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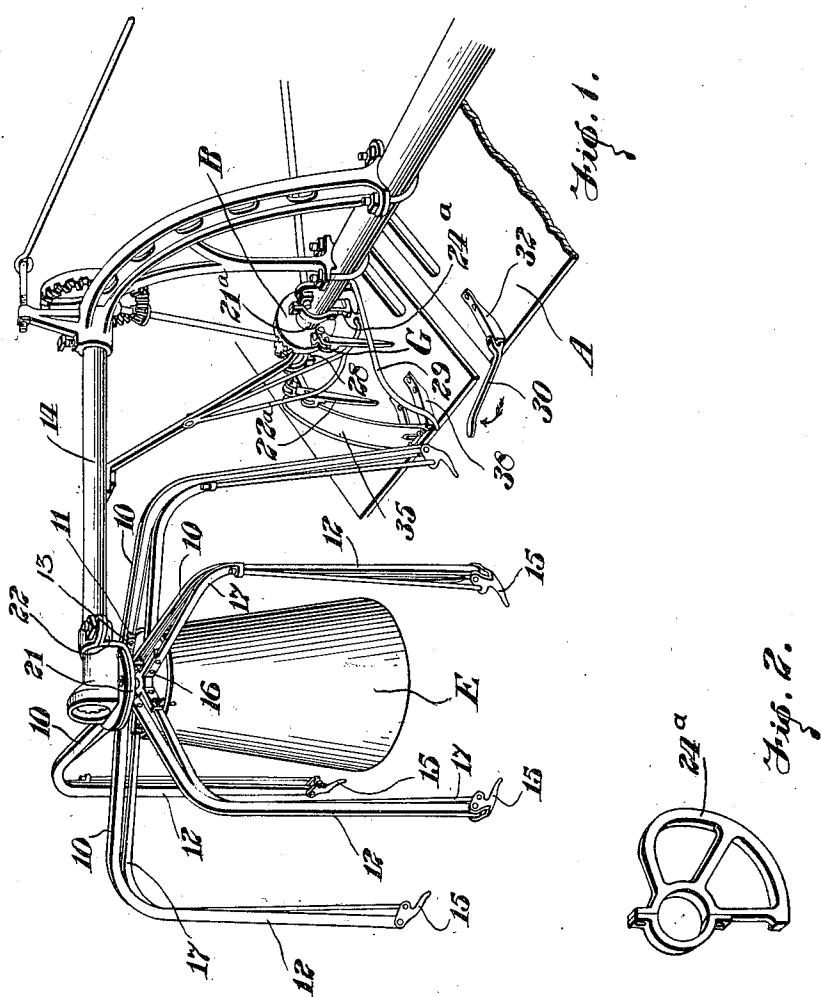
SHEAF SHOCKER

APPLICATION FILED MAY 16, 1910.

999,251.

Patented Aug. 1, 1911.

2 SHEETS—SHEET 1.



WITNESSES.

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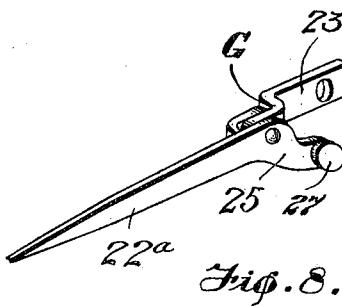
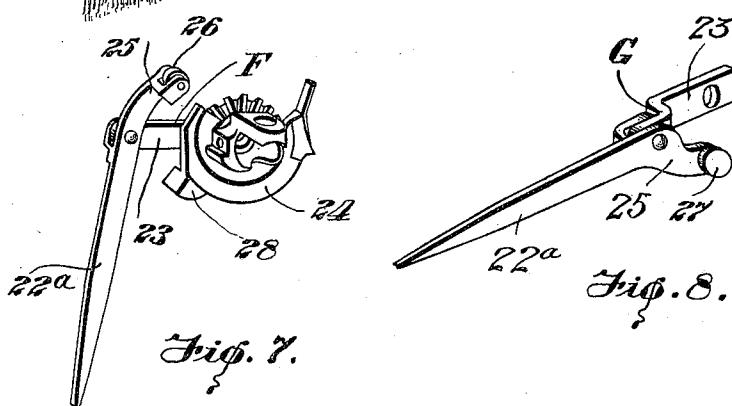
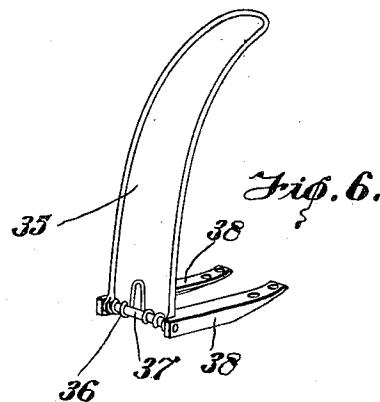
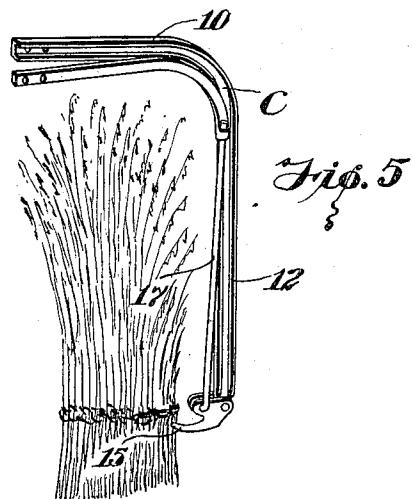
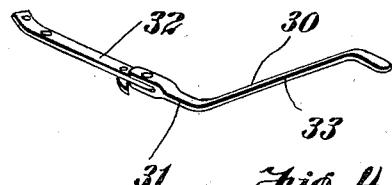
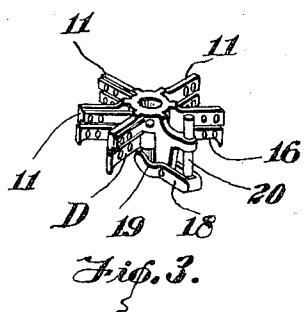
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2 SHEETS-SHEET 2.



WITNESSES,

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UNITED STATES PATENT OFFICE.

WILLIAM HUMPHRY PERRIN, OF NEW LISKEARD, ONTARIO, CANADA.

SHEAF-SHOCKER.

999,251.

Specification of Letters Patent. Patented Aug. 1, 1911.

Application filed May 16, 1910. Serial No. 561,544.

To all whom it may concern:

Be it known that I, WILLIAM HUMPHRY PERRIN, of New Liskeard, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Sheaf-Shockers, of which the following is a specification.

This invention relates to improvements in sheaf shockers, and the objects of the invention are to provide an improved mechanism for upending the sheaves by means of which the sheaf may be accurately turned to a proper upended position and retained momentarily in such position until it is engaged by the carrier of the sheaf shocking means.

Further objects are to provide an improved form of carrier and shocking means of simplified construction and adapted to securely retain and hold the sheaves until they are ready to be discharged in the form of a shock.

This and other details of the invention are more fully set forth and described in detail in the accompanying specifications and drawings.

In the drawings: Figure 1 is a perspective view of the sheaf shocker and a portion of the binder mechanism. Fig. 2 is a perspective view of the cam controlling one of the discharge arms. Fig. 3 is a perspective view of the carrier controlling mechanism. Fig. 4 is a perspective view of the supporting member adapted to support the butt of the sheaf during upending. Fig. 5 is a perspective view of one of the arms of the carrier. Fig. 6 is a perspective view of the supporting member adapted to support the upper end of the sheaf during upending. Fig. 7 is a perspective view of one of the upending discharge arms. Fig. 8 is a perspective view of the other upending discharge arm.

In the drawings, like characters of reference indicate corresponding parts in each figure.

It may be mentioned that the general construction of the sheaf shocker is similar to that which I have described in my earlier United States Patent No. 806,283, granted Dec. 5/05. Certain features are also described in my United States application Serial No. 479,840, filed Feb. 24/09.

Referring to the drawings, A represents the binder deck and B represents in a general way the knotting mechanism.

According to the present invention, the sheaves are engaged one by one by rigid arms having hook members adapted to engage the cord on each sheaf, said hook members being adapted to be simultaneously turned downwardly to discharge the sheaves in the form of a shock.

C represents the shocking mechanism as a whole, located stubbleward of the binder deck. This mechanism includes a rotatable carrier D formed with rigid radially extending arms 10, each of which arms is formed with an inner section 11 extending substantially horizontally and an outer section 12 extending substantially vertically. The arms in the particular embodiment illustrated are supported from a rotatable frame 13 suitably mounted on a vertical shaft (not shown) which is geared to a horizontal shaft journaled in a sleeve 14 and driven from a portion of the binder mechanism in a manner more particularly described in my earlier patent and application.

At the extremity of each radial arm, a pivoted hook member 15 is provided adapted to be actuated by suitable means to grip the cord on the sheaf and disengage the same at the proper moment. The means for operating these arms comprise an axially movable frame 16 mounted on the same shaft as the frame 13 and being formed with similar radial arms 17 which have their extremities connected to a point on the hook members a short distance removed from the pivoting points thereof, whereby, as the members 17 are raised and lowered, the hook members will be turned upwardly and downwardly. The frame 16 tends to move to lowermost position by gravity in which position it will be separated from the frame 13, but this movement is ordinarily prevented by means of a lever 18 which is centrally fulcrumed to a projection 19 on the frame 13 and has the inner end connected to the frame 16 while the outer end carries a pin 20 adapted to engage a cam 21 on the sleeve 14, which cam has at one point a depression 22 therein, as described in my earlier application, by means of which the pin at one point is freed and may move upwardly, at which point the frame 16 will move downwardly by gravity carrying all the arms 17 downwardly and tilting the hook members 15 to discharged position, when the sheaves carried thereby will drop in the form of a shock. The inner sides of

the sheaves are adapted to be supported on the carrying member by a core member E which is conoidal in form and carried by the frame 16.

5 The upending mechanism for the sheaves comprises two discharge arms adapted to tilt the head of the sheaf upwardly, a retaining member for the butt of the sheaf and supporting members for the butt and 70 head of the sheaf said retaining and supporting members being operated by the sheaf itself. Two discharge arms F and G are carried by the shaft 21^a of the knotting mechanism and are adapted to collapse at 10 a given point to permit the sheaf to pass them. This is accomplished by forming each arm with an outer pivoted section 22^a, which pivoted section is during the greater part of its rotation retained in alignment 15 with the inner section 23 by means of a cam 24 or 24^a which is engaged by the inner end 25 of the pivoted section, the pivoted section of the arm F having a roller 26 thereon to engage the cam while that on the 20 arm G has only a cylindrical projection 27.

The cam 24 which coöperates with the arm F is formed near one extremity with an abruptly and outwardly inclined portion 28 adapted to impart a kick or sudden tilting 30 movement to the section 22 just prior to its collapse, whereby, the sheaf will be thrown smartly to vertical position. The cam 24^a coöperating with the arm G is not formed with such a projection, as this arm engages 35 the sheaves farther down from the head and it is not necessary that it should be thrown upwardly as quickly.

The butt of the sheaf is retained from swinging upwardly by a rigid retaining arm 40 29 curved to engage the upper part of the butt of the sheaf. The lower part of the butt of the sheaf is adapted to be engaged by a movable supporting member 30 which is adapted to be operated by the sheaf 45 itself during its movement. This arm is formed with an inner portion 31 which is pivoted to a bracket 32 which extends at a slight angle to the binder deck and also with an outer upwardly inclined portion 33. This 50 inclined portion is adapted to be engaged by the butt as it comes down the binder deck and will thus restrain the outward movement of the butt. As the sheaf is turned however, to a vertical position, it 55 will engage the side of the portion 33, causing the arm to tilt in the direction indicated by the arrow in Fig. 1 and thus permit the sheaf to pass the arm as the sheaf is carried away by the carrier.

60 To support the head of the sheaf during the turning movement, a supporting member 35 is provided hinged to the binder deck and normally held in raised position. The means illustrated for holding it in raised 65 position comprise a spring 36 wound about

the shaft 37 which supports the member, said shaft being journaled in suitable brackets 38 carried by the binder deck.

The relative position of the carrier D to the discharge mechanism of the binder is 70 such that each arm will be successively turned in such position that at the moment the sheaf is upended the hook member will come into position just below the cord on the sheaf and the sheaf will thus be engaged 75 by the hook member. Each arm then passes on the grainward side of the supporting member 35, the supporting member yielding outwardly during the upending of the sheaf and returning to the inner position 80 indicated in Fig. 1, as soon as the sheaf is caught on the hook, whereby, the sheaf and hook may pass onward to the stubbleward side of the supporting member. The mechanism is so adjusted that the sheaves will fit 85 closely to the core E and will be overlapped thereon so that when discharged they may form an effective shock.

The operation of the machine may be summarized briefly as follows: The sheaf moving down the binder deck is retained momentarily by the arm 29 engaging its butt at the same time as the discharge arms F and G engage the upper part of the sheaf and upend the same as already explained. 90 The supporting members 30 and 35 are actuated by the sheaf itself as hereinbefore explained. The moment the sheaf assumes a substantially vertical position it is met by one of the arms on the carrier D and the 95 cord slips onto the hook member thereon and the sheaf is carried away. Finally when all the arms have been filled, the hook members are simultaneously discharged, dropping the sheaves in the form of a shock. 100

As many changes could be made in the above construction and many apparently widely different embodiments of my invention, within the scope of the claims, constructed without departing from the spirit 110 or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as 115 illustrative and not in a limiting sense.

What I claim as my invention is:

1. In a sheaf shucker and in combination, 115 means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, each adapted to swing into position adjacent to the upended sheaf and each provided at its extremity with a hook member adapted to engage the cord on the sheaf.

2. In a sheaf shucker and in combination, 120 means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, each adapted to swing into position adjacent to the upended sheaf and each pro- 125

vided at its extremity with a tilttable hook member adapted to engage the sheaf and means for simultaneously tilting all the hook members downwardly.

5. In a sheaf shocker and in combination, means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, each adapted to swing into position adjacent to the upended sheaf and each provided at the extremity with a movable hook member adapted to engage the cord on the sheaf, and means for simultaneously actuating the hook members to dis-charge the sheaves in the form of a shock. 70

4. In a sheaf shocker and in combination, means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, pivoted hook members supported at the extremities of said arms, means for actuating said hook members, said actuating means comprising a rotatable and axially movable member on the carrier, 20 arms connecting said axially movable member with each hook member, and means for causing movement of said axially movable member at a determined point in its revolution. 80

25 5. In a sheaf shocker and in combination, means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, each adapted to swing into position adjacent to the upended sheaf and each provided at its extremity with a hook member adapted to engage the cord on the 90 sheaf, and a central core member adapted to support the inner sides of the sheaves on the collecting member. 95

30 6. In a sheaf shocker and in combination, means for upending the discharging sheaves, a sheaf collecting member comprising a rotatable collar with rigid arms rigidly attached thereto, each adapted to swing into position adjacent to the upended sheaf and each provided at its extremity with a hook member adapted to engage the cord on the 100 sheaf, and a central core member adapted to support the inner sides of the sheaves on the collecting member, said core being conoidal in form. 110

35 7. In a sheaf shocker and in combination, a carrier for the sheaves comprising a rotatable collar with rigid arms rigidly attached thereto, said arms having means for engaging the outer sides of the sheaves, means for upending the sheaves and placing them in engagement with the means on the 115 arms, and means for simultaneously releasing all the sheaves so that they will drop in the form of a shock. 120

40 8. In a sheaf shocker and in combination shocking mechanism having means to upend the sheaf as it leaves the binder, means to

carry the upended sheaf away and to drop a plurality of upended sheaves in the form of a shock, and a butt supporting member hinged to the binder deck to swing horizontally and adapted to engage the underside of the butt of the sheaf as it leaves the binder deck during upending and being adapted to swing clear of the sheaf as it is carried away. 75

9. In a sheaf shocker and in combination shocking mechanism having means to upend the sheaf as it leaves the binder, means to carry the upended sheaf away and to drop a plurality of upended sheaves in the form of a shock, and a butt supporting member hinged to the binder deck to swing horizontally and adapted to engage the underside of the butt of the sheaf as it leaves the binder deck and during upending and being adapted to be swung by the sheaf away 85 from the normal position to give the sheaf clearance past it. 90

10. In a sheaf shocker and in combination shocking mechanism having means to upend the sheaf as it leaves the binder, means to carry the upended sheaf away and to drop a plurality of upended sheaves in the form of a shock, and a butt supporting member pivoted to swing horizontally and being supported from the binder deck and extending upwardly therefrom and being adapted to limit the outward movement of the butt of the sheaf as it comes off the binder deck and to form a fulcrum for the butt during upending, said member being free to swing laterally to give clearance to the sheaf. 95

11. In a sheaf shocker and in combination shocking mechanism having means to upend the sheaf as it leaves the binder, means to carry the upended sheaf away and to drop a plurality of upended sheaves in the form of a shock, a bracket on the binder deck extending at an angle thereto, and an upwardly inclined arm hinged to the bracket 105 and adapted to swing laterally, said arm being adapted to form a support for the sheaves during upending. 110

12. In a machine of the class described, the combination with the knotting mechanism of the binder and the shocking mechanism adapted to receive and shock the sheaves of an upending mechanism including a rotating arm carried by the shaft of the knotting mechanism having a pivoted outer end and means for holding said outer end rigidly, said means including a cam adapted to engage a portion of said outer end. 115

13. In a sheaf shocker an upending dis-charge arm formed with a hinged outer section and means for collapsing said outer section at a determined point and means for imparting a kick or sudden movement to said outer section just prior to collapse. 125 130

14. In a sheaf shocker an upending mechanism including a rotating arm formed with a pivoted outer section, a fixed cam engaging said outer section and adapted to release it at a given point, said cam being formed with an outwardly curved portion adapted to impart a sudden kick to the outer portion just prior to collapse.

15. In a sheaf shocker an upending mechanism including a rotatable discharge arm having a hinged outer portion adapted

to swing backwardly at a given point, a retaining member for the butt of the sheaf, and a pivoted supporting member for the head of the sheaf yieldably held in normal upright position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM HUMPHRY PERRIN.

Witnesses:

E. M. FERGUSON,
W. J. ERNENSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
