(No Model.) 3 Sheets—Sheet 1.

W. A. KIRBY.

SHEAF CARRIER.

No. 481,144. Patented Aug. 16, 1892.

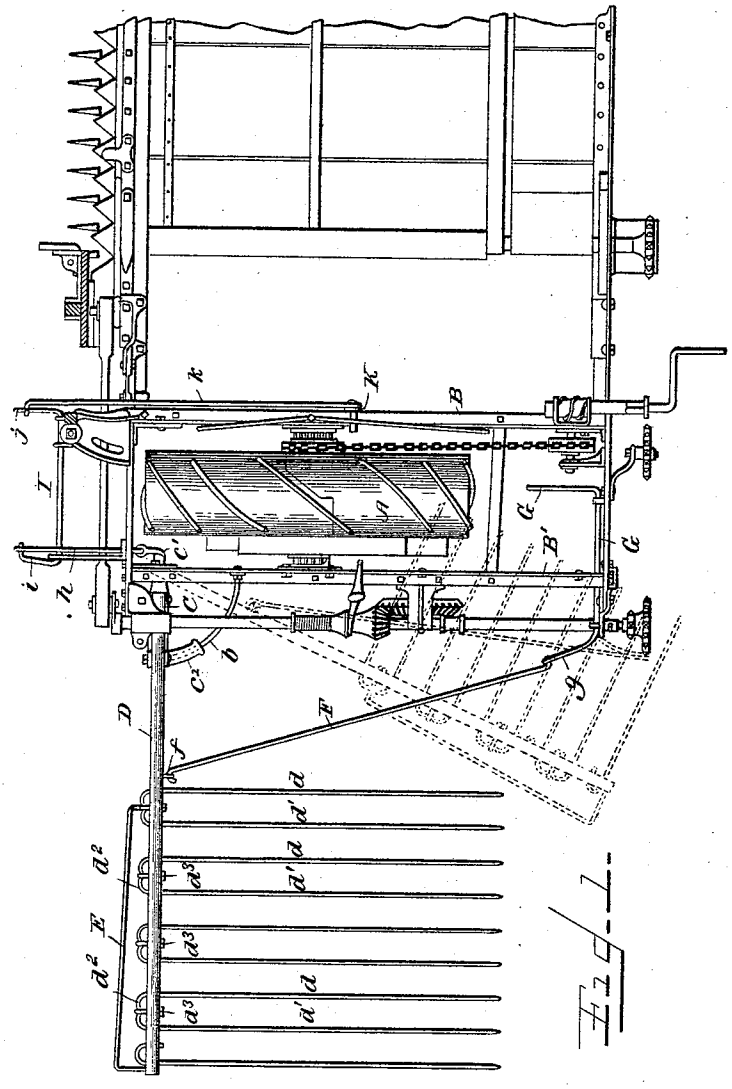

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

W. A. KIRBY.

SHEAF CARRIER.

No. 481,144. Patented Aug. 16, 1892.

Fig. 2.

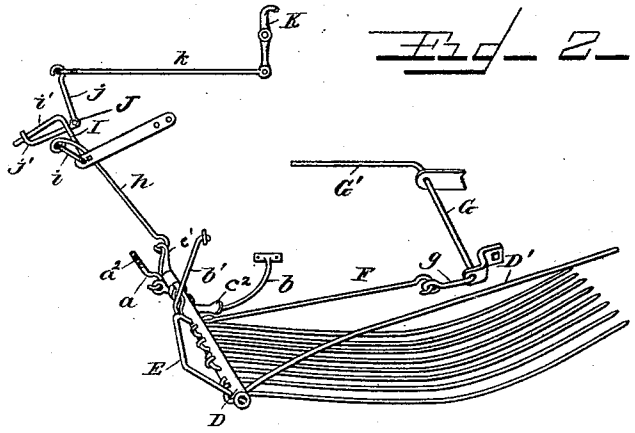


Fig. 3.

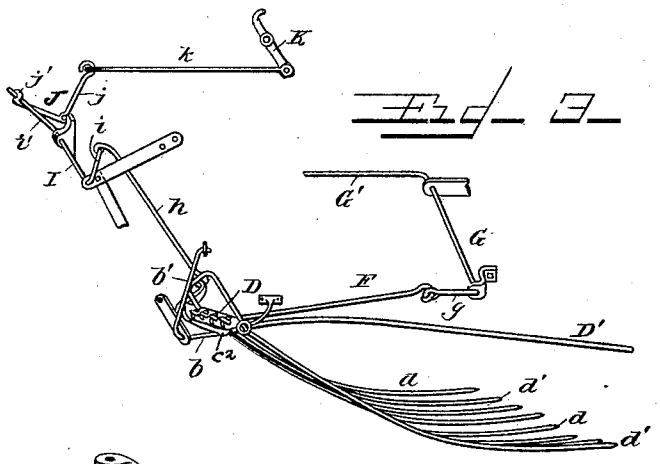
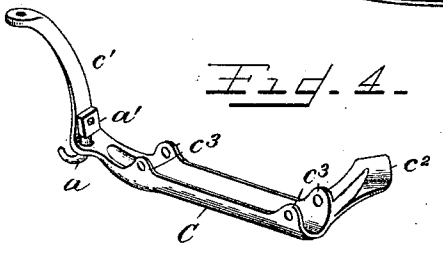


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

W. A. KIRBY.

SHEAF CARRIER.

No. 481,144. Patented Aug. 16, 1892.

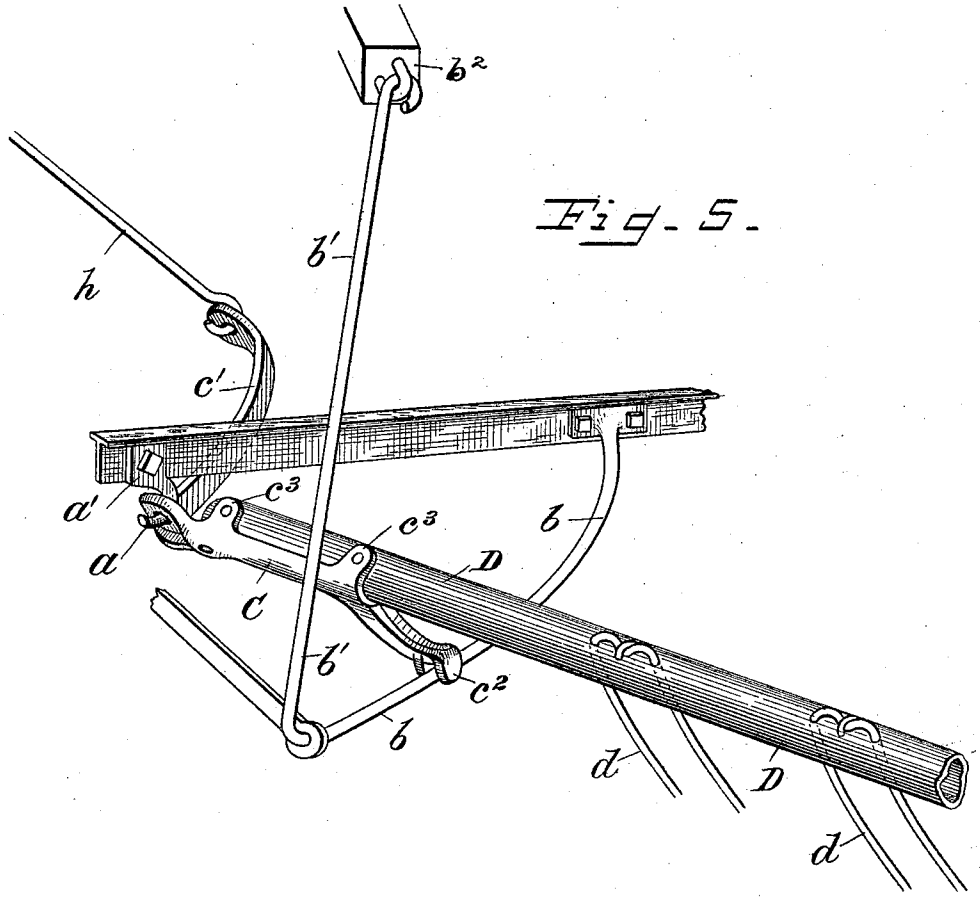

Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM A. KIRBY, OF AUBURN, NEW YORK.

SHEAF-CARRIER.

SPECIFICATION forming part of Letters Patent No. 481,144, dated August 16, 1892.

Application filed September 30, 1891. Serial No. 407,310. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. KIRBY, a citizen of the United States, and a resident of Auburn, county of Cayuga, and State of New York, have invented a new and useful Improvement in Sheaf-Carriers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a dumping bundle-carrier attachment to harvesters; and it consists in a novel manner of supporting the swinging head and tilting fingers; in providing the rocking and swinging head with a rearwardly-projecting arm or shoe, forming a tilting fulcrum for the tilting carrier; in rigidly connecting the tilting fingers with the carrier-head; in the means for locking and tripping the tilting carrier; and in the arrangement of means for folding the carrier at the side of the machine for transportation and for returning said carrier to its working position, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a portion of a harvester with my improved carrier attachment applied. Fig. 2 is a perspective view of the carrier removed from the machine and in its raised position for receiving the bundles. Fig. 3 is a similar view of the carrier tilted to discharge the bundles; and Fig. 4 a perspective view, enlarged, of the pivotal casting and its supporting hook or pivot upholding the tilting carrier. Fig. 5 is an enlarged detail view, in perspective, showing the manner of tilting the carrier.

The machine to which the carrier is attached may be of any usual or preferred construction, preferably of the type employing a single drive-wheel, (indicated at A,) over which the grain is elevated to a binder to be discharged when bound upon the stubble side of said wheel and the machine out of the way of the latter on its succeeding round.

The main frame of the machine (indicated at B) is made, preferably, rectangular in form, extending around the drive-wheel, as shown, and to the outer longitudinal frame-bar B′ thereof, near its forward end, is secured a pendent hook *a*, either by means of a bracket *a′*, as shown in Fig. 4, bolted to said bar, or by a screw-threaded shank a^2, as shown in Fig. 2, passing through said bar and secured by a nut, as preferred. Upon this hook *a* is suspended a casting C, (see Fig. 4,) consisting of a horizontal semi-cylindrical arm, concave on its upper face to form a socket for the reception of the inner end of the tilting carrier-head and provided on its inner end with an upright crank-arm *c′*, through which the tilting of the carrier is effected, as will appear. The casting C is further provided at its outer end with a rearwardly-projecting arm or shoe c^2, concave on its lower face, which rests and moves on a curved rod or track *b*, secured at its rear end to the frame-bar B′ and supported at its forward end by an upright angular extension *b′*, attached to any suitable lateral arm or extension b^2 from the machine-frame. The track portion *b* is formed in an arc of a circle of which the pivotal shank of the hook is the center, so that the shoe c^2 will rest and move on it when the carrier is swung around from its working position shown in full lines, Fig. 1, to that shown in dotted lines, for transportation, and vice versa, as will be described.

The carrier-head or rock-shaft (indicated at D) is made, preferably, of gas-pipe, though any suitable material may be used, and is bolted rigidly at its inner end to the casting C by means of bolts passing through said head and through perforated lugs or ears c^3 on the casting.

The carrier-fingers (indicated at *d d′*) are made, preferably, in pairs, with the connecting-loop d^2 at their forward ends, the fingers passing through perforations in the head D, and being rigidly secured thereto by means of the eyebolts d^3, engaging the loop portions d^2 and passing through the head. These fingers are sufficiently removed from the pivoted end of the head to bring them into proper position to receive the bundles as they are discharged from the machine and also to adapt the inner fingers of the carrier to swing for transportation around behind, or, as shown, slightly under the rear portion of the drive-wheel.

The head D is provided with a forward guard-rod E, secured to said head by means of bent ends, which pass through the head and

are rigidly secured thereto by nuts or otherwise, as preferred. This guard is set raised slightly above the plane of the head, as shown in Fig. 2, to prevent the bundles from being thrown or jolted off in front of the carrier. The head is further provided at its outer end with a finger D′, set at an angle to and above the plane of the fingers *d d′*, and forming an outer guard or fender for preventing the bundles from being thrown or rolling off the outer side of the carrier. The head D at a point inside of the fingers *d d′* has a perforated lug or eye *f*, from which a rod F extends to a crank-arm *g* on a rock-shaft G, suitably journaled on the main frame and provided on its inner end with a lever-arm G′, extending upward within convenient reach of the driver in his seat on the machine, and who by vibrating said lever can swing the carrier from its operative to its folded position, above described, and back again, as required.

The means for operating the tilting carrier and for locking said carrier in position to receive the bundles are as follows: To the crank-arm *c′* on the casting C is secured a rod *h*, which has its upper forward end secured to a crank-arm *i* on the outer end of a short transverse rock-shaft I, mounted in suitable bearings on the machine-frame. By reference to Fig. 2 it will be seen that the upper end of the rod *h* is bent forward and overlies the shaft I, so that when the carrier is raised to position for receiving the bundles the connection between said rod and crank-arm will pass below the dead-center of said crank-arm, allowing the rod to rest on the shaft I as a stop, and so locking the carrier in its receiving position.

The rock-shaft I is shown provided on its inner end with a forwardly-bent crank-arm *i′*, passing through an eye at *j′* on the forward end of the horizontal arm of a bell-crank lever J; but it will be obvious that this bell-crank lever may be dispensed with and the upright arm *j* thereof may be made rigid on the inner end of shaft I, as shown in Fig. 1, with the same result. The upper end of the arm *j* is connected by a rod *k* with the lower end of a foot-lever K, pivoted centrally of its length in any suitable support on the machine-frame. The lever K is located in convenient position to be operated by the foot of the operator from his seat on the machine, and who by pressing forward on the upper end of said lever with his foot can readily break the lock between the link *h* and the crank *i*. When assisted by the weight of the load on the carrier-fingers, the carrier will be quickly and easily tilted into the position shown in Fig. 3 for discharging said load. In this operation it will be seen that the head D rocks on its pivotal connection with the hook *a* and on the rear end of the shoe c^2, the latter acting as a fulcrum and resting on the rod *b*, as explained, thereby giving an angular or backward and inward tilt to the fingers, raising the forward and outer sides of the carrier and greatly facilitating the discharge of the bundles as compared with carriers which merely drop the rear end without lifting the forward end thereof—a feature of especial value in machines operating on a side hill or descending grade.

In returning the carrier to operative or receiving position the attendant simply presses his foot against the lower end of lever K, the weight of the raised forward end of the carrier, after the latter is relieved of its load, materially assisting the operation of restoring the carrier to its receiving position, in which it is again locked automatically, as before.

The pendent-hook support *a* for the casting C and rock-shaft or head D, forms a dead-eye or universal-joint connection of the head with the frame, permitting the latter to rock and tilt and also to swing backward into the folded position described.

Having thus described my invention, I claim as new—

1. In a sheaf-carrier for harvesters, the carrier-head or rock-shaft pivoted to the machine-frame and provided with the rearwardly-extending arm or shoe rigid thereon, in combination with a suitable support for said shoe, whereby an angular tilt is given to the carrier in discharging its load, substantially as described.

2. The carrier rock-shaft pivoted to the machine-frame and provided with the rearwardly-extending arm or shoe rigid thereon, in combination with the cu v
for said shoe and the tilting fingers rigidly secured to said head, substantially as described.

3. In a sheaf-carrier, the carrier-head or rock-shaft pivoted to the machine-frame and having rigid fingers, in combination with a rock-shaft G, connected to said carrier by means of link F for swinging it to and from its folded position, substantially as described.

4. In a sheaf-carrier, the carrier rock-shaft or head-casting provided with the socket for the carrier rock-shaft, the rearwardly-projecting shoe rigid thereon, and the crank-arm for actuating said head, in combination with the universal-joint connection between said head or casting and the machine-frame, and the track or support on which said shoe travels, substantially as described.

In testimony whereof I have hereunto set my hand this 28th day of September, A. D. 1891.

WILLIAM A. KIRBY.

Witnesses:
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