(No Model.)

J. F. PACKER.

HAY LOADER.

No. 282,762. Patented Aug. 7, 1883.

Fig. 2.

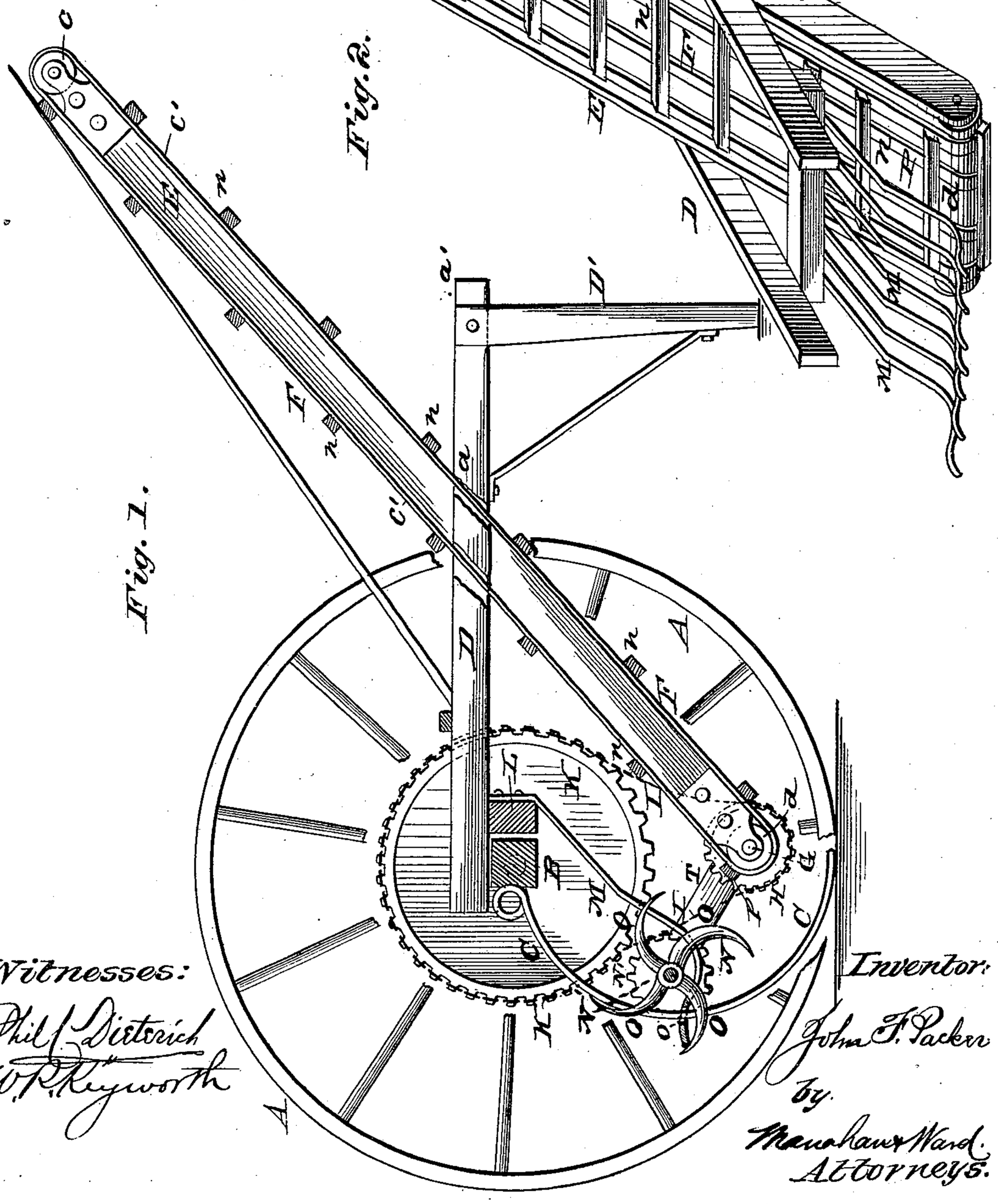

Fig. 1.

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UNITED STATES PATENT OFFICE.

JOHN F. PACKER, OF ROCK FALLS, ILLINOIS, ASSIGNOR OF ONE-HALF TO GEORGE W. PACKER, OF SAME PLACE.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 282,762, dated August 7, 1883.

Application filed January 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. PACKER, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Hay-Loaders; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to that class of hay-loaders intended for attachment to the rear of the wagon and to be drawn thereby. It more especially pertains to the combination of a hay-rake with the elevator of a hay-loader, by which means the chief parts of each are utilized in the combined machine.

In the drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is an oblique side view of the elevating devices detached from the rake.

A A are the ordinary carrying-wheels of a horse hay-rake. B is the axle, and serving also as the rake-head of the spring-teeth C.

In the drawings the tilting devices and draft-frame of the rake proper are not shown.

D is a frame, having its rear ends attached inside of each carrying-wheel on the upper side of the axle B, and converging from its front corners, *a a*, to a point, *a'*, at its extreme front end, for convenience in attaching to the rear of the wagon.

D' D' are vertical legs placed near the front corners, *a a*, of the frame D, to support the front end of the latter when the machine is not in use. To the frame D is rigidly affixed at a proper incline the elevator-spout E, which is of such length as to reach from below the axle B a sufficient height to deliver the hay on the top of the load. The spout E is provided at its upper end with the pulleys *c c*, which carry the upper end of the elevator F, which latter is constructed in any suitable way, preferably of transverse strips *u*, fastened at regular intervals and at each end to the endless belts *c' c'*.

P P are a series of longitudinal strips, constituting the bottom of the spout E. The intervals between such strips P are of such width as not to permit the hay to drop between the strips, and yet allow it to bag somewhat between such strips, so that the transverse strips *u* will not pass over the hay.

Across the lower end of the spout E is journaled the revolving shaft G, provided at the lower corners of the spout E with the pulleys *d d*, which carry, respectively, the lower ends of the belts *c' c'*. The shaft G, pulleys *d d*, and thereby the elevator F, are driven by a sprocket-wheel, H, affixed to such shaft G outside of the spout E. The sprocket-wheel H receives rotary motion through the medium of a sprocket-chain from a sprocket-rim, K, affixed to the inner face of the carrying-wheel A.

L is a transverse beam extending across the rear of the frame D, underneath said frame and directly in front of the axle B. To the front face of the beam L is affixed the upper ends of a series of strippers, M, which extend downward and are then bent to the rear, as shown. In each of the strippers M is formed a vertical slot, *o*, through which one of the rake-teeth C passes, the number of rake-teeth and strippers being the same.

By means of the standards T, attached at their lower ends to the spout E, there is suspended and journaled a comb-wheel, N, which is provided with the four series of combs O. In each series the combs are of such number that one passes into each interval between the rake-teeth C and each interval between the strippers M. The combs O are bent slightly in a direction the reverse of their path of rotation, so as to pass down between the rake-teeth C at or near right angles to the latter, and to withdraw nearly endwise from between the strippers M, thus in the first instance striking the hay from between the rake-teeth and clearing themselves of adhering hay when passing between the strippers M, like the withdrawal of a hay-fork. The comb-wheel N is so placed between and in relation to the rake-teeth C and the strippers M that the combs in the downward part of their revolution pass between the rake-teeth C and in the upper part of their revolution between the strippers M.

The comb-wheel N is rotated by a sprocket-wheel, N′, affixed to the shaft thereof, which is actuated by the sprocket-chain I in its upward passage from the sprocket-wheel H to the sprocket-rim K.

The purpose of the comb-wheel N is to take the hay from the rake-teeth C and to cast it upon the lower end of the elevator F. The strippers M prevent the hay from clinging to the combs O or winding around the wheel N.

The advantages of my invention are the following: The rake-teeth furnish the best known mode of taking up all kinds of hay from the ground. By their use, also, the hay is raised sufficiently high for the lower end of the elevator-spout E to be placed under it. The hay can be taken up cleanly from the swath without any preliminary raking. By using the rake-head, axle, and carrying-wheels of the ordinary rake, the loader is rendered much less expensive. Upon the removal of the frame D, spout E, and their adjunctive parts, the residue is readily converted into the common horse hay-rake. The only attachment of the rake to the elevator is that of the rear end of the frame D to the axle B, which attachment can be made by vertical carriage-bolts, and therefore be readily removable.

I am aware that machines have heretofore been constructed in which a beater-wheel has been employed to cast the hay gathered by the rake-teeth upon an elevator. In such prior machines the beater-wheel or device intended to remove the hay from the rake-teeth at its side next the rake-teeth passes upward and in a direction toward the upper ends of the rake-teeth. This mode of operation has the effect of packing the hay between such rake-teeth, and the hay, thus lodging, in a great degree renders the rake-teeth inoperative, and, when the accumulations grow sufficient, clogs and stops the beater-wheel, thus rendering the operation of the machine intermittent and unsatisfactory, and requiring frequent stoppages of the machine for the dislodgment of such hay. In my invention the rotation of the comb or beater wheel N is in the opposite direction, thus withdrawing the hay from the rake-teeth by a movement toward the points of the latter, and avoiding the wedging of the hay between such teeth.

Another characteristic of my invention, distinguishing it from prior ones, is the element of detachability of the comb-wheel and elevator, so that the residue of the machine may be utilized as a common rake.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the rake consisting of the wheels A A, axle B, rake-teeth C, the detachably-connected loader consisting of the frame D, spout E, strippers M, comb-wheel N, and elevator F, placed below said comb-wheel, and means for revolving said comb-wheel in a direction the reverse of the main wheels, all substantially as described, whereby the hay is picked from the rake-teeth by a downward motion and passed beneath the comb-wheel to reach the elevator.

2. The strippers M, provided with the slots *o*, the rake-teeth C, passing, respectively, through such slots, and the comb-wheel N, the latter having rotations the reverse of that of the carrying-wheels A, in combination, substantially as shown, and for the purpose aforesaid.

3. The rake-teeth C. bar L, provided with the strippers M, slotted, respectively, on the teeth C, in combination with the comb-wheel N, having rotation the reverse of that of the carrying-wheels A, provided with combs O, which pass respectively between such teeth and such strippers, whereby the hay is prevented from wedging between such teeth and is stricken from such combs, substantially as shown, and for the purpose stated.

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

JOHN F. PACKER.

Witnesses:
BELLE MANAHAN,
R. CHAMPION.