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Wm A. Sinkle
Henry A. Lamb.

William R. Baker.

By, His Attorneys

Parkinson & Parkinson

UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCORMICK HARVESTING MACHINE COMPANY, OF SAME PLACE.

HARVESTER-DROPPER.

SPECIFICATION forming part of Letters Patent No. 349,267, dated September 14, 1886.

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To all whom it may concern:

Be it known that I, WILLIAM R. BAKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvester - Droppers, of which the following is a specification.

My invention relates to the well-known slatted dropper, which tilts on an axis directly behind and parallel with the finger-bar. This has heretofore been restored to the carrying position by main force of the driver after each dumping operation, requiring in the course of a few hours a very laborious and tiresome expenditure of strength. It has also been controlled and operated entirely from the inner end, the dropper-head or oscillating bar, immediately behind and parallel with the finger-bar, to which the slats are secured, and which has at its extremities the journals, being alternately locked and released, as regards the pivotal movement, at this end, while from this point to the outer end the entire dropper must be supported, when up and locked, by the torsional resistance of this head. There is therefore a constant tendency, increasing with the distance from the inner end, to sag, and as the head is invariably of wood it finally yields to this tendency, as would a thin bar of metal, and becomes twisted, dropping the slats from about the middle to the outer end to a greater inclination below the others, and often to such a degree that they fail to retain their load until the time for dumping.

The main object of my invention is to relieve the driver in part or whole of such labor by the introduction of an auxiliary device which automatically restores or assists in restoring the dropper to its carrying position.

A secondary object is to overcome the tendency to sag, which I accomplish by applying, at a suitable point along the dropper-head, a counteracting torsional strain from the outside divider.

A third but less important object is to balance the divider, or keep its point up by throwing the weight of the dropper upon it.

These three objects I have found it feasible to obtain by a single means, as I am presently about to describe.

In the drawings, Figure 1 is a top plan view

of so much of a harvester-dropper or mower and dropper combined embodying my invention as is essential to an understanding thereof. Fig. 2 is a rear elevation, partly in section, on a correspondingly-numbered line in the preceding figure. Fig. 3 is an elevation from the divider end of the machine; and Fig. 4 is a transverse section, as indicated by the line of like number in Fig. 1.

A is a finger-bar having the usual inner and outer shoes and divider. The heel of the inner shoe, B, is provided with a journal-bearing, *b*, and the outer shoe, C, has a like bearing, *c*, in its heel in line with the other. These two bearings receive journals *d* and *d'*, respectively, at the inner and outer ends of the wooden dropper-head D, which therefore lies behind, parallel with, and in close proximity to the finger-bar. This head has the usual series of rearwardly-projecting slats, D', secured along its length from one end to the other, to fill the entire width of the swath, and has also rigidly affixed to the extremity of its inner journal the casting E, provided with one upright arm, *e*, and one horizontal arm, *e'*, the first being connected by link *e*² with the treadle or lever on the main frame, whereby the dropper is lifted to and held in its raised or carrying position, or released to permit it to dump its load, and the second by link *e*³ with the cut-off to retain the latter out of the way when the dropper is carrying, or to bring it down into effective position when the dropper sinks to discharge.

As thus far described, the parts and their operation are old and commonly known; but, as already explained, since in this construction there is great labor thrown upon the driver of the machine in restoring the dropper to position after a dumping operation, and also a tendency in the dropper to sag and become ineffective toward the outer end, due to the locking or holding of the head at the inner end alone, and the consequent torsional strain thereon from the slats and their load, I propose to add to said parts a lifting or torsion spring seated at one end against some part of the outer shoe or divider, and at the other secured to the dropper-head in such manner as to tend always to restore the dropper to carrying position, while not offering sufficient resistance

to prevent it from yielding when a gavel is to be discharged, and tend also to oppose the torsional strain on the dropper-head. This spring may be applied in various ways, but the preferable method is that depicted in the drawings, and which I will now explain. A metal rod, F, of suitable diameter—say five-sixteenths-inch round steel—is laid along the top of the head, preferably in a groove, to bring it flush from the outer end to a point near or slightly inside of the middle, which gives it sufficient length for proper torsional play. Here it is bent rearwardly, forming a short crank-arm, *f*, which is confined by a strap, as shown, close to the rear side of the dropper-head. At the outer end this rod passes to the exterior of the divider, which is best done and with most durable effect by carrying it through a central bore in the journal at that end, and is then bent up into a second crank-arm, *f'*, lying alongside of and parallel with a flange, G, from the shoe, to which flange it is confined in such manner that it will oppose the fall of the dropper from a carrying position and exert a constant lifting force upon it to carry it to, and even above, such position.

In order that any loss of power due to weakening of the rod from continued use, or that the lifting strain, and consequently the torsional resistance, of the rod to the fall of the dropper, may be increased or decreased at will, the outer crank-arm, instead of being fastened permanently, like the other, by a strap or clip, may be confined by means of a series of pins, *g*, from the flange, arranged concentrically with the journal through which the rod passes, so that said arm may be sprung out and in, to be brought between any two pins of the series, twisting or untwisting the rod as it lies in the normal position of the dropper. Since the torsion-rod tends to lift the dropper by the leverage against the outer shoe or divider, it will follow, conversely, that the weight of the dropper will tend to lift or counterbalance the point of the divider, lessening the risk of catching on the ground, and also preventing, in some degree, the twisting of the finger-bar.

I claim—

1. The combination, substantially as here-inbefore set forth, with a finger-bar and dropper pivoted on an axis behind and parallel with said finger-bar, of a torsion-spring confined at one end to the outside shoe and at the other end about centrally of the dropper-head, and operating to counteract the torsion on the dropper-head.

2. The combination, substantially as here-inbefore set forth, of a finger-bar, a dropper-head on an axis behind and parallel with said finger-bar, a torsion-spring which lifts or tends to lift said dropper, and arranged to counteract the torsional strain on the dropper-head, and means whereby the stress of said torsion-spring may be increased.

3. The combination, substantially as here-inbefore set forth, of the finger-bar, the dropper-head oscillating in journals behind said finger-bar and on an axis parallel therewith, the torsion-rod lying along the top of said dropper-head and confined thereto by means of a rearwardly-bent end, the tubular journal through which said torsion-rod passes, and the series of pins between which the outer cranked end of the rod is adjustably secured.

4. The combination, substantially as here-inbefore set forth, of the finger-bar, the dropper-head oscillating in journals behind said finger-bar and grooved along its top, the torsion-rod lying in said groove and secured to the head by means of the rearwardly-bent end and a suitable strap, the tubular journal at the divider end of the dropper-head, through which the torsion-rod passes, the vertical flange on the outer shoe, and the series of pins from said flange, between which pins the rearwardly-bent end of the torsion-rod is adjustably secured.

WILLIAM R. BAKER.

Witnesses:

PAUL ARNOLD,
S. C. A. HOLTH.