

(No Model.)

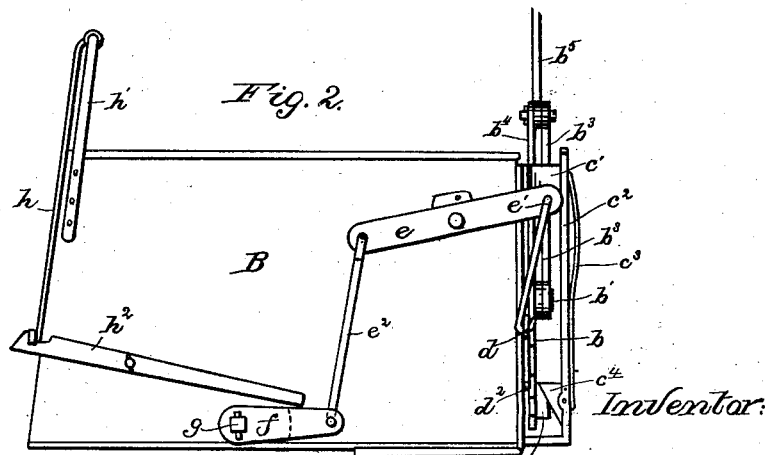
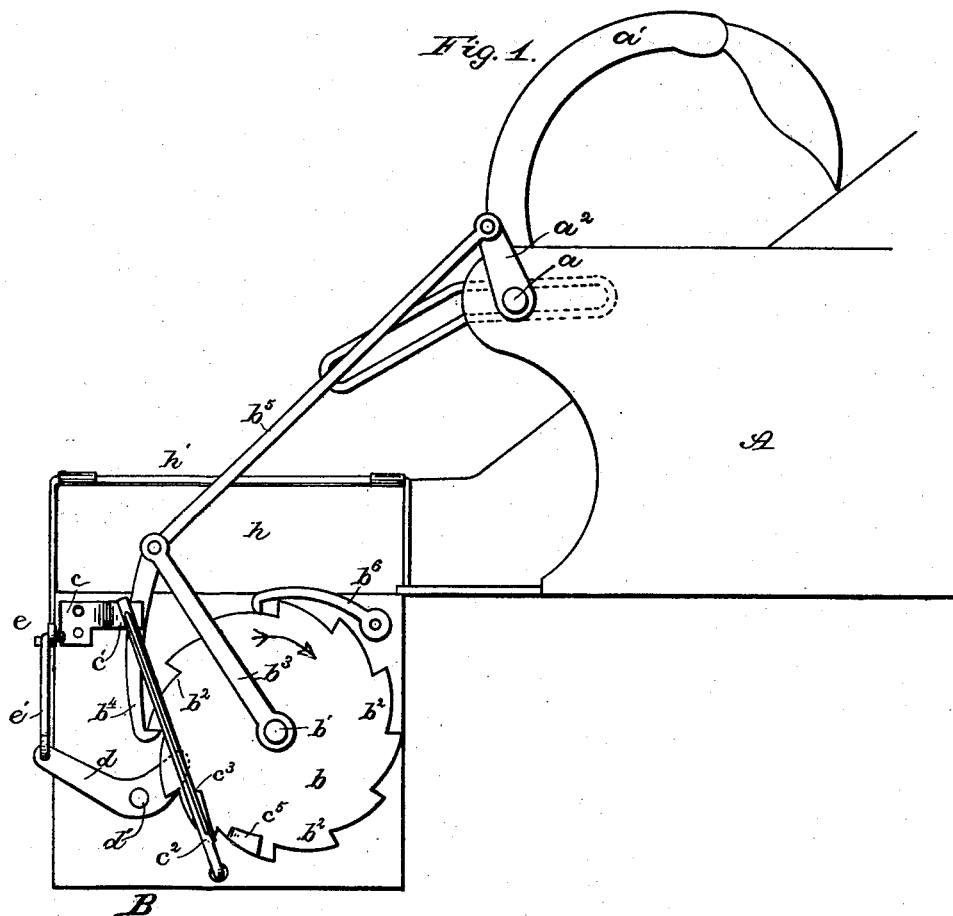
2 Sheets—Sheet 1.

J. PEARCE.

SHEAF DUMPER FOR SELF BINDING HARVESTERS.

No. 264,563.

Patented Sept. 19, 1882.



Witnesses:

J. W. Garner
H. S. D. Haines

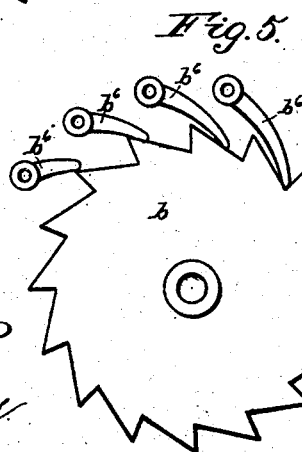
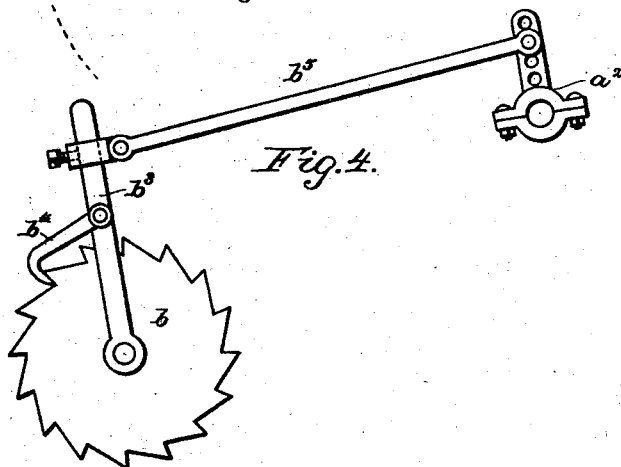
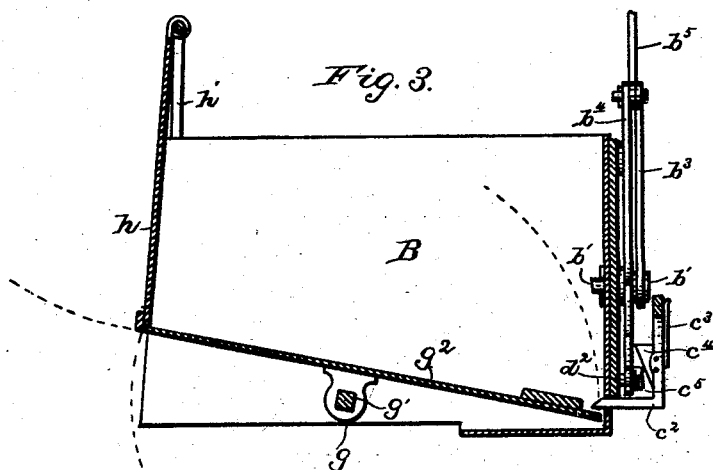
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UNITED STATES PATENT OFFICE.

JONATHAN PEARCE, OF KANSAS CITY, MISSOURI.

SHEAF-DUMPER FOR SELF-BINDING HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 264,563, dated September 19, 1882.

Application filed July 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN PEARCE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Sheaf-Dumpers for Self-Binding Harvesters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to sheaf-carriers for self-binding harvesters; and it consists in the construction and arrangement of its several parts, as will be hereinafter fully set forth, and pointed out in the claims.

In the drawings, Figure 1 is the front end elevation of my carrier and dumper attached to the binding-table of a self-binding harvester; Fig. 2, a side elevation of the carrier and dumper; Fig. 3, a vertical longitudinal section of the box; and Figs. 4 and 5 are detailed modifications.

A represents a portion of the binding-table of a harvester. a is the binder-shaft, and a' the binder-arm. These portions of the harvester are shown, however, merely to illustrate the application of my carrier and dumper thereto and the method of communicating motion to its operating mechanism.

The carrier and dumper-box B is secured to the outer side of the table in any secure manner which experience may determine best. The means of attachment are consequently not specifically shown. The carrier and dumper B consists of a square or rectangular box having a pivoted and tilting bottom and a hinged tail-gate, as shown. Upon its front end is placed the mechanism for tilting the bottom, releasing the tail-gate, and registering the bundles, as will be hereinafter more fully set forth.

Journaled to the front end of the box, a little to the right hand of the center, on the journal-pin b' , is a wheel, b , having ratchets b^2 around its periphery; and journaled upon the same pin is a supporting-lever, b^3 . This lever extends about one-third its length above the upper edge of the box, in order that a sufficient travel may be secured for the actuating-pawl.

Journaled to the upper end of the lever b^3 , and arranged to swing outwardly, is the pawl b^4 .

This pawl engages with the ratchets b^2 of the wheel b , as shown. Also journaled to the upper end of the lever b^3 , extending inwardly and journaled to a rock-arm, a^2 , situated on the binder-shaft a , is the connecting-rod b^5 . This rod communicates motion from the binder-shaft to the pawl b^4 , and from thence to the wheel b by the ratchets b^2 .

The binder-arm a' (shown in Fig. 1) is of that class of binders wherein the said arm makes a partial revolution to accomplish its work; but in those machines wherein the binder arm or arms make a complete revolution, or more than one revolution, I provide that the motion may be communicated to the rod b^5 by an eccentric, or by any other suitable mechanism.

Pivoted to the upper right-hand end of the box is a lock-pawl, b^6 , which engages with the ratchets b^2 and prevents the wheel from slipping back while in operation.

Secured to the upper left-hand corner of the box is a plate, c , provided with an angle-projection, c' , as shown. Secured to this projection, and extending downwardly across the outer edge of the wheel b , is the spring-latch c^2 . The lower end of this latch is turned inwardly and passed into the box above the bottom, through a suitable hole in its end, as shown. By this means the bottom of the box is prevented from tilting until the latch is withdrawn by the mechanism provided for the purpose, as will be hereinafter fully set forth. The latch is held pressed into the hole by the spring c^3 , which is formed of an extension of the pivotal pin of the latch. It extends downwardly along the latch and presses against its lower portion, as shown most clearly in Fig. 2. Secured to the inner side of the latch, in such position that it bears against the wheel b just within the ratchets b^2 , is the beveled lug c^4 ; and placed upon the wheel, in such position that it passes under the lug c^4 , is the beveled projection c^5 . By this arrangement, as the wheel b revolves and the projection c^5 passes under the lug c^4 , the bent portion of the latch will be withdrawn from the box and the bottom thereof allowed to tilt.

Pivoted by the pin d' to the front end of the box, below the center of the wheel b and to the left of it, is the tilt-lever d , the arms of

which are bent upwardly from the pivotal point, in order that a proper elevation be secured to operate the mechanism. The inner arm of the lever extends behind the wheel *b*, as shown in dotted lines, Fig. 1, or, in other words, between it and the box, and is tilted by the lug *d*², situated on the opposite face of the wheel from the projection *c*⁵, as shown. The wheel *b* revolves from the left to right, as shown by the arrow, and the lug *d*² raises the inner arm of the lever and depresses the outer arm.

Pivoted to the outer side of the box, near its upper right-hand corner, is the transmitting-lever *e*, the right-hand arm of which projects slightly from the front of the box, and is connected with the tilt-lever *d* by the rod *e'*, as shown. The opposite or rear arm of the lever communicates with the tilt-crank *f* by the rod *e*², which is pivoted to the end of the lever *e* and that of the tilt-crank *f*. The crank *f* is secured upon the end of the tilting-shaft *g*, which passes across the bottom of the box a little to the rear of its center, as shown. Secured upon this shaft by lugs *g'* is the bottom *g*². It sets at an incline toward the front of the box, so that the weight of the bundles will be drawn toward that end and the latch relieved of unnecessary strain, occasioned by an accumulation of bundles in the rear portion of the box, and also that the box can be set near to the ground, and the elevation of the rear end of the bottom will allow sufficient space for the dumping of the bundles. It can be readily seen that if the bottom *g*² sits level the box would have to be carried higher from the ground in order to allow sufficient dumping-space.

The tail-gate *h* is hinged upon a frame, *h'*, raised above the top edge of the box, and is held in place by the latch *h*², pivoted to the side of the box, its front end resting upon the top of the crank *f* and operated by it, as shown.

In the operation of the device a reciprocating motion is transmitted to the rod *b*⁵, supporting-lever *b*³, and pawl *b*⁴ by the crank *a*², or by an eccentric or any other mechanical equivalent necessary to transmit the motion. This motion is transmitted to the pawl *b*⁴, and causes the same to move back and forth along the ratchets *b*², to engage with one or more of them in the inward stroke, and to drop from each in the outward stroke. This action causes the wheel *b* to revolve from left to right (see the arrow) one notch, or a portion of a notch, as may be provided for by lengthening the lever and using a number of pawls, *b*⁶, each of different lengths, for each stroke of the pawl *b*⁴, the wheel being held from slipping by the lock-pawl *b*⁶, or by one of several pawls, *b*⁶. As the wheel revolves the projection *c*⁵ gradually approaches the lug *e*⁴, and when the projection reaches the lug said projection will force the bent lower end of the latch out of the box and release the bottom *g*². At the same time the lug *d*² strikes the inner arm of the tilt-lever *d*, carries it upwardly, and depresses the outer end. The rod

e' draws down the forward end of the lever *e* and elevates the rear end. The rod *e*² draws up the crank *f*, which rocks or tilts the bottom *g*² and dumps the bundles. It also raises the end of the latch *h*² and releases the tail-gate, which is forced open by the bundles. After the lug *d*² has passed the lever *d* and the projection *c*⁵ the lug *e*⁴, the bottom will tilt back to its proper position by gravity and the latch will spring back into place within the box. The parts then remain fixed until the wheel has made another revolution. I provide, however, that if it be desired to tilt more than once during a complete revolution more than one lug *d*² and projection *c*⁵ can be placed upon the wheel *b*.

The advantages of the rigid attachment of the box and the arrangement of its bottom to tilt by means of the mechanism set forth are that the box can be more strongly secured to the harvester, made much lighter, and so be capable of bearing a greater weight of bundles, and the bottom, by having the securely-attached sides of the box to rest against, will be fully able to sustain heavy weights.

In Fig. 4, *a*² represents the rock-arm, adapted to be bolted to the binder-shaft; *b*⁵, the communicating-rod; *b*³, the supporting-lever; *b*⁴, the actuating-pawl, and *b* the ratchet-wheel. The device shows a modification wherein the throw of the pawl may be regulated by means of the sliding collar, adapted to be set at any point upon the length of the lever *b*³ by a set-screw, as shown. In the rock-shaft I show a series of holes whereby the same object is accomplished.

In Fig. 5 I show a series of lock-pawls, *b*⁶, of unequal length, arranged around the periphery of the wheel *b*, and adapted to take into the ratchets upon very slight movement of the wheel, whereby the extent of the revolution for each throw of the lever *b*³ is regulated. I further provide that a wheel may be used to support the outer portion of the box.

Having described my invention, what I claim is—

1. In combination with a harvester, a rigidly-attached box having a tilting bottom and a hinged tail-gate, said bottom adapted to be tilted and the tail-gate released by mechanism actuated by communication with the binding mechanism of a harvester, as shown and described.

2. The combination, with a harvester, of the box *B*, secured to the table *A*, binder-shaft *a*, provided with the rock-arm *a*², rod *b*⁵, supporting-lever *b*³, pawl *b*⁴, ratchet-wheel *b*, having the lug *d*², the tilt-lever *d*, rod *e'*, lever *e*, rod *e*², crank *f*, shaft *g*, and bottom *g*², all arranged to operate substantially as shown and described.

3. The combination, with the binding mechanism of a harvester, of the bottom *g*² and its tilting and releasing mechanism, arranged to connect with said binding mechanism and to operate substantially as shown and described.

4. The tail-gate *h*, hinged to the frame *h'*,

situated upon the rear end of the box, said gate being held against the box by the pivoted latch h^2 , the forward end of which rests against the crank f , whereby when the crank is tilted the latch is raised and the gate released, as set forth.

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5. The combination, with the harvester, its binder-shaft a , crank a^2 , and connecting-rod b^5 , of the box B, provided with the lock-pawl b^6 , the ratchet-wheel b , having a lug, d^2 , and projection c^4 , the tilt-lever d , rod e' , lever e , rod e^2 , crank f , shaft g , and inclined bottom g^2 of the latch h^2 , tail-gate h , plate c , having projection c' , latch c^2 , having lug c^4 , all arranged to operate substantially as shown and described.

6. The combination, with a carrier and dump-

box for harvesters, having a ratchet-wheel, b , journaled upon a pin, b' , and lock-pawl b^6 , of the supporting-lever b^3 , journaled upon the pin b' , the pawl b^4 , pivoted in its upper end, 20 and a rod, b^5 , connecting it with the binder-shaft of a harvester, whereby a reciprocating motion is transmitted to the pawl b^4 and lever b^3 and the wheel b made to revolve, substantially as shown and described. 25

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

JONATHAN PEARCE.

Witnesses:

G. T. CHASE,

P. PRINTZ.