(No Model.)

W. B. VESTAL.

BLACK LAND PLOW.

No. 494,309. Patented Mar. 28, 1893.

Fig. 1.

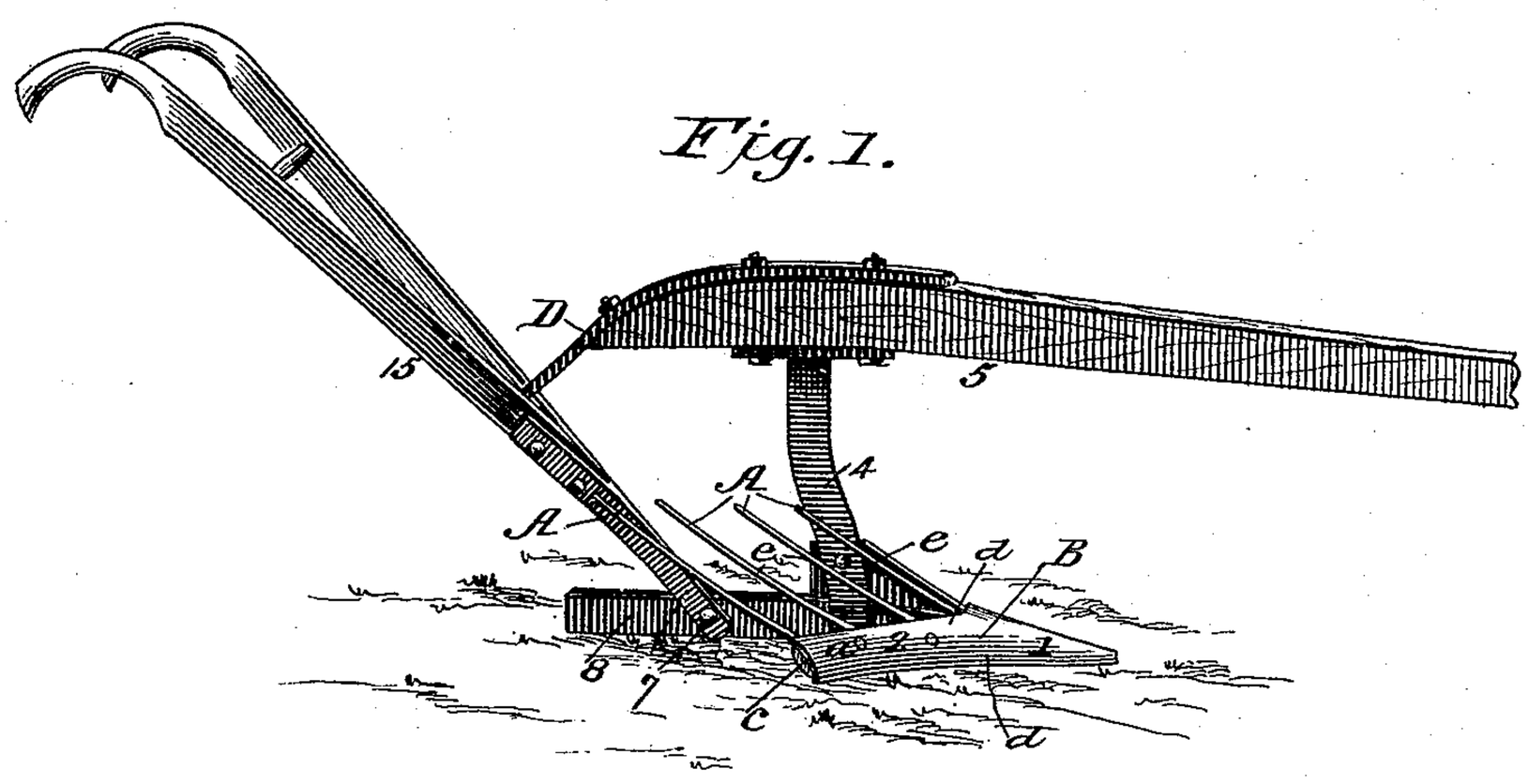


Fig. 2.

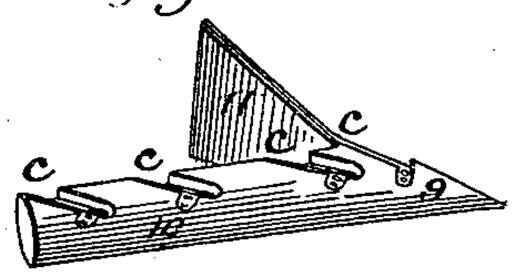


Fig. 3.

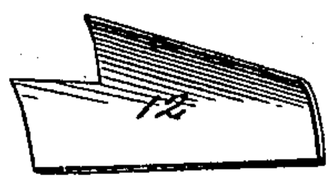


Fig. 4.

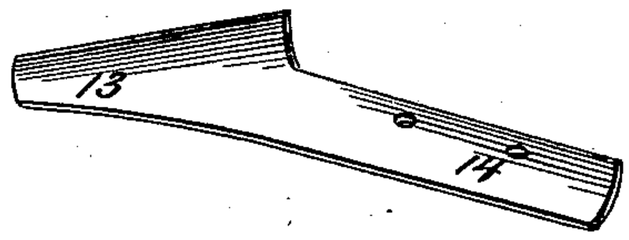


Fig. 5

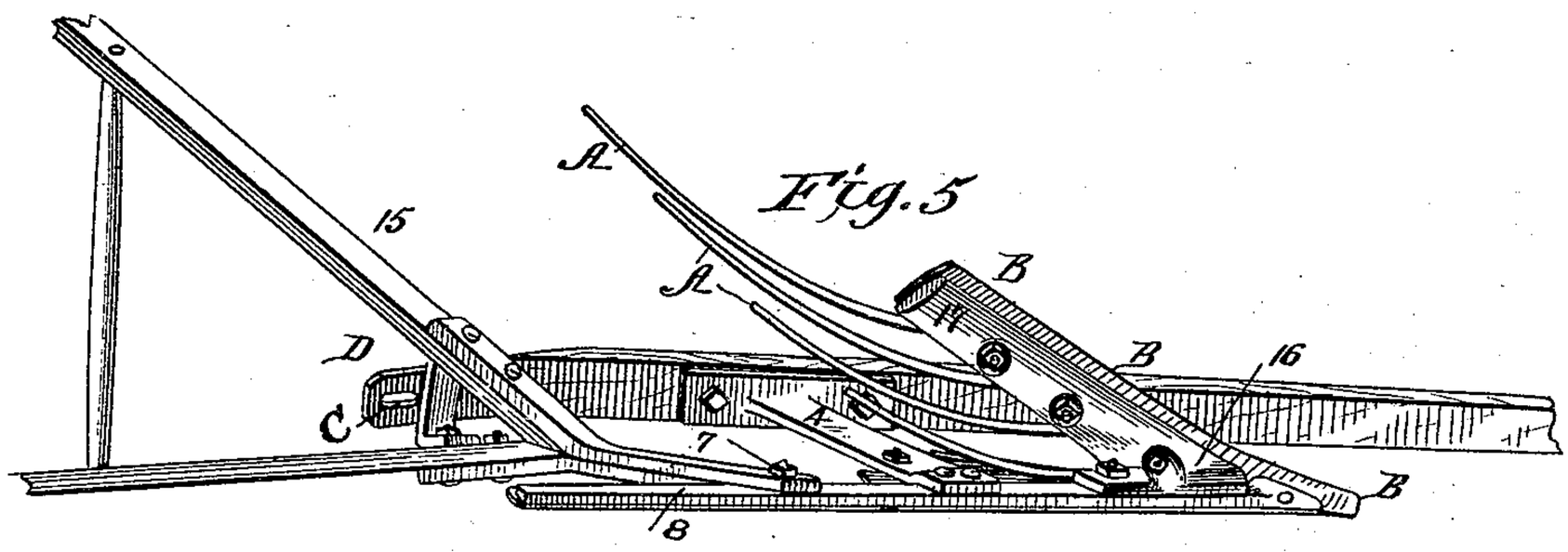
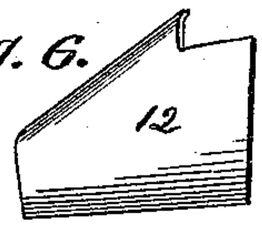


Fig. 6.



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BLACK-LAND PLOW.

SPECIFICATION forming part of Letters Patent No. 494,309, dated March 28, 1893.

Application filed September 2, 1892. Serial No. 444,858. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. VESTAL, a citizen of the United States, residing at Dallas, in the county of Dallas, in the State of Texas, 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 the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in plows, to be used more particularly in black mud or any sticky dirt, and to this end consists substantially in such features of construction and arrangement and combination of the parts as will hereinafter be more particularly described and set forth.

The invention has for its prime object to provide a plow, or more properly a plow-share and mold-board combined, to be used on and attached to plows, which from its peculiar construction and arrangement and the adjustment of its several parts, will shed or scour in what is known in Texas as "black waxy," in Illinois as "gumbo" and in fact in all kinds of very sticky soils accustomed to accumulate on and clog the plows in ordinary use. This share and mold-board may be adjusted to any kind of plow-stock in general use but it is specially intended to be attached and operated with the style of beam and handles hereinafter described and which are to be considered as part of this application. It can be used for plowing either deep or shallow and as a turning plow or for any other purpose for which ordinary plows are used, and it will not clog or become choked by the accumulation of sticky dirt on the share, mold-board or any other part of the plow, thus avoiding the increased power necessary to overcome the draft of ordinary plows now in general use in such soil, as well as the tedious and wasteful delay required to stop and clean them every few rounds. All this will more clearly appear from the following drawings and detailed description thereof, in which—

Figure 1 is a side elevation showing the plow set up and ready for use. Fig. 2 is a perspective view of the clamp by which the lower ends of the mold-board rods are secured in place. Fig. 3 is a perspective view of a clamp employed on the interior of the land side to protect the furrow from falling earth. Fig. 4 is a similar view of the combined point and share. Fig. 5 is a similar view of the complete plow, looking at the under side, and Fig. 6 is a front view of the clamp shown at Fig. 3.

By reference to the several figures the parts are designated as follows:

15 are the handles, 5 the beam, 4 the upright standard.

A, A, A, A, are curved rods round in cross-section, and constitute the mold-board. These rods are curved from the point of juncture with the share, to their upper extremities so as to present a concave surface, and are securely clamped to the share as by the clamping device shown at Figs. 2 and 5. The curvature of the rods A is such that the soil turned up by the point and share strikes them always in parallel planes, that is, they are curved outward at such angles to the plow-share that all points on the several rods which are equidistant from the upper edge of the plow-share B, lie in the same plane but that plane is at a slight angle with the plane of the share so as to give a sort of twist to the mold board as an entirety. The effect of this is that this character of mold-board will scour with the plow-share here provided for but will not operate satisfactorily with any other kind of share. To accomplish this the convexity of the outer surface of the plow-share as hereinafter described must be calculated to a nicety and must not be greater than the arc hereinafter provided, otherwise the dirt will not strike the mold-board at the desired angle. The practical result of this construction of combined concave mold-board and convex share is such that the soil strikes them always with equal force and at a uniform angle, so that the friction is the same at all times and upon every part of the share and mold-board, and the plow not only scours perfectly but the soil is completely pulverized as it is thrown from the furrow.

B B B, shows the plow-share with its wing at 2 and its point at 1. This share is convex on its outer surface throughout its width (*aa*) describing an arc of thirty degrees. It is constructed so as to fit on the outside of the clamp (Fig. 2), covering smoothly and per-

fectly the lower ends of the mold-board rods. On its land side it is also convex outward throughout and is fastened to the bar of the land-side (8). The wing and point of the share are constructed so as to make their outer surface in a right line from *c* to *c* and from *c* to 1 (the point), there being a very slight depression or angle from *d* to *d* but still preserving the convexity of the surface; and the line of the ground edge of the wing and point of the share meets the land-side at an angle of forty-five degrees. This causes the plow to move through the soil at that angle. This movement, together with the convexity of the outer surface of the share, causes the dirt as it is turned up and cut by the plow point to rise up over the share in a slanting direction which describes an oblique angle, the resultant of the two resistances to the soil and to the forward movement of the plow; viz., the direction of the share through the ground at an angle of forty-five degrees and the convexity of the surface of the share itself of thirty degrees. This produces a uniform and consistent friction, scours the share and throws the soil on to the concave fingers of the mold-board as described above in such manner and at such an angle as to secure its pulverization and the perfect cleansing of the mold-board.

D, is the iron of the beam which is fastened to the handles by a bridge with a slot and movable bolt. This construction enables the handles to be raised or lowered at will to suit the height of the plow-man; and the handles being fastened to the land side bar by a pivotal bolt or fulcrum (7) and the curve of the iron end of the beam (D) being such that whether the handles are raised or lowered in the slot they remain the radii of the same circle, no change is made in the elevation and direction of the plow point by a change in the adjustment of the handles.

The clamp constitutes the iron frame-work in which the mold-board rods are inserted in slots *c*, *c*, *c*, *c*, and riveted therein. It is of the same general shape as the plow-share as to the wing and point (9 and 10) and the share fits perfectly over it and is bolted to it. (See Fig. 5.) It is also shaped so as to have a triangular shaped piece (11) which fits up under and next to the standard on the land side, and the bar of the land-side is fastened to it. This clamp is convex throughout in all its exposed parts on the inside of the plow, and is so constructed and fastened to the share as to completely fill up the throat of the wing and point of the share, thus preventing the accumulation of dirt at the under portion of the share and the choking of the plow, a serious defect in other plows in sticky black land.

12 is a trapezoidal shaped piece which fits over the triangular part of the clamp on the land-side (8), and it connects the share-point with the land-side. This piece 12 is also convex on its outer surface, as is clearly shown at Fig. 6.

The plow share as shown at Fig. 4 consists of the point, 13 and wing, 14, the concave surface fitting over the clamp being indicated by the shade lines.

By reference to Fig. 5 the curved rods A A A A, show their concave outer and convex inner surface, and the manner in which they are fastened to the share by the clamp (16, 17). B B B is the plow-share as the same appears from beneath when fastened in place. 15, handles; D, iron end of the beam where the same is attached to the bridge between the handles; C, slot for raising or lowering the handles; 8, land-side attached to land-side bar; 9, land-side bar. 16, 17, shows clamp in place, showing its convex surface and how it fills up the throat of the share.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a plow, the combination with the solid convex point and share of the mold-board composed of equidistant rods secured to the share and bent into concave form, substantially as and for the purpose set forth.

2. The combination and arrangement of the point and share, the concave rods A, and clamps 9—10, substantially as and for the purposes set forth.

3. The combination and arrangement of the standard 4, the land-side 8, point and share, and clamping plates 11 and 12, substantially as and for the purposes set forth.

4. In combination with the landside and share the clamp 12, adapted to be secured to the standard and point, and made convex on its front surface to shield the furrow from falling earth, substantially as described.

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

WILLIAM B. VESTAL.

Witnesses:
JAS. N. EDMONSON,
LEONARD HALL.