(No Model.)

J. H. MORLEY.

PLOW.

No. 372,557. Patented Nov. 1, 1887.

Fig. 1.

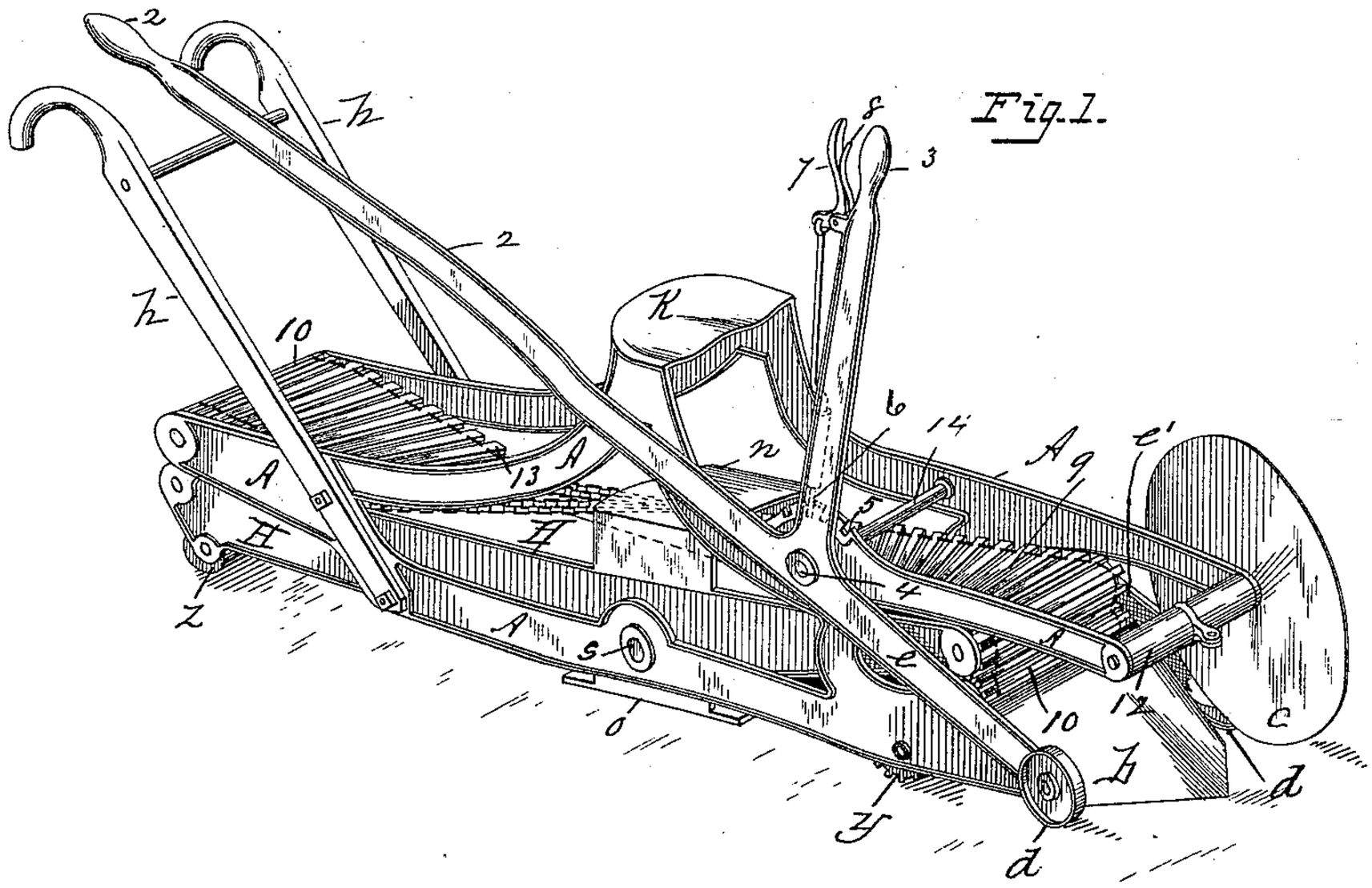


Fig. 3.

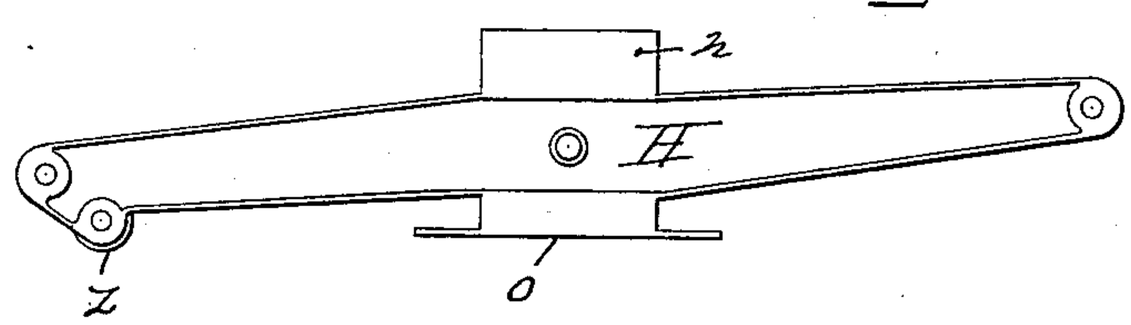
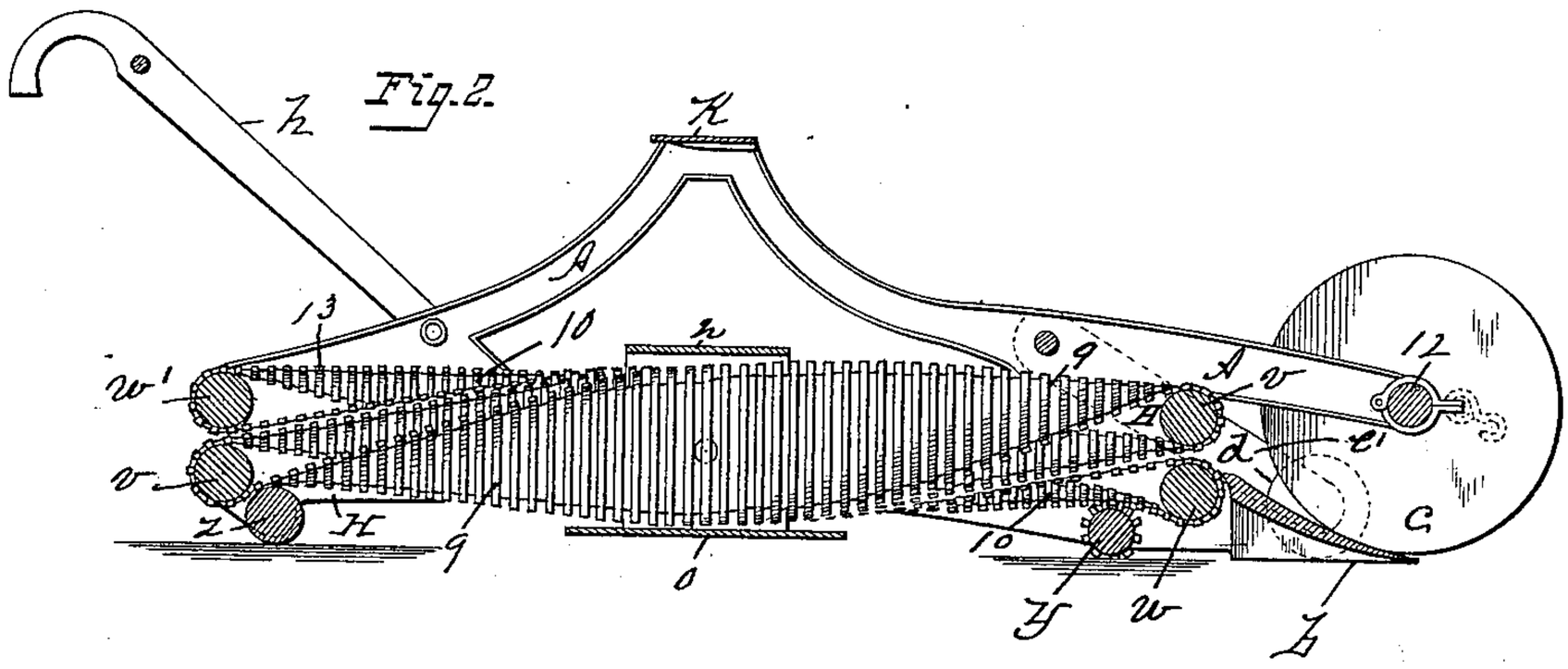


Fig. 2.



Attest:
Court. A. Cooper
G. M. Chamberlain.

Inventor:
James H. Morley
By Chapin & Co
Attys

UNITED STATES PATENT OFFICE.

JAMES H. MORLEY, OF SPRINGFIELD, MASSACHUSETTS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 372,557, dated November 1, 1887.

Application filed April 11, 1887. Serial No. 234,347. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. MORLEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Plows, of which the following is a specification.

This invention relates to plows, the object being to provide a plow of improved construction for turning the furrow-slice completely over or inverting it; and the invention consists in the peculiar construction and arrangement of the various parts of the plow, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a plow constructed according to my invention. Fig. 2 is a longitudinal section. Fig. 3 is a side elevation of the pivoted apron-frame.

In the drawings, A is an oblong frame, which may be constructed either of metal or wood, having an elevated seat, K, thereon. The forward end of said frame has two arms thereon, between which is secured the draft-bar 12, and outside of the frame and at the side of one of said arms is pivoted a cutting or colter wheel, *c*, which wheel is adapted to rotate freely in a line with the landside of the plow. A colter-wheel may be hung on both sides of frame A, if desired.

In that part of the frame A beneath the aforesaid extending arms thereon is fixed the share *b*, of suitable metallic construction, having a projecting point, as shown, about centrally between its edges, which are attached to the frame, and having its upper surface rounded or beveled from a line drawn from said point upward. Just back of the share *b* an apron-roller, *w*, is hung to rotate freely between the sides of the frame A, and at the opposite end of said frame a second apron-roller, *w'*, is hung in a higher position therein than said roller *w*, and, like the latter, has a free rotary movement in the frame. A flexible endless apron, 10, made preferably of stout canvas or leather, is hung on said rollers *w* and *w'* at each end of the plow-frame, one end of said apron being turned half over, thereby imparting to that part of the apron which extends between said rollers a spiral or twisted form, as shown. The apron 10 is constructed, preferably, with a series of cross strips or bars, 13, attached in any suitable manner to its surface, and a traction-roller, *y*, having a ribbed surface, as shown, is hung to rotate freely in the frame A near the forward end of the plow, and has such a surface engagement with the said apron 10 as to impart to the latter, when the plow is drawn over the ground, a longitudinal movement over the said rollers on which it is hung in the frame.

Two bearing-wheel levers, *e* and *e'*, are fixed on a transverse shaft, 14, in the frame A, said levers extending toward the point of the share on the opposite sides of frame A, and having the bearing-rollers *d* hung on the ends thereof, as shown. One of said levers, *e*, has a handle-extension, 2, projecting rearwardly, and a second handle, 3, extending upwardly within the reach of a person sitting upon the seat K. A stop-bar, 6, is attached to the inner side of the handle 3 by its lower end, so that it is permitted to have a longitudinal movement on said handle, and the lower end of said bar is adapted to engage in the notches 5 in the edge of the frame A, in order to retain the arms *e*, on which the rollers *d* are pivoted, in certain positions. The said bar 6 is given the said longitudinal movement to engage its end with said notches and to disengage it therefrom by the elbow-lever 7, to which it is attached, as shown, said elbow-lever being pivoted to the said handle 3. A spring, 8, back of the elbow-lever 7, so swings the latter as to keep the lower end of the stop-bar 6 in engagement with either one of said notches 5.

Suitable handles, *h*, are bolted to the sides of the frame A, and serve the usual purpose of guiding the plow.

An apron-frame, H, (shown in side elevation in Fig. 3,) preferably of metallic construction, is pivoted at *s* between the sides of the frame A, and is capable of more or less vibratory movement therein. A supporting-roller, *z*, is hung between the sides of the rear end of the frame H, and may be, if desired, made like the above-described traction-roller *y* in the frame A, whereby it will be given an engagement with an adjoining side of a second endless apron, 9, which is hung in the frame H, as below described. An apron-roller, *v*, is hung to rotate freely in each end of the frame

H, and within said frame and on the said rollers is placed a second endless apron, 9, of substantially the same construction as the above-described apron 10, which is hung in the frame A, and apron 9 is, like the above-described apron 10, given a spiral position in the frame H corresponding to the position of the apron 10 by having one end thereof turned half over, and thus arranged the said two aprons are brought side to side in spiral relation; but the frame H, on account of its said pivotal attachment between the sides of the plow-frame A, is capable of more or less of a vibratory movement in the plow-frame. The apron-frame H is provided with a saddle, *o*, which hangs beneath it and extends across its lower side, which is arranged about in the plane of the under side of the plowshare *b*, and serves to support the aprons and prevent them from dragging on the ground when conveying the furrow-slice, as below described. A hood, *n*, extends over and across the upper side of the apron-frame H, and serves to guard the upper side of the aprons and provide a strengthening-bridge for the frame H.

The operation of the above-described improvements in plows is as follows: In order to govern the dip of the plowshare *b* so that a furrow of the requisite depth only shall be cut, the supporting-rollers *d* are set to the proper positions by the handles 2 or 3 and there fixed, as described. Upon starting the plow the furrow-slice mounts the share *b* and enters between the ends of the aprons 9 and 10, and passes between said aprons as the plow moves along, the aprons meanwhile taking up the requisite longitudinal movement, and, by reason of their above-described spiral positions, the said furrow-slice, as it moves through between said aprons from one end of the plow to the other, is turned completely over or reversed and delivered at the rear end of the plow in that position, the said furrow-slice being cut as the plow moves along by the cutting-wheel *c*, above described.

What I claim as my invention is—

1. A furrow-slice-reversing plow consisting of a frame, as A, having a suitable share, substantially as described, fixed thereto, an endless apron, as 10, suspended on rollers in said frame in a longitudinal spiral position, an apron-frame, as H, hung pivotally in said frame A beneath said apron, having a second endless apron, as 9, suspended on rollers therein, having a spiral position corresponding to said apron 10 and lying side to side with the latter, and suitable traction-rollers, substantially as described, hung in said frames and having engagement with said aprons, combined and operating substantially as set forth.

2. The frame A, the cutter-wheel *c*, hung thereon, and the share *b*, fixed thereto, the arms *e e'*, having a common pivotal connection with said frame, and the bearing-wheels *d* thereon, combined with the handle 3, the stop-bar 6, having an engagement with the frame A, and the elbow-lever 7, connected to said bar, substantially as set forth.

3. A plow having a frame, substantially as described, between the sides of which are suspended on suitable rollers two endless aprons, substantially as described, lying side by side, having a longitudinally-spiral position and adapted to receive the furrow-slice between them as it passes over the share, and deliver said slice at the rear of the plow, substantially as set forth.

4. The frame A, having the traction-roller *y* hung therein and the share *b* fixed thereto, the cutter-wheel hung on said frame, the apron-rollers *w* and *w'*, having a free rotation in the latter, the endless apron 10, hung in a spiral position on said rollers, and the bearing-rollers *d*, hung on the arms *e*, having a pivotal connection with said frame, and the handle 3, projecting upward therefrom, combined with the apron-frame H, pivotally hung in frame A, the roller *z*, having a free rotation in frame H, the apron-rollers *v v*, hung to rotate freely in the latter, and the endless apron 9, hung on the latter-named rollers in said frame H, side to side with said apron 10, in a like spiral position to the last-named apron, substantially as set forth.

5. The frame A, having a suitable share, substantially as described, fixed thereto, an endless apron, as 10, suspended on rollers in said frame in a longitudinal spiral position, combined with an apron-frame, as H, hung pivotally in said frame A, having a second endless apron, as 9, suspended on rollers therein, having a spiral position corresponding to said apron 10, and having the saddle *o* thereon extending under the central portion of said aprons, substantially as set forth.

JAMES H. MORLEY.

Witnesses:
WM. H. CHAPIN,
G. M. CHAMBERLAIN.