of the drawings. In this position the section 10 is lifted above the top or head of the stook which has been formed between the sections 10 and 12.

When the stooker is upturned, as shown in Figs. 2 and 4 of the drawings, the outturned end of the strap 82, slidably mounted on the section 12, is extended under the latch head of a strap hook 83 which is fixedly mounted upon the platform 15. The strap 82 is slidably mounted upon the sec-

tion 12, and is maintained in advanced position by a spring 84 mounted on the said section. The strap 82 is projected through the parting flange of the section 12 and is extended into the path of the parting flange 85 of the section 10. The said strap 82 is normally held by the spring 84 connected therewith in the path of the parting flange 85 of the section 10. When the section 10 is lowered from the position shown in Fig. 3 of the drawings to close upon the section 12, the flange 85 impinges upon the extended end of the strap 82 and forces the same backward and out of engagement with the head of the hook 83. Until the strap 82 is thus disengaged the section 12 is held immovably in the upright position on the platform 15. With the removal of the strap 82 from engagement with the hook 83, the section 12 and the stooker are at liberty to be rotated to the receiving position, as shown in Fig. 1 of the drawings.

To permit the depression of the section 10 from the position shown in Fig. 3 of the drawings, the lever 39 is manipulated to rotate the rod 38 and the crank extension 37 thereof to lower the pulley 41 and the chain 40 connected therewith. This operation slackens the chain 40 and removes the strain from the spring 43 and lessens the pull on the outer extended edge of the section 10. The spring 47 being insufficient to support the section 10 in the raised position, the said section drops to the closing position above described. When the sections 10 and 12 are reunited by the section 10 being dropped upon the section 12, as stated, the lever 39 is again manipulated to return the crank extension 37 and the pulley 41 carried thereon to the upraised position shown in Fig. 1. This action reestablishes the pull on the chain 40 and on the spring 43 connected therewith.

To suspend the sheaves constituting the stook in the receptacle formed by the sections 10 and 12 during the revolution or uptilting of the stooker, I have provided a series of parallel rods 86, 86, which rods are rigidly and fixedly connected to the section 12. The said rods 86, 86 are of any convenient shape in cross section, that shown in the drawings and preferred by me being triangular in cross section, and the wedge edge thereof being toward the stook. The rods 86, 86 are disposed in sufficiently close relation to prevent the sliding of the sheaves or bundles out from the enlarged end of the stooker when the same is upturned to the position shown in Figs. 2 and 4. It is desired that for the proper formation of a stook the base of the sheaves or bundles shall be outspread laterally, while the head or top of the sheaves is inclined centrally. This is accomplished by providing a series of spreading rods 87, 87, which are pivotally

mounted upon a shaft 88, eyeleted ends being formed on the said rods for that purpose. The outer ends of the rods are connected by short chain sections 89, 89 to prevent the  
 5 overspreading of the outer ends of the said rods. In the disposition of the rods upon the shaft 88 they are supported by sleeves 90, 90. The shaft 88 is formed preferably of a tube or pipe section, through which a tie  
 10 rod 91 is extended, the said rod 91 also passing through a center bar 92 and a standard 93. By reason of this manner of construction the shaft 88 may be removed from the receptacle for repair or replacement.

15 The rods 87, 87 are spread in a manner to dispose the ends in an oval or elliptical arrangement. For this purpose a disk 94 is employed, which disk is fixedly mounted on a shaft 95, and is provided with a shape  
 20 substantially that which it is desired the rod 87, 87 shall assume when the said rods are outspread. The shaft 95 is normally disposed, as seen in Fig. 1 of the drawings, with the disk 94 arranged to hold the rods 87 in  
 25 extended position. In this position the shaft is normally held by a spring 96, the lower end whereof is connected to the flange 14 of the section 12. The upper end of the spring is connected to a crank handle 97 dis-  
 30 posed in lateral extension upon the shaft 95. The portion of the spring 96 draws the crank 97 to a line with the bar 92, separating the rods 87, 87.

35 In the operation as above set forth of the feeding mechanism, which occurs when the receptacle formed by the sections 10 and 12 is in the horizontal position shown in Fig. 1 of the drawings, the sheaves or  
 40 bundles are first delivered through the space 46 in the frame 13 adjacent to the leaf 21 of the apron 22. As the sheaves are deposited in the receptacle through the first of the said spaces 46 they are disposed with  
 45 reference to the outspread arrangement of the rods 87 and packed to the form of the sections 10 and 12. When, in due course, the section of the receptacle juxtaposed to the apron 22 becomes filled, the operation of the  
 50 feeding mechanism carries the succeeding bundles or sheaves across the now filled space, and delivers the same into the space 46 on the far side of the center bar 92. The operation of filling the receptacle now continues until the far side of the said recep-  
 55 tacle is filled. When this is accomplished by reason of the rotation of the worm 64 the bolt 63 is ejected from engagement with the said worm and the stooker is uptilted as described.

60 It becomes necessary to collapse the rods 87, 87 so that the spreading form may be withdrawn from the surrounding sheaves or stook. It is for this purpose that a plate 98 is provided. The plate 98 is secured  
 65 fixedly upon the platform 15, and is pro-

vided with an inclined laterally disposed extension 99, arranged to impinge upon the crank handle 97, and to deflect the same until received by the saddle formed in the plate 98. From this point the crank is re-  
 70 volved to rotate the shaft 95 until the disk 94 is disposed, in a vertical position. In this position the weight of the sheaves and the weight of the rods 87, 87 collapse the said rods into vertical hanging position. When  
 75 now the said rods 87, 87 are so disposed, the same, together with the rods 86, 86 may be drawn through the stook in the direction in which the platform is carried by the binder to which it is attached. This is done  
 80 when and as the section 10 is lifted to the raised position shown in Fig. 3 of the drawings. It will also be noted in said figure of the drawings that the disk 94 is disposed in the vertical arrangement just above de-  
 85 scribed.

It is to prevent the outward falling of the sheaves through the spaces 46, 46 that I have provided the rods 100, 100. The rods 100, 100 are hinged in loops 101, 101 formed on  
 90 the side of the section 12 of the stooker. The rods 100, 100 are joined by a cross section 102, compelling the simultaneous movement of the said rods. One of the said rods is connected to the chain 40 by a chain section 103. The chain section 103 is of such  
 95 length that when the stooker is in the horizontal position the rods 100, 100 are suspended on the section 103. When, however, the stooker is tilted to the delivery position  
 100 the chain 40 is drawn to the side of the section 12 and forces the rods 100, 100 in closed position across the spaces 46, 46. This action of the rods 100, 100 occurs before the stooker is uptilted sufficient to cause any of the  
 105 sheaves to fall outward through the spaces 46, 46.

With the uptilting of the sections 10 and 12, as described, the lock securing the sections is released, and the section 10 is immediately lifted by the springs 43 and 47 to rotate upon the hinges 11 to clear the top  
 110 of the stook when now the stooker is carried forward to leave the stook standing as deposited on the ground. It will be noted that, the stook having been deposited on the ground through the rods 86, 86, and while the rods 87, 87 have been outspread, the butts of the sheaves comprising the stook are extended outward and the ventilating space is  
 115 formed in the center of the stook. When the rods 87, 87 are collapsed the butts of the sheaves are prevented from contracting inward on the stook formation, by the rods 86, 86. When the stook has been thus de-  
 120 posited, and the stooker moved so that the section 10 may be dropped into position to lock with the section 12 without interference with the stook, the operator of the binder depresses the lever 39 and rocks the rod 38  
 125 130

to depress the crank extension 37. This slacks the chain 40 and spring 43 connected therewith to permit the section 10 to drop into position. The section 10, when dropped into position is relocked with the section 12. When now the lever 39 is returned to its vertical position, wherein the pulley 41 is raised, the two sections 10 and 12 are lifted by the chain 40 to the horizontal or receiving position shown in Fig. 1 of the drawings. It will be noted, as best seen in Fig. 7, that the stoker, when in vertical position, is disposed substantially forward of the pivots 18 on which the said stoker may be said to swing. The pivot 18 and the rear of the stoker are substantially in line with the pulley 41 when disposed in the raised position just referred to. In this position of the parts, it will be understood that the lift of the section of the chain 40 to which the spring 43 is connected is substantially resisted by reason of the disposition of the same in substantially the direct line of the pivot 18 and the pulley 41. This permits the full effectiveness of the pull of the chain 40 and springs 43 and 96 to be exerted on the section of the said chain, to which is connected the spring 96. The immediate result of this arrangement is that the forward edge of the stoker, the two sections 10 and 12 being locked, is lifted, the stoker swinging on the pivots 18 until the same is disposed in the horizontal receiving position, wherein it is held by the worm 64. The stoker being thus returned to its horizontal position the sleeve 67 is extended over the worm 64 until arrested by the gear wheel 72. The bolt 63 is held in engagement with the worm 64. The stoker is now locked against disadjustment in the horizontal or receiving position.

The sprocket wheels 54, 54 are mounted upon the sleeve shaft 105, interposed between and fixedly connected with the said sprocket wheels. The sleeve 105 is revoluble on the shaft 70, hence the shaft 70 may rotate, being compelled thereto by the chain 62 connecting the sprocket wheels 61 and 106, the latter being fixedly mounted on the shaft 70. The hub of one of the sprocket wheels 54 and the hub of the sprocket wheel 106 are provided with clutch teeth, adapted to engage when the two sprocket wheels are moved toward each other. It will be understood that the sprocket wheel 106 and shaft 70 connected therewith are driven constantly by the driving mechanism of the binder to which the stoker is attached. Interposed between a framing arm 107, set down from the strap 34, and the hub of the outer sprocket wheel 54, is a spiral spring 108. The spring 108 tends normally to move the sprocket wheel 54 so that the clutch hubs of the said sprocket wheel 54 and the sprocket wheel 106 are engaged. When the

frame 53 is lowered, which, it will be remembered, is when the stoker is in the horizontal or receiving position, the rod 109 assumes more nearly vertical position, permitting the spring 108 to throw the sleeve 105 and sprocket wheels connected therewith into fixed engagement with the sprocket wheel 106 and shaft 70 connected therewith. The arm 109 is connected to the strap 34 and to the frame 53 of the feeder mechanism.

When in the course of operation the leaf 21 is raised, thereby lifting the frame 53, the rod 109 crowds the frame laterally to move the sleeve 105 out of engagement with the sprocket wheel 106, as shown in Fig. 5 of the drawings. When the sprocket wheels mounted on the sleeve 105 are thus disengaged from the sprocket wheel 106, the feeding mechanism and the chains 52 connected therewith are arrested.

A device in the shape of a pin 110 is employed to vary the extent of the engagement of the bolt 63 with the worm 64. The pin 110 is seated in a recess formed in the face of the gear wheel 72. The pin 110 is disposed in the path of the sleeve 67 and is adapted to regulate the approximation of the sleeve 67 to the gear 72. By varying the length of the pin 110 the extension of the sleeve 67 over the worm 64 is varied.

In Fig. 6 of the drawings is shown a modified form of the gearing for raising the stoker to the horizontal or receiving position as shown in Fig. 1. The modification consists in the employment of a sprocket wheel 111 fixedly connected with a spring casing 112, wherein is mounted a spring 113. The spring 113 is fixedly connected to a stationary shaft 114. The stationary shaft 114, and spring and casing carried thereby, are supported at the ends of bracket arms 115. The spring 113 is sufficiently strong to lift the forward extension of the chain 40 and the empty stoker from the platform 15 when the load has been delivered therefrom, but is not sufficiently strong to stand the weight of the loaded stoker. The operation of the sprocket wheel 111 as driven by the spring 113 is independent of the operation of the crank extension 37. As in the above described mechanism the crank extension 37 is depressed to lower the section 10 of the stoker. When the wheel 111 is provided the operation as above described is slightly varied, in that when the strap 82 is released from the hook 83 by the closing of the section 10, the spring 113 immediately operates to lift the stoker to the position shown in Fig. 1, and that without waiting upon the raising of the crank extension 37.

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

1. A stoker, comprising a frusto-conical

shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spacing member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle, pivotally mounted to one side of the center of gravity of said receptacle when the same is in receiving position; a locking mechanism for maintaining said stooker in receiving position, said locking mechanism embodying a worm mounted on and rotated by said feeding mechanism; a yielding bolt carried on said stooker to engage said worm when said stooker is raised to receiving position; and means to lift the said rearwardly disposed section of said stooker above the top of the stook.

2. A stooker, comprising a frusto-conical shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spacing member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle pivotally mounted to one side of the center of gravity of said receptacle when the same is in receiving position; a worm mounted on the supporting frame of said stooker; a timed transmission gear operatively connecting said feeding mechanism and said worm; a sleeve mounted on said receptacle to guide the said worm; a yielding bolt carried by said sleeve to engage the convolutions of said worm, said bolt being arranged to be moved by the said worm to become disengaged therewith; and means to lift the said rearwardly disposed section of said receptacle above the top of the stook.

3. A stooker, comprising a frusto-conical shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spacing member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle pivotally mounted to one side of the center of gravity of said receptacle when the same is in receiving position; a locking mechanism for maintaining said receptacle in receiving position; means for releasing said locking mechanism; a plu-

rality of springs arranged to lift the said rearwardly disposed section on the connecting hinges thereof; a flexible lifting member connected with said springs to support said rearwardly disposed section; and a device connected with said flexible lifting member for slacking the same to permit the said rearwardly disposed section to drop to a vertical position.

4. A stooker, comprising a frusto-conical shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spacing member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle pivotally mounted to one side of the center of gravity of said receptacle when the same is in receiving position; a locking mechanism for maintaining the said receptacle in receiving position, said locking mechanism being releasable by and in timed relation with said feeding mechanism; a plurality of springs arranged to lift the said rearwardly disposed section on the connecting hinges thereof; a flexible lifting member connected with said springs to support said rearwardly disposed section; a device connected with said flexible lifting member for slacking the same to permit the said rearwardly disposed section to drop to a vertical position; and a manually operated lever disposed in operative position upon the connected binder and provided with a rod uniting said lever and said extension device.

5. A stooker, comprising a frusto-conical shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spacing member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle pivotally mounted to one side of the center of gravity of said receptacle when the same is in receiving position; a locking mechanism for maintaining said stooker in receiving position, said locking mechanism having a worm operatively connected with said feeding mechanism and engaged by a yielding bolt carried on said receptacle; a plurality of springs arranged to lift the said rearwardly disposed section on the connecting hinges thereof; a flexible lifting member connected with said springs to support said rearwardly disposed section; a device connected with said flexible lifting

member for slacking the same to permit the said rearwardly disposed section to drop to a vertical position; and a manually operated lever disposed in operative position upon the connected binder and provided with a rod uniting said lever and said extension device.

6. A stooker, comprising a frusto-conical shaped open-ended receptacle having two hinged half sections, one of said sections being rearwardly disposed when in delivery position and the other of said sections having an open receiving space in the median portion thereof; a feeding mechanism arranged to deliver sheaves within said receptacle; a spaced member disposed in said receptacle to spread the butt ends of said sheaves in said receptacle; supporting arms for said receptacle pivotally mounted to one side of the center of gravity of said receptacle; a locking mechanism for maintaining said receptacle in receiving position; means to lift the said rearwardly disposed section of said receptacle above the top of the stook; and means operatively connecting the said feeding mechanism and said supporting arms for said receptacle, for lifting the said feeding mechanism from engagement with the sheaves as and when the said receptacle is rotated to the upturned position on said arms.

7. A stooker, comprising a frusto-conical shaped forming receptacle; a parting frame mounted on said receptacle and having a

series of pivotally mounted spreading members connected therewith; a disk rotatively mounted on said frame and disposed between said spreading members; and means mounted on the carrying frame of said stooker for rotating said disk when the said receptacle is rocked to delivery position.

8. A stooker, comprising a frusto-conical shaped forming receptacle adapted to receive sheaves as delivered thereto to shape a stook, said receptacle having when in delivery position a rearwardly disposed hinged opening section; a parting frame mounted on said receptacle and having a series of pivotally mounted spreading members connected therewith; a disk rotatively mounted on said frame and disposed between said spreading members; means mounted on the carrying frame of said stooker for rotating said disk when the said receptacle is rocked to delivery position; and a plurality of parallel bars fixedly connected to the section of said receptacle to which said rearwardly opening section is hinged, said bars arranged to prevent the exit therethrough of the sheaves when received in said receptacle.

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

VICTOR J. A. STOAKES.

Witnesses:

VIOLET R. STEWART,  
JOSEPH McKINNON.