

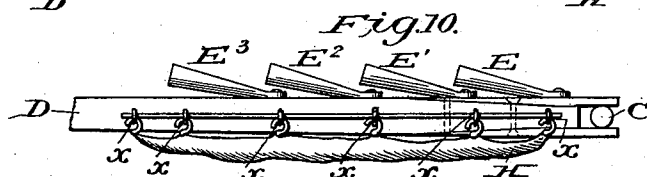
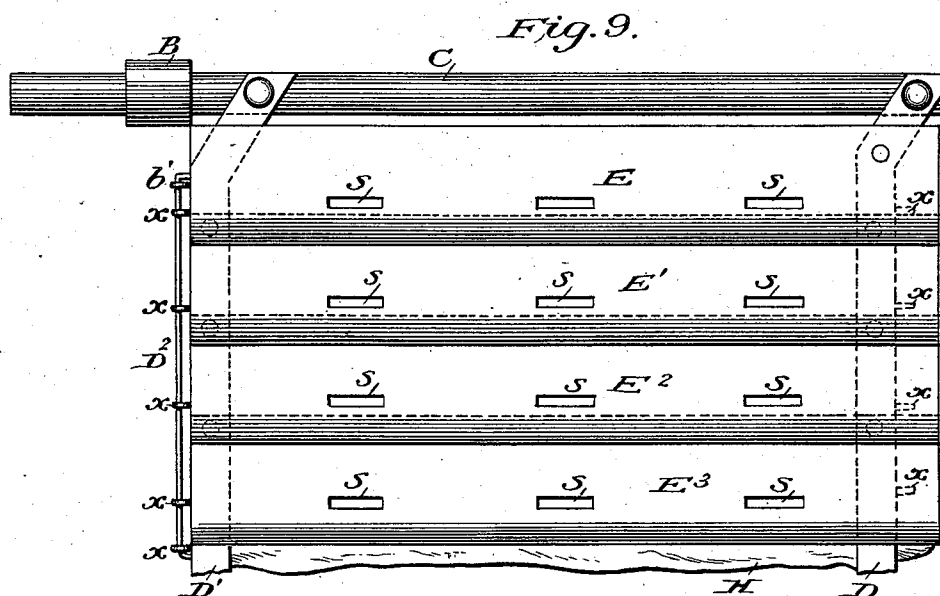
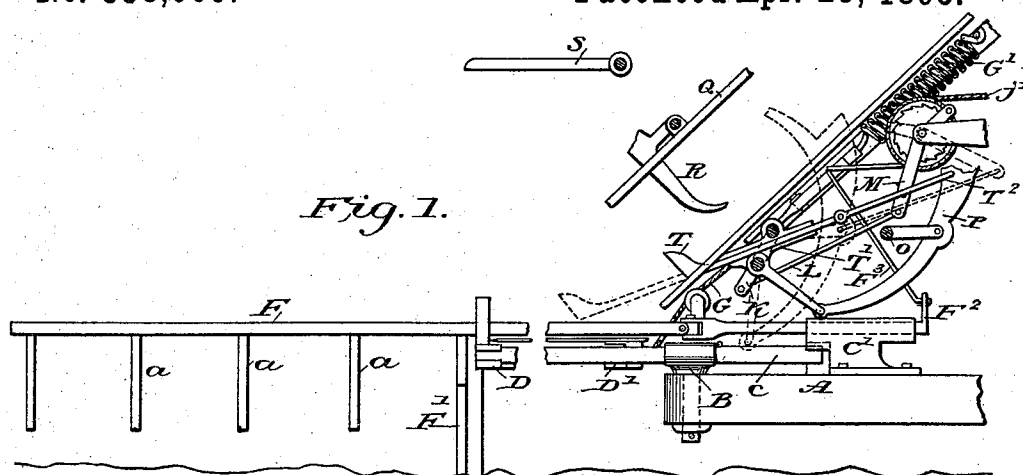
(No Model.)

4 Sheets—Sheet 1.

W. W. BURSON.
SHEAF CARRIER.

No. 538,009.

Patented Apr. 23, 1895.



Witnesses.

Witnesses:
John M Culver
E. E. Clinton.

Inventor.

Inventor.
William North Burson
by his Attorney
R. B. Swift.

(No Model.)

4 Sheets—Sheet 2.

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FIG. 11.

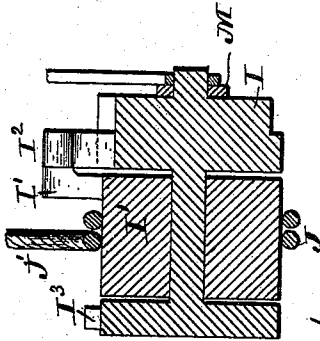
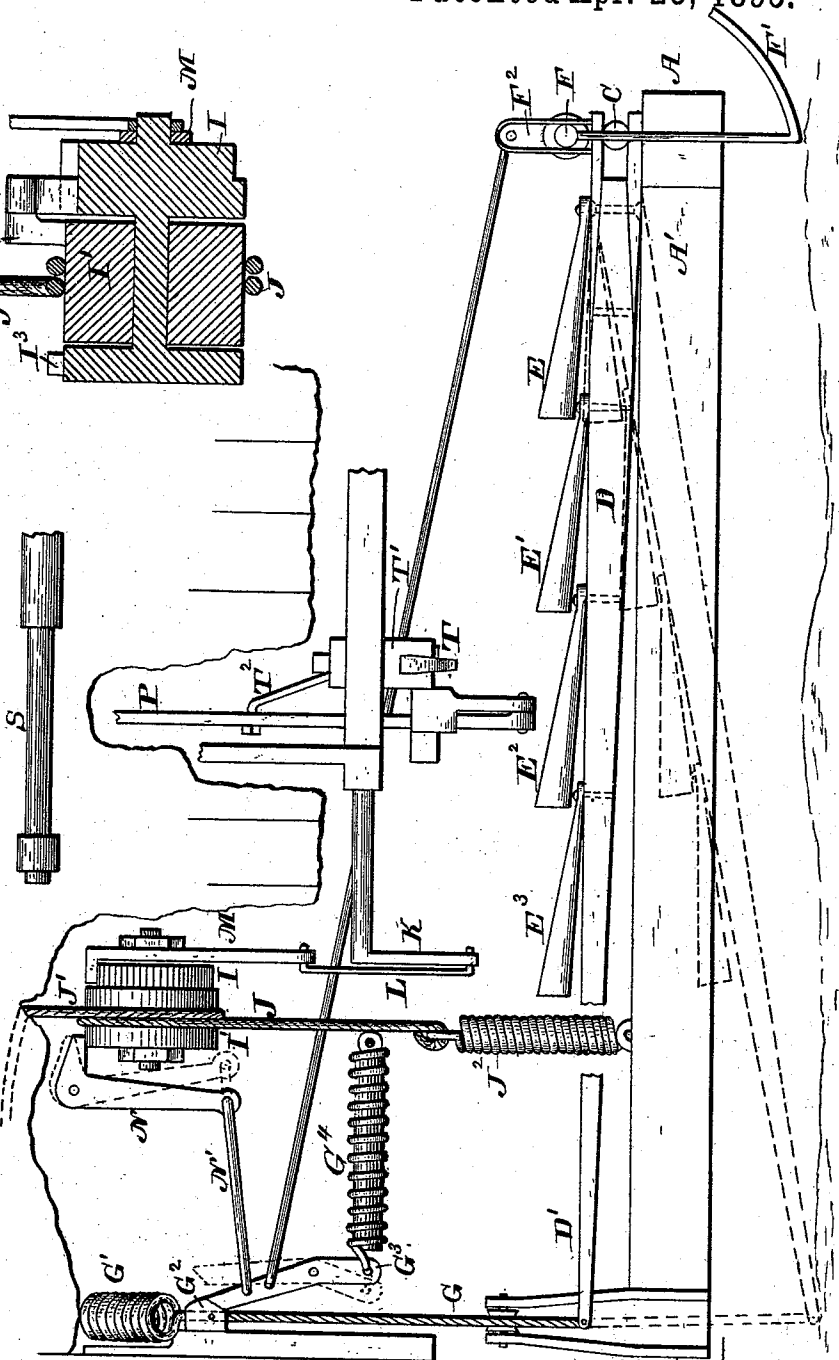


FIG. 2.



ATTEST—

J. Henry Kaiser.
Wm. S. Scott.

INVENTOR—

William W. Burson.

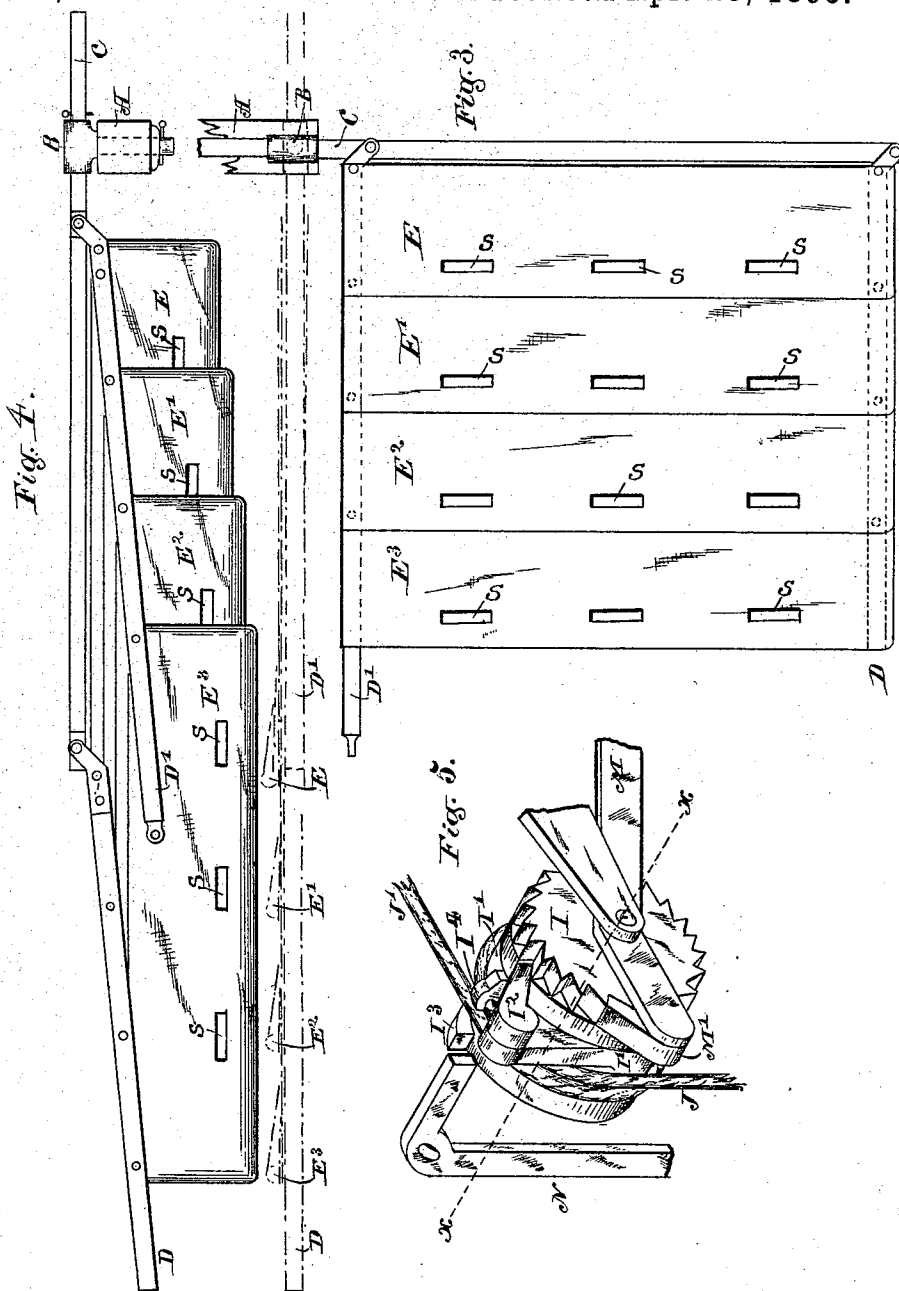
(No Model.)

4 Sheets—Sheet 3.

W. W. BURSON.
SHEAF CARRIER.

No. 538,009.

Patented Apr. 23, 1895.



Witnesses:

Lew. C. Curtis
Edw. S. Evans

Inventor.

William Worth Burson.

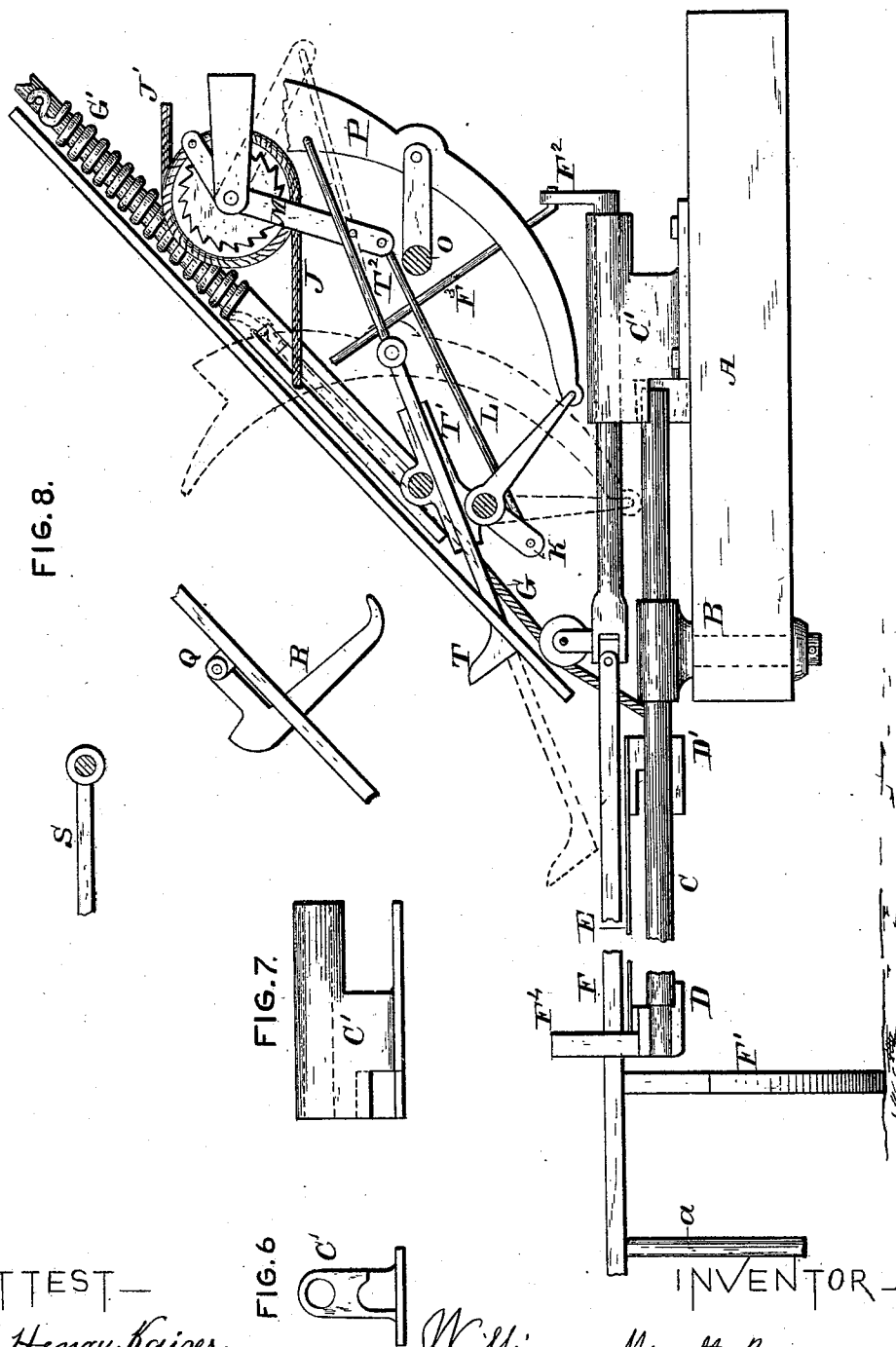
(No Model.)

4 Sheets—Sheet 4.

W. W. BURSON.
SHEAF CARRIER.

No. 538,009.

Patented Apr. 23, 1895.



UNITED STATES PATENT OFFICE.

WILLIAM WORTH BURSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE
McCORMICK HARVESTING MACHINE COMPANY.

SHEAF-CARRIER.

SPECIFICATION forming part of Letters Patent No. 538,009, dated April 23, 1895.

Application filed September 16, 1886. Serial No. 213,652. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WORTH BURSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Sheaf-Carrier, of which the following is a specification.

My invention relates, first, to an attachment to harvesters whereby the sheaves when bound may be carried until a sufficient number have been accumulated and then deposited on the ground by the action of the driver; second, the dumping process may be done automatically, when an agreed upon number have accumulated on the carrier; third, the dumping may be automatically accomplished by contact with the sheaves dropped on the former round; fourth, the carrier folds out of the way of stumps, trees, gate posts, &c., automatically, that is, without the attention of the driver; fifth, a shelled grain attachment is added whereby the shelled grain may be saved. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, showing also parts of the binder and harvester. Fig. 2 is a side elevation. Fig. 3 is a plan view. The full lines show the carrier in position to receive the sheaves. The dotted lines show an elevation of the carrier folded horizontally, as in passing an obstruction. Fig. 4 shows the carrier folded and turned in a vertical position. Fig. 5 is a detail of the counting attachment to the carrier. Figs. 6 and 7 show belaying stop C'. Fig. 8 is a front elevation enlarged from Fig. 1, the arm F being partly removed. Fig. 9 is a plan view of carrier platform. Fig. 10 is an end view elevation of Fig. 9. Fig. 11 is a section of Fig. 5 on line *x x*.

Similar letters of reference denote the same parts throughout the several views.

In the drawings, Figs. 1, 2, 3 and 8, A is a part of the harvester frame or an extension therefrom, and A' also a part of the harvester frame, the former supporting the vertically pivoted bearer B, the upper end of which has a horizontal sleeve forming a support for the oscillating arm C in connection with the belaying stop C'. To the arm C are hinged the

supports D, D', on which are secured the boards or pieces E, E', E², E³. The tripping arm F has fingers reaching downward, adapted to engage the sheaves dropped on the former round. It has the runner F' and arm F² and connecting rod F³, to be more fully described farther on. F⁴ is a support for F.

G is a flexible support for the rear end of the carrier attaching arm D' and extending to the driver, not here shown. The spring G' is adapted to balance the weight of the carrier as desired.

G² is a stop block on G, in which the latch G³ engages being held in position by a spring G⁴.

H is a canvas under the receiving pieces E, E³ adapted to save the shelled grain, (Figs. 9 and 10.)

I is a ratchet wheel, in this case with twenty-four teeth, upon one surface in which is an operating pawl M'.

I' is a loose sleeve on I having the pawl I² operating in a notch of I.

I³ is a cam elevation on I.

I⁴ is a keeper for rope J and sleeve I'.

J is a cord extending from the sleeve I' to the spring J² connected with the harvester frame.

J' is a cord extending from the sleeve I' to the reach of the driver.

K is an arm extending from the needle shaft, or may be the needle itself when the construction will so admit of it.

L connects K with the arm M, upon which is the pawl M'.

N is a right angled lever, one end of which rests upon I, and the other end having the rod connection N' with latch G³.

O is the packer shaft of the binder.

P is the packer; Q, part of the breast plate; R, the trip and compress; S, the discharge arm, shown in their normal position in the binder. The connection therewith being so well understood is not here shown.

T is the ejector; T², the rod connecting it with the packer P, Figs. 1, 2 and 8.

The construction of my improved sheaf carrier will be further explained in connection with the description of the operation of the same.

The rod C, which is conveniently made of

gas pipe, is supported in a sleeve on the upper end of the piece B which gives it freedom for two motions. It extends through the sleeve in B to a stop catch C' which holds it in a recess with sufficient force for ordinary work, but will allow it to pass out and turn backward in B when meeting with sufficient resistance. This saves the necessity for removing the carrier in passing obstructions, as also the liability of breakage when striking against such unobserved. The supports D, D' are pivoted to C and adapted to fold close to it.

The pieces E E' E² E³ may be made of boards, or sheet metal. In the latter case a rod could be run in one edge to stiffen it. I prefer to have them overlap a little the better to facilitate the folding process. The pieces E, E', E², E³, are fastened each to the pieces D, D', along one edge only of each piece by a pivoted fastening, which fastenings should be parallel throughout the several pieces. When thus attached they will fold together as shown in Fig. 4, each upper piece extending farther back than the one next under it. It will be seen that the pieces D, D', fold alongside of C, and that the pieces E, E', E², E³, fold one above the other, except that the upper piece is in each case farther back endwise than the one directly under it. A cord attaching the rear end of D' and extending over suitable friction pulley guides to a lever in reach of the driver gives means for operating the carrier. This part of the mechanism is so well understood that I have not thought it necessary to illustrate it. A spring is conveniently attached to counterbalance the weight of the carrier.

When the carrier is constructed as just described it is ready to receive the sheaves from the binder, and when a sufficient number has accumulated the driver releases the cord G, when the automatic attachment is not used which permits the rear end of the carrier to drop and the sheaves are thereby left on the ground, and on each succeeding round it is desirable to drop the sheaves opposite, the better to facilitate the shocking.

To save the driver the trouble of observing the sheaf carrier and dumping the sheaves at the proper time, I have provided a device for accomplishing the same, automatically, shown in Figs. 1, 2, 8 5, and 12. This device consists substantially of a drum revolved by a ratchet operating a trip lever, operating to release the catch holding the supporting cord. The drum I is supported on the harvester frame. Lever M has a pawl M' operating in the ratchet, to turn the drum. Lever M is operated by arm K, through the connecting rod L. At each movement of tying the sheaf, lever K revolves the drum I until the cam block I³ trips lever N, which acting through connecting rod N', releases catch G³ and thereby dumps the sheaves.

It is desirable to control the number of sheaves dropped in a place. This is done by moving the controlling rod L in the holes in

lever M. The nearer the pivoted point of said lever the connection is made the greater the movement of the pawl and hence the fewer sheaves will need to be tied to revolve the drum and the farther from the pivot the slower the movement of the drum and hence the more sheaves would be bound before the trip cam I³ would reach the trip lever N. When the carrier is tripped automatically as just described an agreed upon number of sheaves must be had before they will be dropped. This is not always satisfactory and hence it is desirable to have the dumping under control of the driver. To meet this requirement the sleeve I' is put on the drum I. This sleeve has a pawl I², resting on a part of drum I, which has one catch only corresponding to the trip cam I³. A cord J' is attached to sleeve I' and extends to the driver. It will be seen when cord J' is drawn, the pawl I² will find the notch in drum I no matter in what part of its revolution it may be and turning it until trip cam I³ acts upon trip lever N, trip the carrier without regard to action of ratchet lever M, and that the tripping devices will be in proper shape to repeat the operation. When the driver releases cord J', spring J² brings the sleeve back one revolution to its original position, ready to act again when desired.

It is desirable to drop the sheaves opposite each other in windrows. In the plan just given, this would not necessarily be done without some means of correcting it. To obviate this difficulty trip rake F having the downwardly projecting teeth a, a, a, is adapted to come in contact with the sheaves dropped in the former round and acting through crank F² and rod F³ releases the latch G³ without regard to the other device. Since the trip rake F extends so far from the carrying wheels it is effected by the roughness of the ground. To overcome this difficulty the rake arm is jointed over the carrier support B both vertically and horizontally, thereby permitting the tripping device to swing with the carrier in folding, and to rest on the curved runner or shoe F' by which it will be guided a proper height above the ground without regard to the position of the wheels. These devices can be used together or separately, or the carrier can be operated entirely under the control of the driver. The ejector T is adapted to act upon the bound sheaf where the discharge arms have moved it out of the place in which it is tied.

It has not been practical heretofore to use a sheaf carrier in badly tangled grain, the discharge arm S', (Fig. 1,) frequently becoming entangled in the grain and thereby failing to properly discharge the sheaf. This is especially the case when a sheaf carrier is used. The ejector T moves the sheaf away from the discharge arm and well out upon the sheaf carrier from which it can be dumped, enabling the latter to be used in conditions of grain heretofore impracticable. This ejector

T moves in a guide track T' fastened to the binder frame. It is operated by the rod T² connecting it with the packer P thereby giving it a reciprocating movement.

5 The operation of binding will generally shell more or less grain which has heretofore been wasted. To save this grain I place a canvas bottom H on my carrier adapted to catch and hold the shelled grain. The canvas may extend somewhat back of the lower board Figs. 9 and 10 or there may be openings SS in the upper surface of the carrier to permit the passage of the grain. One side of the canvas should be fastened so as to permit the folding of the carrier, as with rings x, x, x, x, held on a rod D². The other side may be fastened rigid Figs. 9, 10 and 11.

What I claim as my invention is—

1. In a sheaf carrier the combination of an arm extending outward from the harvester and adapted to rock to dump the carrier—said arm being supported in a bearing piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, and a receiving platform one end of which is supported upon said arm and the other end by a releasable part, substantially as set forth.

2. The combination of an arm extending outward from the harvester and adapted to rock to dump the carrier, said arm being supported in a bearing piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, a belaying stop fastened to the harvester frame to hold one end of the rocking arm and to release it against a given pressure, and a carrying platform connected with the rocking arm, as set forth.

3. The combination of an arm extending outward from the harvester and adapted to rock to dump the carrier, having its bearing in a piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, a receiving platform fastened to two supporting pieces which are hinged at one end vertically to the rocking arm and adapted to fold to the side of the same, and a releasable carrier support, substantially as specified.

4. The combination of an arm extending outward from the harvester and adapted to rock to dump the carrier, said arm being supported in a bearing pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, two carrier supporting pieces hinged at one end vertically to the rocking arm so as to permit them to fold to the side of the same and two or more plates or boards forming the floor of the carrier and extending outward from the harvester parallel with the rocking arm and fastened at or near each end, on one edge only, to the hinged supporting bars by a pivotal fastening, adapted to receive the sheaves from the binder and to dump them upon the ground, and to fold to the side of

the harvester when desired, substantially as described.

5. The combination of an arm extending outward from the harvester and adapted to rock to dump the carrier, said arm being supported in a bearing piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, a belaying stop fastened to the harvester adapted to hold the end of the rocking arm, and to release it with a given pressure against the outer end of said arm, two carrier supporting pieces hinged at one end vertically to the rocking arm so as to permit them to fold to the side of the same, and two or more plates or boards forming the floor of the carrier and extending outward from the harvester parallel with the rocking arm and fastened at or near each end, on one edge only, to the hinged supporting bars by a pivotal fastening, and a releasable support for the rear side of the carrier, the whole adapted to receive the sheaves from the binder and to dump them on the ground, and to fold to the side of the harvester when desired substantially as set forth.

6. The combination of an arm extending outward from the harvester and adapted to rock to dump the carrier, said arm being supported in a bearing piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, two carrier supporting pieces hinged at one end vertically to the rocking arm so as to permit them to fold to the side of the same, two or more plates or boards forming the floor of the carrier and extending outward from the harvester parallel with the rocking arm and fastened at or near each end, on one edge only, to the hinged supporting bars by a pivotal fastening, and a canvas receiver placed under the sheaf receiving carrier, and adapted to catch and save the shelled grain, substantially as specified.

7. In a sheaf-carrying apparatus attached to the side of a harvester, a pivoted latch or lock adapted to hold the carrier in carrying position, in combination with a swinging and rocking arm projected laterally, provided with means to engage with a sheaf upon the ground, and connected with said latch so that movement of the arm will trip the latch.

8. The combination of a sheaf carrier supported on one side of the machine, a catch or lock to hold it up while collecting the sheaves to be deposited in bunches on the ground, an arm supported on the harvester extending outward beyond the line of travel of the said sheaf carrier, and adapted to engage the sheaves deposited on the former round, said arm having a support fastened to it which shall rest upon the ground and travel with it, and having a hinge to permit the said arm to be carried a uniform height above the ground without regard to the position of the harvester wheels, said arm connected with a lock supporting the carrier and adapted to release it

by contact with the sheaves formerly deposited on the ground, substantially as set forth.

9. The combination of an arm extending outward from the harvester and adapted to rock to dump the sheaves, said arm being supported on a bearing piece pivoted vertically in the harvester frame or an extension therefrom, so as to permit it to fold to the side of the machine, a sheaf carrier supported on said arm, and an arm supported on the harvester extending outward beyond the line of travel of the said sheaf carrier and adapted to engage the sheaves deposited on the former round, said arm connected with the catch holding the sheaf carrier up in position to hold the sheaves, and adapted to release the same and to dump the sheaves by contact of said arm against the sheaves deposited on the former round, said arm having a vertical hinge in line with the vertical pivot of the sheaf carrier, to permit both to fold together to the side of the machine, substantially as specified.

10. The combination of an ejector moving in a support attached to the binder frame, and given a reciprocating movement by connection with the binder packer, and adapted to

engage the sheaf after it has been moved by the binder discharge arms, and the binder discharge arms operating to place the bound sheaf upon the carrier on the ground, substantially as set forth.

11. In a harvester, the combination of a sheaf-carrying mechanism having a lock, or means adapted to hold it in receiving position, with a swinging and rocking arm projected laterally and connected with the carrying mechanism so that movement of the arm will cause the lock to trip, and with a spring or means adapted to automatically bring the carrier back into receiving position after dumping.

12. In a harvester, a sheaf-carrying mechanism adapted to automatically return to and remain in position to receive and carry sheaves after discharging a load, and having a swinging and rocking arm projected laterally provided with means to strike a sheaf upon the ground and move so as to cause the carrier to dump its load.

WILLIAM WORTH BURSON.

Witnesses:

TAYLOR E. BROWN,
LEW. E. CURTIS.