April 1, 1924. 1,488,540

S. S. HARTER

GRAIN SHOCKER ATTACHMENT FOR BINDERS

Filed Nov. 28, 1921 2 Sheets-Sheet 1

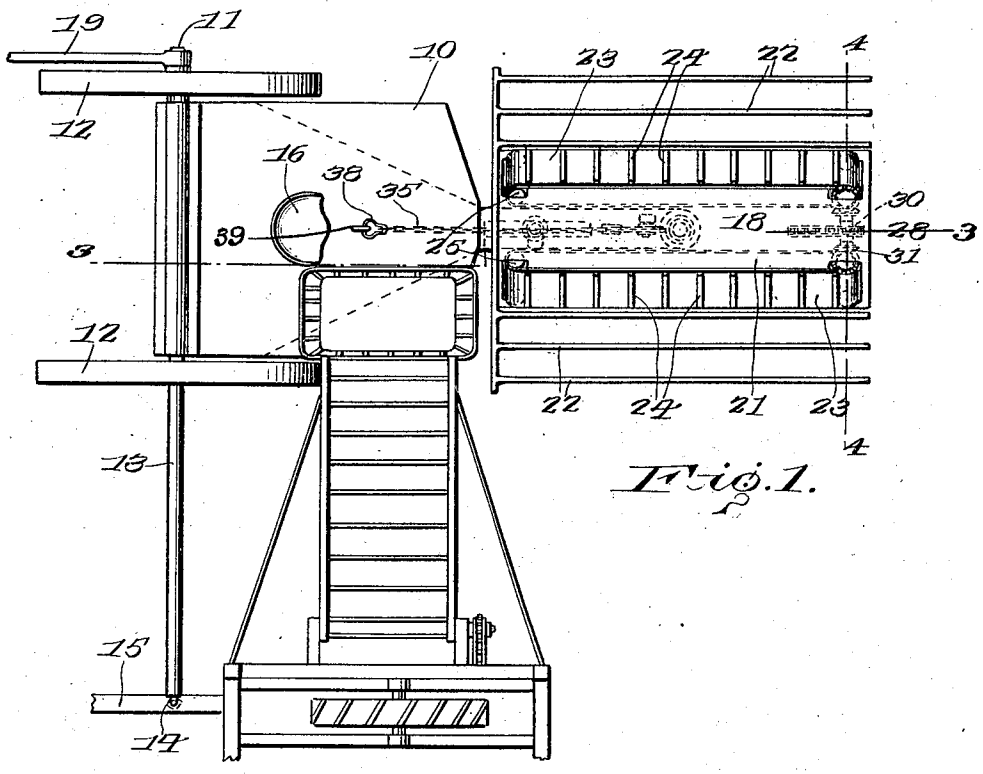


Fig. 1.

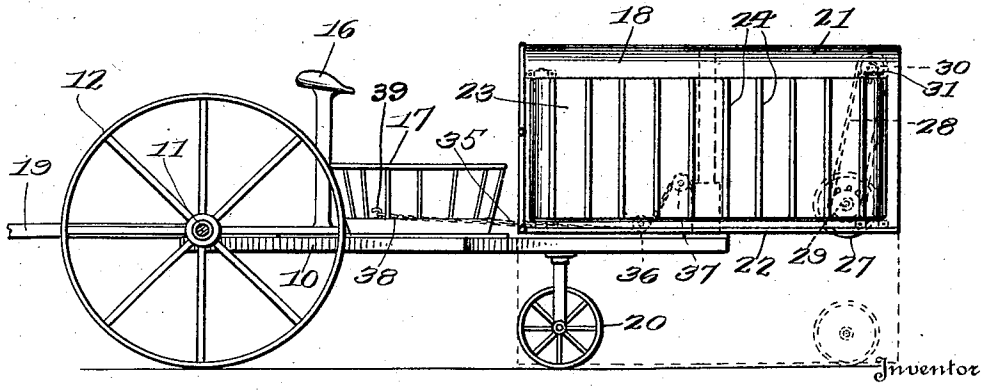


Fig. 2.

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Fig. 3.

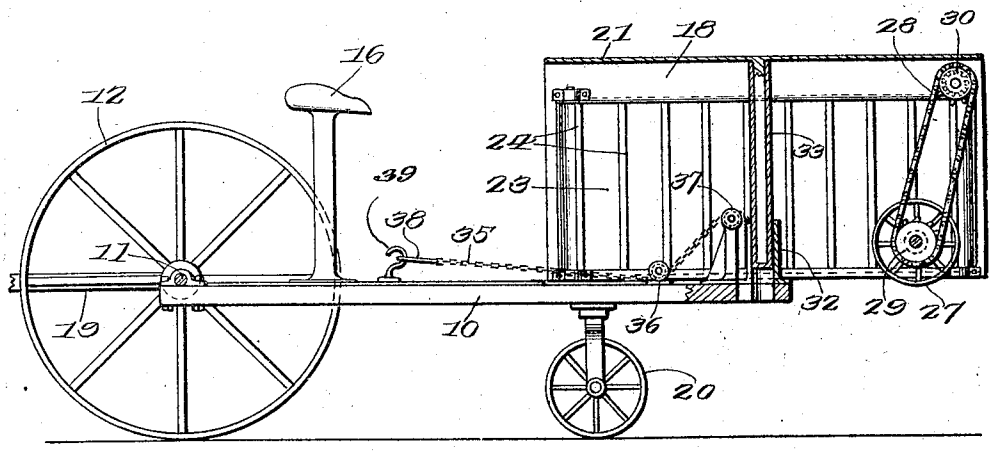
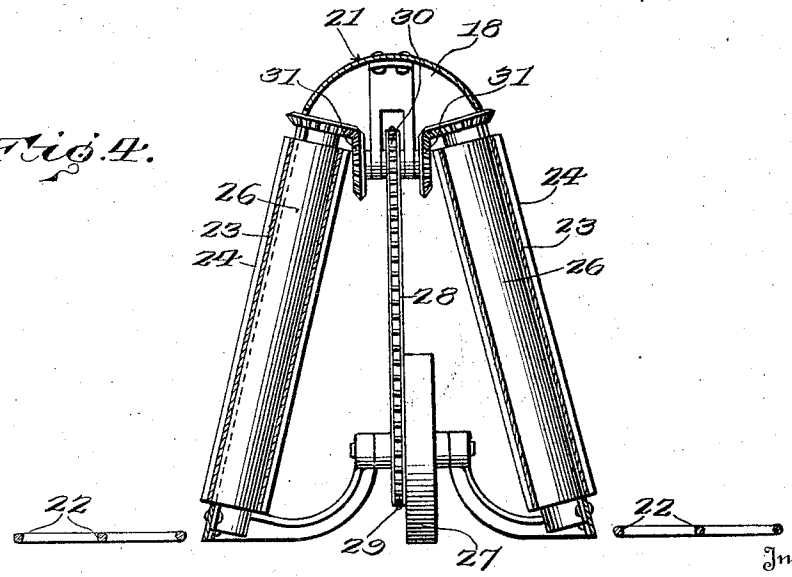


Fig. 4.



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UNITED STATES PATENT OFFICE.

SPURGEON S. HARTER, OF CHADWICK, ILLINOIS.

GRAIN-SHOCKER ATTACHMENT FOR BINDERS.

Application filed November 28, 1921. Serial No. 518,349.

To all whom it may concern:

Be it known that I, SPURGEON S. HARTER, a citizen of the United States, residing at Chadwick, in the county of Carroll, State of Illinois, have invented certain new and useful Improvements in Grain-Shocker Attachments for Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the invention is to provide a comparatively simple and efficient means for shocking grain as the bundles are received from a binder of any of the conventional types, under such conditions that when served by a single attendant, the apparatus is adapted to do the work which ordinarily requires several men, and which insures the shocking of the grain under such conditions as to afford a free circulation of air through the shock to facilitate the curing therefore, and furthermore under such conditions that the risk of falling or disarrangement of the shock after it has been set or placed is minimized; and with this general object in view, the invention consists in a construction, combination and relation of parts of which a preferred embodiment is illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the shocker shown in operative relation with a binder of the conventional type, a portion of the latter only being shown to illustrate the relation of the shocker thereto.

Figure 2 is a side view of the shocker showing the shock former in full lines in its elevated and in dotted lines in its lowered or shock discharging position.

Figure 3 is a longitudinal sectional view of the shock former and related parts of the machine, on the line 3—3 of Fig. 1.

Figure 4 is an enlarged vertical transverse sectional view of the same, on the line 4—4 of Figure 1.

The shocker embodies a wheel supported frame 10 which for convenience and preferably is of rearwardly tapered form in plan with the axle 11 upon which the wheels 12 are mounted extended to form a spacing arm 13 for terminal attachment as by means of a bolt 14 or its equivalent to a convenient portion of the binder indicated at 15, to the end that the forward movement of the shocker may be effected by the binder to maintain a proper relation of the same during operation to enable the attendant for whose convenience a seat 16 is provided to remove the bundles successively from a suitable basket or receptacle 17 supported by the binder in convenient relation to the shocker and place the same in the proper position upon the shock former indicated generally at 18 and supported by the frame of the shocker. A draft rod 19 is also employed as a means of connecting the front end of the shocker frame with the binder frame to avoid the lateral strain which otherwise would be applied to the spacing arm 13. Also a rear supporting or caster wheel 20 is preferably employed under the frame to more directly sustain the weight of the shock former.

The shock former consists essentially of a transversely arched frame 21 having side forks 22 of which the fingers extend rearwardly and are free at their rear terminals, said fingers being arranged in a substantially horizontal plane to form a rest, seat or shelf for the bases of the bundles of grain, and disposed in upwardly convergent relation between the forks are the longitudinally movable endless belts 23, preferably provided with upright slats 24 which are thus disposed transversely of the direction of movement of the belts which traverse rollers 25 and 26 respectively at the front and rear ends of the shock former and are designed to move with relation to the forks as a means of carrying the shocked bundles from the former when the latter is lowered to the dotted line position indicated in Figure 2.

During the stacking of the bundles on the former, which operation is accomplished manually, the carrier belts should remain stationary, and in practice it is proposed to arrange a series of bundles on each of the side forks, the bundles in said series being arranged close together longitudinally and in an upright position leaning against the belts with their bases resting on the forks and to then place a second series of bundles respectively opposite the lines between the bundles of the first series, and leaning against the bundles of the first series, so as to key the shock by causing the bundles of the second series to hold those of the first series in position. The bundles may be taken successively from the basket or receptacle on the binder at one side of the operator's seat 16 and placed, as above in-

dicated, in the proper position on the former.

When it is desired to discharge a completed shock, it is proposed to lower the former until the tongues or fingers of the forks rest upon the ground or stubble so that the bases of the bundles forming the shock may be engaged by the stubble or be brought into contact with the ground so that the continued forward movement of the shocking mechanism will leave the shock in a standing position. To effect the feeding and therefore shock carrying movement of the belts, when the former reaches the shock discharging position, there is provided a feed wheel 27 so mounted and positioned on the frame of the former as to come into contact with the ground when the former is lowered and so as to receive rotary motion due to the forward movement of the shocker and connections are provided between said feed wheel and the rollers carrying the belts to the end that they receive a rearward progressive movement at their outer sides against which the shock bundles are resting. In the construction illustrated, a sprocket chain 28 traversing a sprocket wheel 29 carried by the feed wheel extends to a sprocket wheel 30 which is connected by gearing 31 with the rear rollers or drums 26 traversed by the belts. Therefore, while the belts are stationary with relation to the shock former when elevated, and during the positioning of the bundles thereon to form the shock, a rearwardly progressive movement is imparted to the belts as soon as the former reaches the depressed position indicated in dotted lines in Figure 2 to facilitate the withdrawal of the forks from beneath the bundles as the shocker advances with the binder, and the shock is therefore left in its original standing position on the field, with the upper ends of the bundles forming the inner series in contact and with a longitudinal ventilating space through the entire shock to allow a circulation of air.

The means for supporting the shock former on the frame consists in the construction illustrated of an extensible post including a tubular member 32 rising from the rear end of the frame and having an upper member 33 attached to the frame of the shock former and telescoped in said tubular member, said upper member being movable by an operating chain 35 traversing a series of direction pulleys 36 and 37 and provided within convenient reach of the operator with a grip or handle 38 for which there is provided a hook 39 to lock the chain and also the movable member of the post in its elevated position to hold the shock former elevated during the formation of the shock thereon.

What is claimed is:

1. A shocking attachment for a binder having a wheel supported frame, means for connecting the same with the binder frame, a shock former mounted upon and movable vertically with relation to said wheel supported frame and having bundle supporting forks provided with rearwardly directed terminally free fingers for arrangement in tailing contact with the ground, the connection between the wheel supported frame and the binder consisting of a draft rod and a laterally directed spacing arm, the latter being disposed in substantial alignment with the axes of the supporting wheels of the frame, and means for raising and lowering the former.

2. A shocker for use in connection with a binder and adapted for progressive movement therewith, having a supporting frame, a shock former mounted upon and movable vertically with relation to the frame and provided with side bundle supporting forks having rearwardly directed terminally free fingers for trailing relation with the ground when the former is lowered, and also provided with upwardly convergent aprons disposed between said forks and means for raising and lowering the former.

3. A shocker for use in connection with a binder and adapted for progressive movement therewith, having a supporting frame a shock former mounted upon and movable vertically with relation to the frame and provided with side bundle supporting forks having rearwardly directed terminally free fingers for trailing relation with the ground when the former is lowered, and also provided with upwardly convergent aprons disposed between said forks, and means for raising and lowering the former consisting of an upright extensible post having a movable upper member to which the former is attached.

4. A shocker for use in connection with a binder and adapted for progressive movement therewith, having a supporting frame, a shock former mounted upon and movable vertically with relation to the frame and provided with side bundle supporting forks having rearwardly directed terminally free fingers for trailing relation with the ground when the former is lowered, and also provided with upwardly convergent aprons disposed between said forks, and means for raising and lowering the former consisting of an upright extensible post having a movable upper member to which the former is attached, and said raising and lowering means consisting of a chain connected with said movable member and provided with locking devices for holding the latter in its elevated position.

5. A shocker for use in connection with a binder and adapted for progressive movement therewith, having a supporting frame, a shock former mounted upon and movably

vertically with relation to the frame and provided with side bundle supporting forks having rearwardly directed terminally free fingers for trailing relation with the ground when the former is lowered, and also provided with upwardly convergent aprons disposed between said forks, and means for raising and lowering the former, said aprons being endless and mounted upon terminal upright rollers for progressive movement longitudinally of the side forks and means actuable when the former is lowered for imparting progressive movement to said belts.

6. A shocker for use in connection with a binder and adapted for progressive movement therewith, having a supporting frame, a shock former mounted upon and movably vertically with relation to the frame and provided with side bundle supporting forks having rearwardly directed terminally free fingers for trailing relation with the ground when the former is lowered, and also provided with upwardly convergent aprons disposed between said forks, and means for raising and lowering the former, said aprons consisting of endless belts carried by upright terminal rollers for progressive movement longitudinally of the forks, a feed wheel mounted upon the former for contact with the ground when the former is in its lowered position and operating connections between said feed wheel and the belt rollers.

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

SPURGEON S. HARTER.

Witnesses:
JOHN O. KERCH,
HENRY C. HINKEL.