

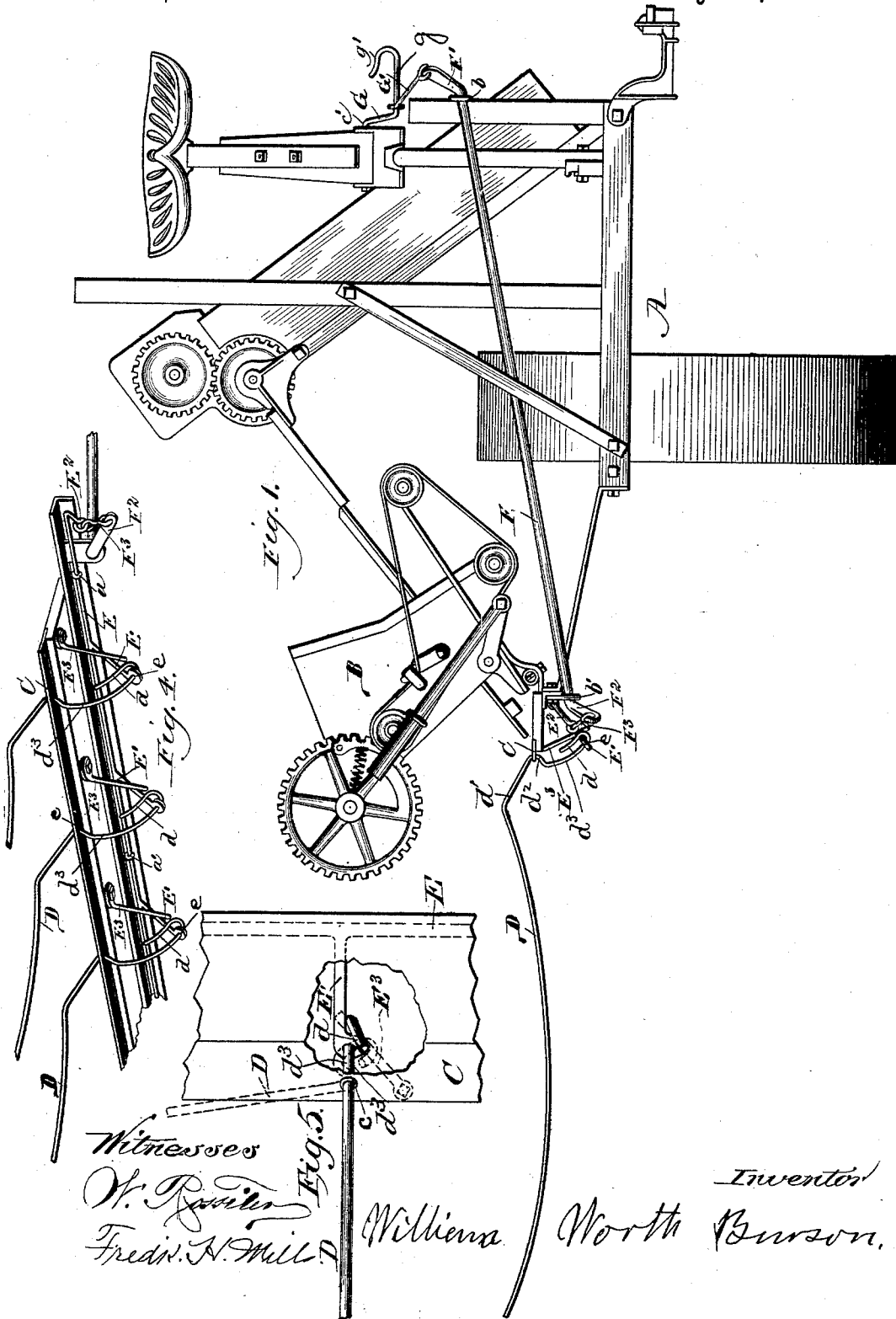
(No Model.)

2 Sheets—Sheet 1.

W. W. BURSON.
BUNDLE CARRIER.

No. 519,834.

Patented May 15, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

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BUNDLE-CARRIER.

SPECIFICATION forming part of Letters Patent No. 519,834, dated May 15, 1894.

Application filed May 26, 1890. Serial No. 353,212. (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 Bundle-Carrier for Harvesting-Machines, of which the following is a specification.

My invention relates to bundle carriers for self-binding grain harvesters, and especially to such carriers as are attached to the machine in position to receive the bundles as they are discharged from the binder, to carry them, and to drop them in bunches on the ground at the will of the driver.

In the accompanying drawings forming part of this specification, Figure 1 is a front view of the machine with the carrier in receiving and carrying position. Fig. 2 is a detail plan view, the full lines showing the carrier fingers extended, and the dotted lines showing them as folded toward the side of the machine. Fig. 3 is a side view of the carrier, the fingers being in dumping position. Fig. 4 is a perspective view of the carrier from the under side, showing positions of the operating parts when the fingers are in receiving position. Fig. 5 is a plan of one of the fingers, the full lines indicating its receiving position, and the dotted lines the position of the same when folded to the side of the machine without being dropped.

In the drawings, similar letters of reference refer to like parts in the several views.

In Figure 1, A denotes the master wheel of the harvester, on which the usual frame which carries the cutting, carrying, elevating, (when an elevator is employed) and binding mechanisms are supported.

B indicates the frame carrying the binding mechanism, said frame being mounted upon and attached to the harvester in any preferred manner.

C denotes a fore and aft horizontal bar secured rigidly to the side of the harvester frame, or to an extension thereof. In this bar, at proper intervals along its length, holes *c* are formed, in which holes the rods or fingers D of the carrier are loosely pivoted. At a point near their inner ends, these rods are bent as shown at *d*³, Figs. 1 and 3, by which means the bent rods are journaled in the holes in the bar C so as to have a rising and

falling movement, a swinging movement in a horizontal plane, and a combined rising and falling and swinging movement, the fingers in the latter movement moving downwardly and laterally in an oblique direction toward their supporting bar. Inwardly from the bend *d*³, the fingers are provided with curved extensions *d*³, by means of which extensions the fingers are operated in the manner and by mechanism hereinafter to be described. In front of the bend where the fingers are journaled in the supporting bar C they are provided with upwardly inclined projections or bends *d*¹, these projections preferably standing at an angle of about forty-five degrees to the general horizontal plane of the fingers, and rising say to three inches. From this point the carrier fingers are preferably curved outwardly toward their ends in a generally cradle-like form, but the particular form or shape of the fingers is not material to the present invention.

E denotes the operating rod or shaft for the fingers, this shaft being journaled in bearings attached to the harvester, said bearings in the present instance being upon the bar C at points *a*, *a*¹. This rod is provided with radial finger-operating arms *E*¹ extending therefrom, there being one arm for each finger of the carrier, as shown. At their outer ends these finger-operating arms *E*¹ have supplemental bearings for the heel extensions of the fingers, said bearings consisting preferably of openings *e* through which the inwardly projecting portions *d*³ of the fingers pass loosely so as to have a sliding as well as a turning movement therein. The rock-shaft or rod E is located inwardly from the pivotal point of the carrier fingers, and the finger operating arms of the same project outwardly to a point where they connect with the inwardly projecting ends *d*³ of the carrier fingers. The ends *d*³ of the fingers, below the bar, are extended downwardly and curved as shown so as to slide through the openings in the operating arms *E*¹ as the latter are raised and lowered by the rocking of the shaft E. At their extreme ends, after passing through the eyes in the arms *E*¹, the ends of the fingers are provided with return bends *d*, as best shown in Fig. 4.

E³ denotes guide rods for the inner ends of

the fingers. These rods are secured to the under side of the bar C, one for each finger, and project downwardly and rearwardly, being so inclined that their lower portions stand in position to engage with the front sides of the operating arms E' when the latter are lowered into position to elevate the carrier fingers. These guide rods E³ are also located in position relative to the plane of vertical movement of the inner ends of the fingers so as to be engaged on their front sides by the latter, and thus cause the receiving portions of the fingers to be swung laterally toward the bar C as the outer ends of the fingers are lowered in the dumping operation. The rods are furthermore preferably located so as to be struck by the finger-operating arms E' and form a stop or limit to the downward movement of the same.

The carrier is dumped and restored to receiving position by the following mechanism: F is a rock-shaft journaled on the front part of the harvester in bearings b b'. On the inner end of the shaft is a crank arm F', said arm being located at a point in front of the driver's seat.

G denotes a foot lever pivoted at c' to the seat support. At a convenient distance from its pivot, this lever is provided with a foot piece g which is bent outwardly, as shown in Fig. 1, and has a return bend g' to engage the upper part of the driver's foot, whereby the lever may be conveniently raised.

G' indicates a rod or pitman connecting the foot lever to the arm F' of the operating shaft F. At the outer end, the shaft F is provided with the crank arm F², and this arm is connected by means of a link or rod with a crank arm E² on the front end of the finger operating shaft E. In operation, when the carrier has been dumped, and it is desired to restore the same to receiving position, the driver presses down his foot on the lever G, which turns the shaft F and rocks the finger operating rod E so as to depress the operating arms E' from the position shown in Fig. 3 to that illustrated in Fig. 4. When it is desired to dump the carrier so as to discharge its load upon the ground, the driver raises the foot lever G by pulling up on the return bend g' with his foot, and the movements heretofore described are reversed, the operating arms E' being raised so as to move the bearing which the inner ends of the fingers have in the holes in their outer ends up along the curved portion D³ to a point more nearly approaching the fixed bearings of the fingers in the supporting bar C, thus permitting the inner ends of the fingers to fold under the bar C and their outer ends to fall toward the ground. When the carrying fingers are in elevated position they may extend either outwardly in receiving position, or occupy a folded position as indicated by dotted lines in Fig. 5. When the sheaf is discharged from the binder it first engages with the bend or upwardly projecting part d' of the fingers,

and, should these fingers not at this time be in proper receiving position, the momentum of the bundle striking the part d' will swing them into their extended position before passing on to the receiving part of said fingers.

With the above construction it is to be noted that the carrier fingers when in elevated position are held by means of the bearings in the openings c in the bar C and e in the arms E' at two points considerably separated from each other. The arms E' being in substantially the vertical plane of the openings c in the bar C, it will be understood that the fingers may fold laterally toward the bar C while in their elevated position. When the rock-shaft E is operated to dump the carrier, the arms E' are raised toward the under side of the bar C until the finger-bearings in their upper ends approach the fixed bearings of the fingers in the bar C so that the two bearings of the fingers practically coincide. This, it will be understood, permits the outer ends of the fingers to fall to the ground and have any of the other movements herein described. Absolute coincidence between the bearings is not, however, essential, and it is preferable to make the openings in the ends of the arms E' larger than those in the bar C so as to permit the fingers to move freely in all directions when in their lowered position without hinderance from the arms E'. The purpose of the return bends d on the finger ends of the fingers is to prevent the receiving portions of the fingers from being thrown too far forward by the arms E' when being elevated.

In the organization of the carrier herein shown, the finger supporting bar C is attached to the harvester frame, and in this case its position is fixed. It may, however, be attached to the movable binder frame or to the lower edge of the binder deck; in which case it would be adjustable fore and aft with the binder. The operation of the carrier will not be materially affected by these different locations, provided the bar C is placed in the line of discharge of the sheaves outside of the binder deck and preferably nearly on a line with the same.

The guide rods E³, it will be understood, operate to positively swing the fingers laterally toward their support as their outer ends fall. It will be understood, however, that while this is a desirable feature, it is by no means essential, inasmuch as the fingers would be caused to trail backward by the weight of the bundles and the action of the stubble as the machine advances. It will be understood that the fingers are locked in receiving position by the arms E' of the rod E, also that when these arms are raised to permit the free ends of the fingers to fall the latter are supported practically by their bearings in the bar C.

I do not wish to be understood as limiting myself to the details of construction herein illustrated, as the same may be modified within wide limits without departing from

the spirit or scope of the invention. Nor is the invention limited to the location or connection of the carrier with the harvester or binder at the side of the machine, as it may be arranged at the rear if desired.

Having thus described my invention, what I claim, and desire to secure, is—

1. In a bundle carrier, a supporting bar, a series of receiving, carrying and dumping fingers, pivoted in fixed bearings on said support so as to rise and fall, said fingers having heel extensions projecting beyond their pivots, in combination with supplemental bearings for said extensions, and mechanism for shifting the supplemental bearings along the heel extensions toward and from the fixed bearings; substantially as described.

2. In a bundle carrier, a supporting bar, a series of receiving, carrying and dumping fingers, pivoted in fixed bearings on said support so as to rise and fall, said fingers having heel extensions projecting beyond their pivots, in combination with a rocking operating rod or bar arranged transversely to the receiving and carrying position of the fingers, said bar having supplemental bearings for the heel extensions, and means for rocking the bar and shifting the supplemental bearings along said heel extensions toward and from the fixed bearings; substantially as described.

3. In a bundle carrier, a supporting bar, a series of receiving, carrying and dumping fingers, pivoted in fixed bearings on said support so as to rise and fall, said fingers having heel extensions projecting beyond their pivots, in combination with a rocking operating rod or bar arranged transversely to the receiving and carrying position of the fingers, said bar being provided with radial arms having a sliding connection with the heel extensions; substantially as described.

4. In a bundle carrier, a supporting bar, a series of receiving, carrying and dumping fingers, individually pivoted to said support so as to rise and fall, and having heel extensions projecting beyond their pivots, in combination with a rocking operating bar or rod arranged transversely to the receiving and carrying position of the fingers, and engaging the heel extensions, and inclined guides for the fingers, said guides being adapted to engage the heel extensions and swing the fingers laterally toward their support as they fall; substantially as described.

5. In a bundle carrier, the combination of a supporting bar, a series of receiving, carrying and dumping fingers, said fingers being individually pivoted to said support so as to rise and fall, and having also an individual swivel connection with the support so as to swing laterally toward the same, a supplemental movable support adapted to be shifted to raise and lower the fingers and hold them

in receiving and carrying position, and a fixed guide whereby as the fingers are lowered to dump the bundles they are folded laterally; substantially as described.

6. In a bundle carrier, the combination of a supporting bar C, the receiving, carrying and dumping fingers, D, individually pivoted to said support, and having heel extensions projecting beyond their pivots, the rock shaft or rod E having arms E' adapted to engage the heel extensions of the fingers, said arms and heel extensions being arranged to engage each other at about a right angle when the fingers are in receiving and carrying position, whereby the fingers are locked in said position; substantially as described.

7. In a bundle carrier, the combination of a supporting bar C, the receiving, carrying and dumping fingers D, individually pivoted to said support, and having heel extensions projecting beyond their pivots, the rock shaft or rod E having arms E' engaging the rear extensions, and the return bends *d* on the extensions of the fingers; substantially as described.

8. In a bundle carrier, the combination of a supporting bar C, the receiving, carrying and dumping fingers D, individually pivoted to said support, and having heel extensions beyond their pivots, the rock shaft or rod E having arms E', said arms being provided with bearings at their outer ends for the heel extensions of the fingers, and the rods E³ acting as stops to the downward movement of the arms E'; substantially as described.

9. In a bundle carrier, a supporting bar, a series of receiving, carrying and dumping fingers, individually pivoted on said support so as to rise and fall, and having heel extensions projecting beyond their pivots, in combination with an operating rod or bar connected with said heel extensions for operating the fingers, the connection being such that the fingers are permitted to swing laterally toward their support while in receiving position without affecting the position of the operating bar; substantially as described.

10. In a bundle carrier, the combination of a supporting bar C, the receiving, carrying and dumping fingers D, individually pivoted to said support, and having heel extensions projecting beyond their pivots, the rock shaft or rod E having arms E', said arms being provided with bearings at their outer ends for the heel extensions of the fingers, and the inclined guide rods E³ engaging the heel extensions and swinging the fingers laterally toward their support as they fall; substantially as described.

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