G. DODGE.

Plow.

No. 211,892. Patented Feb. 4, 1879.

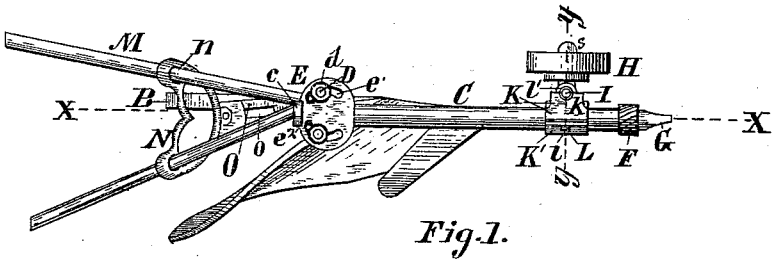

Fig. 1.

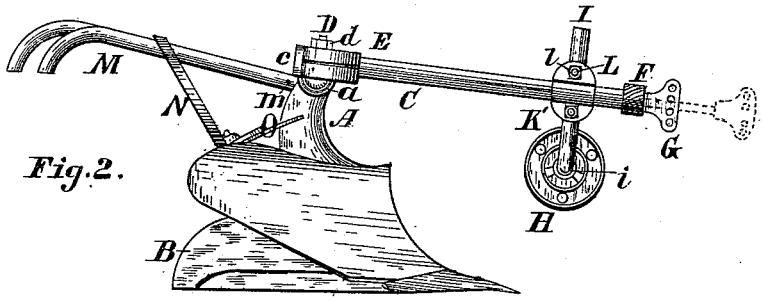

Fig. 2.

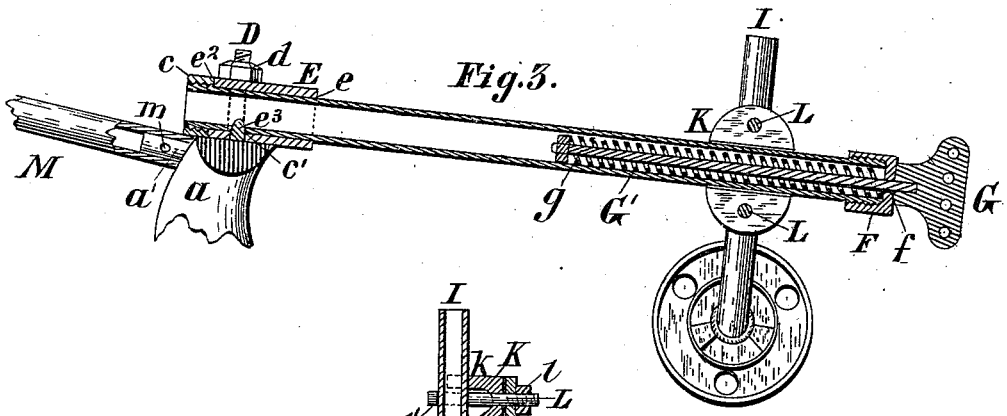

Fig. 3.

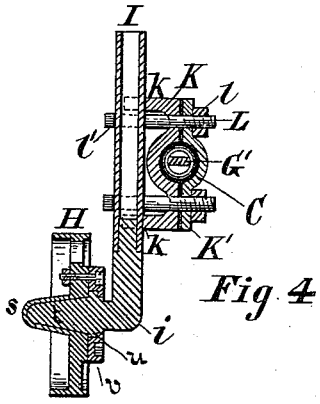

Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE DODGE, OF KALAMAZOO, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO ETHAN ALLEN, OF SAME PLACE.

IMPROVEMENT IN PLOWS.

Specification forming part of Letters Patent No. **211,892**, dated February 4, 1879; application filed September 17, 1878.

To all whom it may concern:

Be it known that I, GEORGE DODGE, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Improvement in Plows, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a plow embodying my improvements; Fig. 2, a side elevation of the same; Fig. 3, a longitudinal section of the beam and attachments, taken on the line *x x*, Fig. 1; and Fig. 4, a transverse section taken on the line *y y*, Fig. 1.

My invention relates to various improvements in plows, the object being to provide a light, strong, durable, and cheap plow, with provision for the ready adjustment of the beam and wheel as circumstances require.

The invention consists in special devices for attaching the beam to the plow-standard, whereby provision is made for the lateral adjustment of the former.

It also consists in special devices for attaching the leading-wheel to the beam, whereby the former may be readily aligned with the land-side of the plow.

In the drawings, A represents the standard, and B the mold-board, of the plow. The particular construction of these parts, however, has no direct connection with my invention, except the upper end of the standard, which is provided with an enlargement or plate, *a*, to provide for the attachment of the beam C. This beam is made of metallic tubing, ordinary gas-pipe of proper size being suitable for this purpose. The beam is straight and of uniform size throughout, and its rear end is provided with a head, *c*, rigidly fastened thereto in any suitable manner, the purpose of which will be presently described.

Two posts or bolts, D, rise from the head of the standard, being shown in this instance as rigidly fastened to the standard, though this is not necessary, as they may be provided with suitable heads, and inserted loosely in holes through the head of the standard, if desired.

Two clamping-plates, E, are provided, having a groove, *e*, extending across their central portions, of such depth that when the plates are put together an opening between them will be formed for the reception of the beam. The plates are also provided with slots e^1 in each end, through which the bolts D pass. The rear end of the plow-beam is arranged between these clamping-plates, and nuts *d* turned down upon the upper ends of the bolts D, which are threaded for this purpose. At the rear of the plates E the edges are provided with notches e^2, adapted to receive the head *c* on the end of the plow-beam, whereby the latter is prevented from turning. If desired, a small pin, e^3, may be arranged in the bottom of the groove in the lower plate, which enters a corresponding hole, *c'*, in the beam, and also prevents displacement of the latter by either longitudinal or rotary movement.

It is evident from this description that the plow-beam may be readily adjusted laterally by slightly loosening the nuts *d*, which will permit the beam to be turned in the direction desired, while the beam is secured between the plates in such a way as to draw the plow forward by the team attached thereto.

The plates E may be cast in one piece, in which case the beam is slipped through the hole made in the fastening device thus formed. The draft attachment may be made to the beam in any suitable manner, being extended, if desired, through the latter, and secured at or near the standard, so that the draft will be directly therefrom.

I prefer, however, an elastic or yielding draft-connection, which I have devised especially for this beam. The front end of the beam is threaded, and a screw-cap, F, fitted thereon, which is provided with a suitable slot, *f*. The clevis-piece G is provided with a draft rod or shank, *g*, adapted to enter the slot in the cap F, through which it is permitted to slide back and forth.

Within the tubular beam the draft-rod *g* is surrounded by a spiral spring, G', held in place by a suitable head or stop on the end of the rod. This spring is made sufficiently strong to sustain the ordinary draft on the plow; but when the latter strikes an obstruction the

spring yields and permits the draft-rod to slide forward slightly, thereby taking up the shock and preventing the breakage of any of the parts of the plow.

The cap F may be attached to the end of the beam in any other suitable way, and I do not limit myself to the screw attachment described.

The plow-wheel H is mounted on the bent lower end of an upright post, I, which is tubular or not, as desired, and has its lower end, *i*, bent at right angles to the main portion to form the axle of the wheel. The post is attached to the beam by two clamping-plates, K K′, constructed to embrace the beam, to which they are tightly clamped by bolts L passing through them, and provided with nuts *l* on their threaded ends. These bolts have eyes *l′* at their opposite ends, which are adapted to receive the post I, and the clamping-plate K has lugs or projections *k*, projecting at one side, which are notched to receive the post I.

By turning up the nuts *l* it is evident that the plates K and K′ will be firmly secured to the beam, and at the same time the post I clamp between the projections *k* and the eyes, so as to be held from turning, and in any position desired. At the same time, by loosening the nuts slightly, the post may be adjusted vertically to raise or lower the wheel, or may be turned in either direction, so as to bring the wheel into perfect parallelism with the land-side of the plow whenever the lateral adjustment of the beam requires it.

The wheel H is provided at its center with a conical thimble-shaped cup or sleeve, *s*, closed at its outer end to form a bearing for the axle end or journal *t* of the post I, said bearing end being fitted to said thimble. Around said journal, at the point of its intersection with the post I, there is a rib or flange, *u*, and a binding collar or plate, *v*, is placed on said post outside of said flange, and bolted to the wheel to keep the same in place. This effectually retains the wheel in place, and excludes all dust and dirt from the frictional surfaces.

The wheel H is adjusted to run upon the sod on the land-side or off side of the plow and entirely outside of the plane of the beam, or directly beneath the beam, as may be preferred. These devices also permit the wheel to run on the land outside of the line of the land-side; or, if desired, the bent end may be turned around underneath the beam, so that the wheel will run under the latter and in alignment with the land-side. This wheel-fastening is also applicable to beams of a different construction by changing the form of the clamping-plates to suit the beam; and in case the latter is wooden the plate K′ may be dispensed with and the eyebolts L passed directly through the beam, and with proper flanges on the plate above and below the beam but one bolt will be necessary.

The handles M are also made of gas-pipe or other metal tubing, bent in the desired form, and fitted at their inner ends over pins *a′*, projecting from the standard just in rear of the head or plate *a*. To fasten the handles to the standard, bolts *m* are passed through their lower ends and the pins, and secured by nuts; or, if it is not desired to make the handles detachable, they may be riveted to the pins. The handles are supported by a skeleton-frame, N, provided with apertures *n* at its upper end, through which the handles pass, and at its lower end fastened by a bolt and nut to a bracket, O, provided with a slot, *o*, to permit adjustment of the support, if necessary, though the slot may be dispensed with, as this adjustment will rarely, if ever, be required. These devices for attaching and supporting the handles permit the latter to be attached and detached with great facility, and their proper adjustment is always accurately secured.

It will, of course, be understood that the head of the standard A or the clamping-plates, between which the beam is held, must be constructed to give the proper pitch to the beam when secured to the standard.

The arrangement of the yielding draft-rod within the beam enables me to obtain a direct central draft—an advantage which is gained by my improved pipe-beam.

The use of piping for the handles enables me to make them quickly and cheaply, as it is only necessary to cut the pipe in proper lengths and give them the required bend, and at the same time they easily are attached to the plow.

Some of the parts described above may, of course, be changed in form; and therefore I do not limit myself to the precise form and construction of the devices herein shown and described, but include in my invention such modifications as will not change the mechanical operation of the several parts shown.

With these improvements I obtain a plow which is cheap and light in construction, but at the same time is strong and durable, while it can be readily taken apart for shipping and repairs.

The plow-wheel in this case is secured by an annular flange on the journal at the inner side of the wheel, and a collar bolted to and forming a part of the wheel, and therefore independent of the standard. I am, however, aware that plow-wheels have heretofore been secured by closed caps and by flanged collars secured to the wheel-standard.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The standard A, constructed as described, in combination with the plow-beam C and the fastening plate or plates E, provided with slots e^1, substantially as described.

2. The plow-beam C, in combination with the plates E, grooved as described, and provided with slots e^1, the standard A, having a head or plate, *a*, at its upper end, and the bolts D, substantially as described.

3. The fastening-plates E, provided with notches e^2, in combination with the cylindri-

cal beam C, having a head, *c*, fitting the notches, to prevent the beam from turning, substantially as described.

4. The plow-wheel H, in combination with the supporting-post I, plates K K′, and eyebolts L, which permit the wheel to be adjusted vertically, or turned to run on or off the land, and at the same time clamp it firmly at any point, and in the position in which it may be adjusted, substantially as described.

5. The wheel-post I, in combination with the fastening-plates K K′, beam C, and eyebolts L, substantially as described.

6. The standard A, provided with pins *a*′, and the support N, provided with apertures *n*, combined with the tubular handles M, substantially as set forth.

7. The sod-wheel H, provided with the conical sleeve *s*, closed at its outer end, and the correspondingly-shaped bearing *t*, provided with the flange *u*, combined with the collar *v*, by which means the wheel is secured to the horizontal journal, substantially as shown and described.

GEORGE DODGE.

Witnesses:
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