No. 638,456. Patented Dec. 5, 1899.

H. HANSEN.

PLOW.

(Application filed Apr. 28, 1899.)

(No Model.)

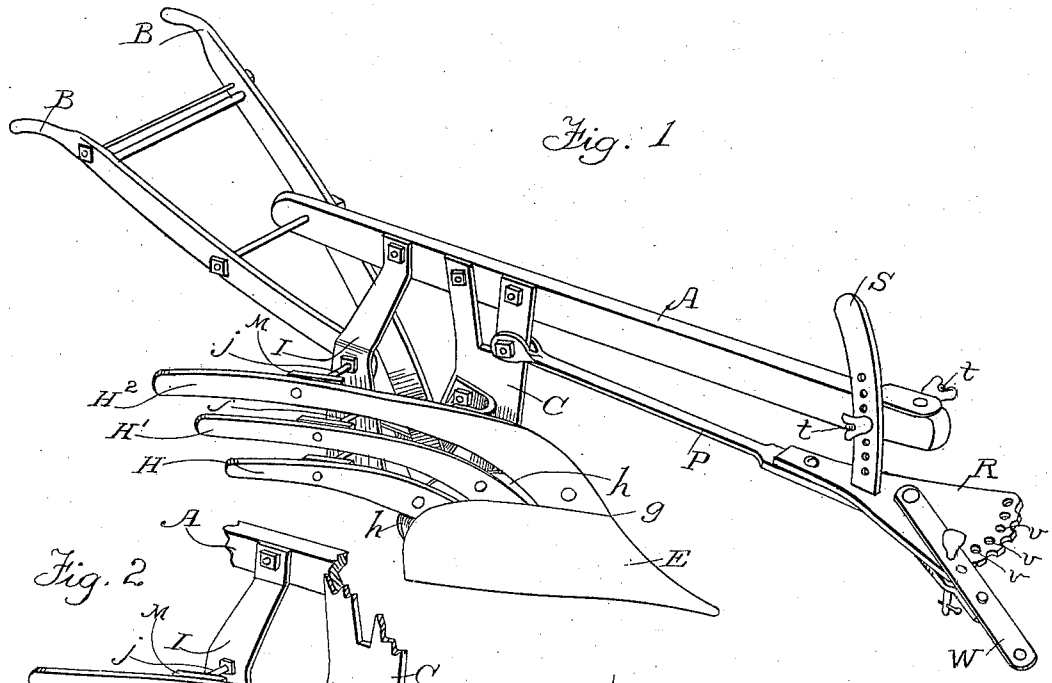


Fig. 1

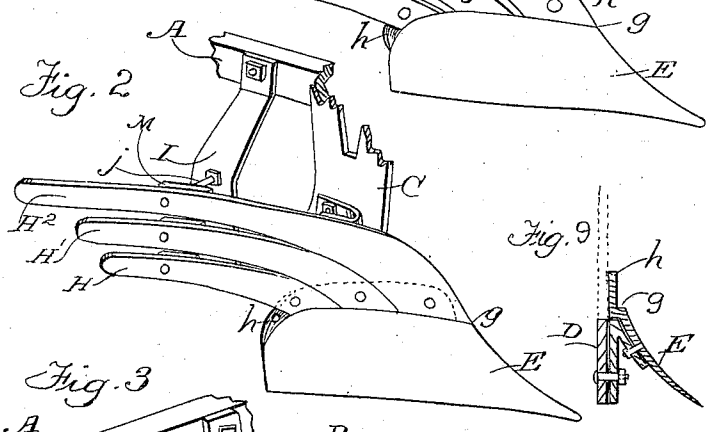


Fig. 2

Fig. 9

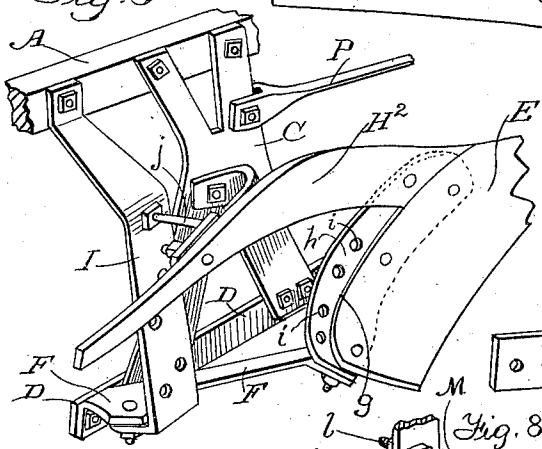


Fig. 3

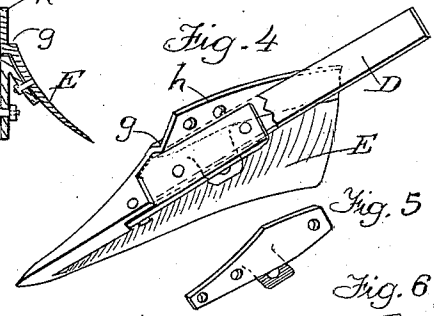


Fig. 4

Fig. 5

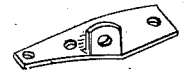


Fig. 6

Fig. 7

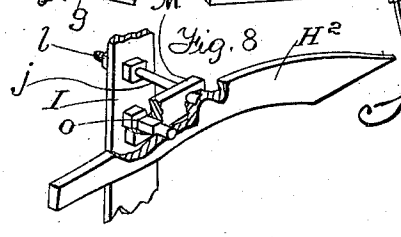


Fig. 8

Witnesses
J. A. Boyless
Chas. J. Armbruster

Inventor
Hans Hansen
by Jno. L. Boone
his attorney

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UNITED STATES PATENT OFFICE.

HANS HANSEN, OF REDWOOD CITY, CALIFORNIA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 638,456, dated December 5, 1899.

Application filed April 28, 1899. Serial No. 714,914. (No model.)

To all whom it may concern:

Be it known that I, HANS HANSEN, a citizen of the United States, residing at Redwood City, California, have invented certain new and useful Improvements in Plows; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

The first part of my invention relates to a sectional moldboard for plows and the means and devices connected therewith by which it is secured to the plowshare and standard of the plow; and it consists of two or more separate strips or plates of metal which extend lengthwise with the line of the moldboard and are adapted to be secured to the share and plow-standard one above the other, and thus form a moldboard which is composed of alternate strips and spaces. This sectional moldboard and the means and devices for adjusting and securing the sections in place are fully described in the specification following.

The second part of my invention relates to a novel draft mechanism, which is connected with the plow beam and standard, and a clevis mechanism for changing the line of draft, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a perspective view of my improved plow, showing the moldboard formed of long narrow plates separated for plowing adobe soil. Fig. 2 is a perspective view showing the edges of the plates forming the moldboard placed together for plowing sandy soil. Fig. 3 is a perspective view showing the framing and bracing of the plow. Fig. 4 is a perspective view of the share and landside of the plow, part of the landside being broken away, showing the bracket or bracing-piece behind it. Figs. 5 and 6 are different views of the bracket. Fig. 7 is a perspective view of the share, showing a separate back plate bolted thereto as a foot-piece for securing one end of moldboard-plates. Fig. 8 is a perspective view of one of the plates that form the moldboard, being broken away to show the stiffening-piece behind it; and Fig. 9 is a vertical section of the landside moldboard and bracket.

A is the plow-beam, and B B the handles. C is the standard, to the lower end of which the landside D is secured in the usual way. The plowshare E is secured to the landside in the ordinary way, and it has a strong brace F, connecting its heel with the rear end of the landside in rear of the standard. The upper edge of this share has an offset g, and a projecting portion h extends along its upper edge in rear of the offset. This offset and projecting portion may be formed as an integral part of the share, as shown at Figs. 4 and 9, or it may be a separate piece riveted or otherwise fastened to the back upper edge of the share, as shown at Figs. 3 and 7.

H H′ H^2 are long narrow plates or strips of metal, the front ends of which fit in the seat of the offset upon the top of the share, so that their front faces come flush with the face of the share. These strips taper in width from front to rear, and their front ends are curved and fitted to unite closely with the top of the share. The lower strip H may be shorter than the strip H′ and the strip H′ may be shorter than the strip H^2, but this is not essential. Being widest at their front ends and gradually narrowing toward their rear ends, it is evident that the spaces between the strips will gradually increase in width toward their rear ends. These parallel plates are twisted to conform to the lines of an ordinary moldboard, so that when secured in place they form a sectional moldboard having the proper curvature to turn the soil. The object of having the spaces between them gradually widen toward the rear is to allow any dirt or substance that may enter the spaces to have a clearance toward the rear. These strips or plates are secured in place by having their front ends bolted or riveted to the projecting back portion h at the top of the plowshare, while they are also fastened by bolts or rivets to a standard I at or near their rear ends. In practice I employ bolts in order that the position of the plates may be shifted to suit soils of different character. For instance, if the soil is wet or heavy I secure the plates to the plowshare at a distance apart, as shown at Fig. 1, so that the spaces will extend from end to end of the plates or moldboard, and thereby reduce the friction throughout the length of the moldboard; but

if the soil is light, dry, and sandy this spacing of the plates must be changed, otherwise the light soil will pass through the spaces and fall in rear of the moldboard. In this latter case I provide separate bolt-holes *i i* in the rear projecting portion *h*, so that the forward ends of the lower plates can be moved forward to abut against the upper plate and against each other, as shown at Fig. 2. This closes the spaces at the front end of the moldboard and diminishes the width of the spaces at the rear.

The standard I, to which the rear ends of the plates H H′ H² are bolted, has its upper end secured to the plow-beam, and it is bent outward, so as to bring the upright portion near the parallel moldboard-plates. Its foot is then bent at right angles and secured to the rear end of the landside. Long bolts *j* are then employed for connecting and fastening the plates in place.

To facilitate the removal and adjustment of the plates H H′ H², I form screw-threads on the ends of the bolts *j*, which pass through the upright standard I, and turn a nut *l* on the screw, so as to come on the inner side of the standard, when the balance of the end of the screw is thrust through the bolt-hole in the standard. Then I turn a nut on the end of the screw against the opposite side of the standard, thus providing set-nuts which make a strong fastening, but which can be adjusted so as to lengthen or shorten the connecting-bolts between the standards and plates, and thereby secure the proper adjustment of the plates. The opposite end of each bolt is secured in and passes through one end of a block M and projects a short distance beyond the opposite face of the block, as shown at Fig. 8. The block M fits against the rear face of the plate, which it fastens, so that it lies parallel with the plate, the projecting end of the bolt entering a corresponding recess in the back of the plate like a dowel. The opposite end of the block is fastened to the plate by a square bolt *o*, which is headed into a countersink on the face of the plate, thereby providing a smooth surface. This double fastening secures the plates against displacement. It is now apparent that I can adjust these plates so as to provide a sectional moldboard of any desired curvature or lines, and thereby accommodate it to the particular kind and character of the soil it is being used in. It also operates with less friction than a solid moldboard.

The draft mechanism which I use consists of a draft-bar P, the rear end of which is bolted to the standard C below the line of the plow-beam. It extends forward underneath the beam A, and its front end projects beyond the end of the beam and is widened, so as to form a plate R. A standard S extends upward from it alongside the front end of the beam, and through it are a number of holes ranged vertically, through either of which a pin or bolt *t* may be passed into the beam, so that the front end of the draft-bar can be adjusted higher or lower, as desired, to give pitch to the share-point in entering the ground. W is an adjustable bar, the rear end of which is pivoted to the mid-line of the plate R, while it extends beyond the front edge of the plate. A number of holes *v v v* are made around the edge of the plate to correspond with a hole in the draft-bar, so that the bar can be adjusted at any desired angle and pinned in place, the whole forming a new style of clevis. The bar W can thus be shifted to any desired angle to the line of draft, so as to allow the team to travel out of the line of the furrow to avoid trees or fences.

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

1. In a plow having a moldboard composed of tapering parallel strips; a standard secured to the plow-beam at its upper end and bent toward the moldboard, and having a vertical portion extending down in rear of the moldboard, and having its foot or lower end bent at right angles and connected with the rear end of the landside, in combination with bolts adapted to connect the rear ends of the narrow moldboard-plates with the vertical portion of the standard, substantially as described.

2. In a plow having a moldboard composed of adjustable parallel tapering plates; set-nuts on the threaded end of the bolt that connects the rear end of said plates with the vertical plow-standard; a block at the opposite end of the bolt to one end of which the bolt is fastened; a dowel-pin in the face of the block at one end adapted to fit into a socket in the plate, and a square bolt-fastening for securing the opposite end of the block to the plate, substantially as described.

3. In a plow, a draft-bar bolted to the standard of the plow below the beam at one end and extending forward below the beam; a horizontal flat plate at the front end of said bar; a standard at the front end of said bar adapted to be adjustably connected with the plow-beam; a bar pivoted at one end to the flat plate and adapted to be fixed at an angle to the line of draft, substantially as described.

In witness whereof I have hereunto set my hand this 6th day of February, 1898.

HANS HANSEN.

Witnesses:
CHAS. J. ARMBRUSTER,
D. B. RICHARDS.