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REPLACEABLE POINT FOR PLOW SHARES

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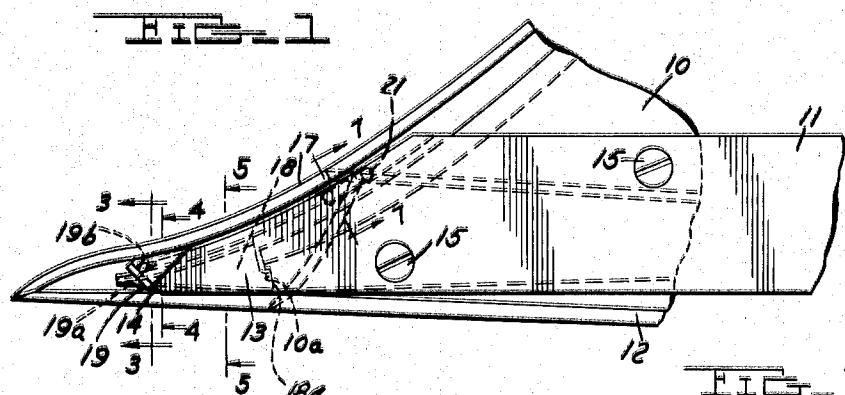


FIG. 7

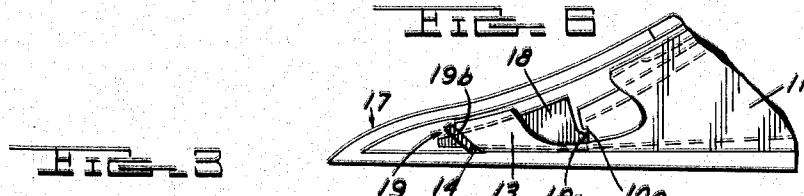
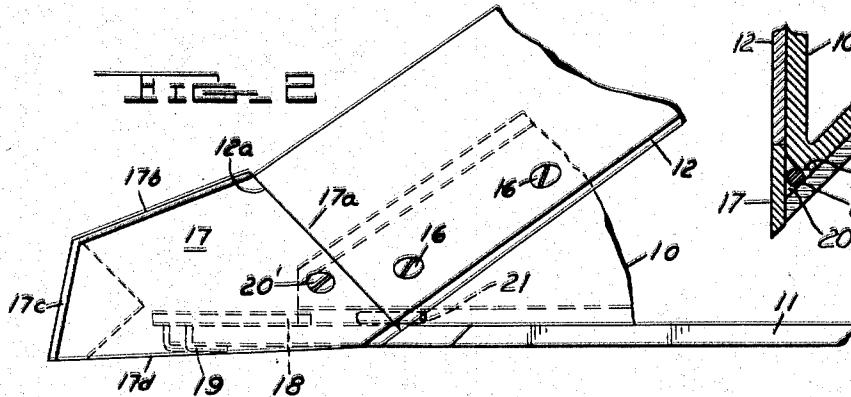
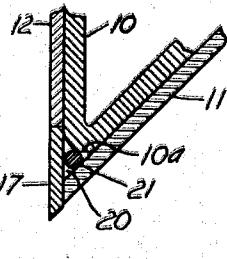


FIG. 3

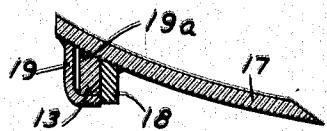
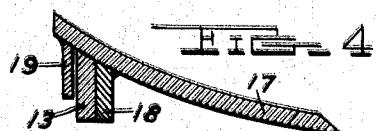
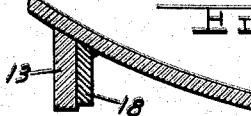


FIG. 5



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REPLACEABLE POINT FOR PLOW SHARES

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This invention relates to a plow construction wherein a removable point portion is provided for the share which is readily and economically replaceable when worn for reconditioning the plow.

The soils on various farm lands throughout the country have widely varied characteristics which differently affect the plow. For example, abrasive soils such as a sandy soil rapidly wear and dull the share while certain other soils which contain a large amount of organic matter are far less injurious to such share. As is well known, the useful life of the plow share is comparatively short while the other components of the plow are relatively long lived. This is particularly true of the point portion of the share, which receives the full brunt of wear, and consequently such point is dulled and worn away long before the wing portion of the share is no longer useable.

While worn plow shares of conventional shape can be reconditioned when worn, such reconditioning is not only time consuming but relatively expensive especially in view of the fact that there are today fewer blacksmiths available for reshaping and resharpening the share. A need, therefore, has been long apparent for a plow construction which utilizes an inexpensively replaceable point for reconditioning the plow at a cost appreciably less than the cost of resharpening the share.

Accordingly, it is an object of this invention to provide an improved plow construction embodying a plow point which is readily removable and replaceable.

Another object of this invention is to provide a separable plow point for a plow share wherein such point is securely locked and supported by other components of the plow when assembled therewith to provide a substantially unitary construction.

A further object of this invention is to provide a replaceable plow point for a moldboard plow which is secured to the plow by a single bolt and is locked in assembly by the other members of the plow.

The specific nature of this invention, as well as other objects and advantages thereof, will become apparent to those skilled in the art from the following detailed description, taken in conjunction with the attached sheet of drawings on which, by way of preferred example only, is illustrated one embodiment of this invention.

On the drawings:

Figure 1 is a fragmentary side elevational view of a moldboard plow showing the replaceable share point of this invention secured to the plow.

Figure 2 is a plan view of Figure 1.

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Figure 3 is a cross sectional view taken along the plane 3—3 of Figure 1.

Figure 4 is a cross sectional view taken along the plane 4—4 of Figure 1.

5 Figure 5 is a cross sectional view taken along the plane 5—5 of Figure 1.

Figure 6 is a detail view of the front end portion of the plow illustrated in Figure 1, shown partly broken away.

10 Figure 7 is a partial sectional view taken on the plane 7—7 of Figure 1.

As shown on the drawings:

15 In Figure 1 there is shown in assembled relation a moldboard plow having a plow point constructed in accordance with this invention. Such plow comprises the usual frog 10 having attached thereto a landside 11 and share wing 12 and, of course, a moldboard (not shown). Landside 11 has a forwardly extended tapering point 13 provided with a sloped end surface 14, best shown in Figures 1 and 6, for a reason to be later explained. Landside 11 is preferably constructed from rolled stock and stamped or sheared to size and is secured to one side of frog 10 by a pair of bolts 15. Share wing 12 may also be constructed from a rolled or stamped section cut to the desired length and provided with a suitable transverse curvature for blending with the curve of the moldboard (not shown). The forward end 20 of share wing 12 is provided with a squared end surface 12a for a reason which will later appear. Share wing 12 is secured on the opposite side of frog 10 by a pair of bolts 16.

25 A replaceable share point 17 is mounted on frog 10 ahead of share wing 12 and such point comprises a substantially pentagonal plate rolled to substantially the same curvature as provided for share wing 12. Share point 17 is provided with a squared rear end surface 17a which abuts the squared end surface 12a of share wing 12. The bottom surface 17b of point 17 defines an obtuse angle with respect to the bottom surface of share wing 12 and a forwardly facing cutting edge 17c slopes downwardly to intersect the bottom surface 17b of point 17. Both the bottom edge 17b and forward cutting edge 17c are bevelled to provide an optimum cutting edge and both of such edges are disposed somewhat below the bottom cutting edge of share wing 12 to thereby increase the life of point 17. The upper edge 17d of point 17 slopingly overlies landside 11 as shown in Figure 2 to provide a lead whereby the plow point will more effectively shear the slice from the furrow wall.

30 35 40 45 50 55 On the underside of plow point 17 there is welded a triangularly shaped lug 18, such lug

being disposed substantially parallel to the upper edge 17d of point 17 as shown in Figure 2. Lug 18 is provided with an integral rearwardly disposed projection 18a and the forward edge of frog 10 is notched out as shown at 10a to receive projection 18a. Also on the underside of point 17 near the upper forward end of such point there is welded a triangular shaped lug member 19 formed from a section of angle iron which, in cooperation with lug 18, defines a substantially 10 triangularly shaped socket 19a. Member 19 is provided with a sloped interior surface 19b which abuts sloped surface 14 on landside 11 for a purpose that will be presently explained.

When landside 11 and share wing 12 are securely bolted to frog 10, plow point 17 is readily assembled to the plow bottom. Point 17 is placed over the extended point 13 of landside 11 with the sloped end 14 being placed within socket 19a and abutting sloped surface 19b of lug member 19 while projection 18a on lug 18 enters notch 10a provided in frog 10. Replaceable point 17 is then secured to frog 10 by a single bolt 20 inserted through a suitable transverse hole provided adjacent end surface 17a of point 17. The 25 extended forward end portion 13 of landside 11 abutting the underside of point 17 adequately supports such point.

It may thus be seen that the locking engagement of projection 18a of lug 18 with frog 10 and the engagement of the end 13 of landside 11 within socket 19a locks the tip of point 17 to the landside, thus only the single bolt 20 is required to secure the point to frog 10. The abutting relationship of the end surfaces 12a and 17a respectively of share wing 12 and point 17 insures against any rocking movement of point 17 when assembled to the plow bottom.

When the frog 10 is of the conventional shape having a rounded front edge 10a, best shown in Figure 7, a generally triangularly shaped recess or opening 20 is defined between the front edge 10a of the frog and the adjacent surfaces of the landside 11, the share wing 12, and the share point 17. In some instances additional locking of the share point relative to the share wing is desirable, and this invention contemplates utilization of the aforescribed recess or space 20 to conveniently provide such additional locking. Thus, as best shown in Figures 2 and 7, a bar or rod 21 having a cross sectional area permitting its insertion in the recess 20, has its one end welded to the back face of the replaceable share point 17 adjacent to the uppermost tip of such share point and the other end projecting outwardly beyond such share point. The rod 21 is so disposed on the share point 17 so as to snugly fit into the recess 20 and that portion of the rod 21 which projects beyond the share point 17 will underlie the top forward corner of the share wing 12. Hence, an additional positive locking of the share point 17 relative to the remaining elements of the plow is conveniently obtained.

It will thus appear from the above description that the plow point of this invention is readily and inexpensively constructed and such point is conveniently mounted on a plow bottom for rapid assembly or disassembly. A plow point constructed in accordance with this invention may then be more cheaply replaced with a new point when worn than the cost to the user for reconditioning the share. The wing portion of the share needs relatively little attention because such wing portion receives little wear in comparison to the plow point and, therefore, such 75

wing portion may be retained on the plow for the life of several plow points before reconditioning of the share wing is required.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim:

1. A plow construction comprising a frog having angularly disposed moldboard and landside faces and a forwardly opening recess, a landside having a tapered forward end, means for securing said landside on said frog, a share secured to the moldboard face of said frog, a replaceable share point having a rearwardly projecting lug on its rear face, a projection on said lug engageable with said frog recess, an angularly shaped member secured to the rear face of said share point adjacent said lug, said angularly shaped member defining a socket for snugly receiving the tapered forward end of said landside, and bolt means for securing said share point to said frog in abutment with the forward end of said share.

2. A plow construction comprising a frog having a forwardly facing recess and angularly disposed moldboard and landside faces, a landside having a tapered wedge-like forward end, means for securing said landside on said frog with the tapered forward end being disposed ahead of said frog, a share secured to the moldboard face of said frog, a replaceable share point having a rearwardly disposed lug on its rear face, a projection on said lug engageable with said frog recess, an angle shaped member secured to the rear face of said share point adjacent said lug, said angle shaped member defining a socket having a sloped bottom surface, said socket being constructed and arranged to receive said wedge shaped end of said landside with said lug contiguous to said landside, the front end surface of said landside cooperating with said sloped bottom surface to lock said share point on said landside, and bolt means for securing said share point to said frog in abutment with the forward end of said share.

3. The combination defined in claim 2 wherein said bolt means comprises a single bolt passing through said share point and the moldboard face of said frog.

4. A plow construction comprising a frog having angularly disposed moldboard and landside faces terminating in a juncture surface, a plate-like share wing secured to said moldboard face of the frog with its top forward corner projecting beyond said juncture surface, a plate-like landside secured to the landside face of the frog with at least a portion of its forward edge projecting beyond said juncture surface and cooperating with said top forward corner of said share wing and said juncture surface of said frog to define a three-walled recess, a replaceable share point abutting said share wing and said forward edge of said landside, and a projection secured to the rear face of said share point and projecting beyond said share point into said recess to lock said share point to the plow.

5. A plow construction comprising a frog having angularly disposed moldboard and landside faces terminating in a juncture surface, a plate-like share wing secured to said moldboard face of the frog with its top forward corner projecting beyond said juncture surface, a plate-like

landsides having a forward portion projecting beyond said juncture surface of said frog, said forward portion of said landside cooperating with said top forward corner of said share wing and said juncture surface of said frog to define a pocket, a replaceable share point comprising a plate-like member having a working face, means integrally secured to the rear face of said plate-like member defining a socket for snugly receiving the tip portion of said forwardly projecting portion of said landside, and a rod-like projection integrally secured to the rear face of said plate-like member and projecting into said pocket to thereby lock said replaceable share point in assembly on the plow.

6. A replaceable plow point for a plow having a frog, a landside with a tapered front end projecting forwardly beyond the frog, and a share wing mounted on the frog with its top forward corner cooperating with said landside to define a pocket immediately in front of

said frog; comprising a plate-like member having a working face, means welded to the rear face of said plate-like member defining a socket for snugly receiving said tapered front end of the landside, projection means integrally secured to the rear face of said plate-like member for snugly engaging in said pocket, and bolt receiving means in said plate-like member for detachably securing said plate-like member to the frog.

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