Dec. 8, 1936. R. P. LIER 2,063,688

REMOVABLE PLOWSHARE EDGE

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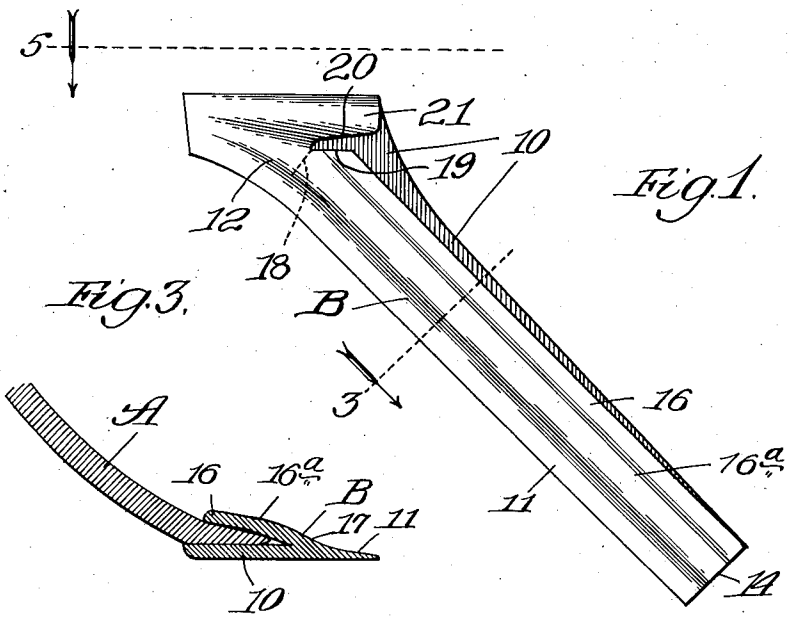


Fig. 1.

Fig. 3.

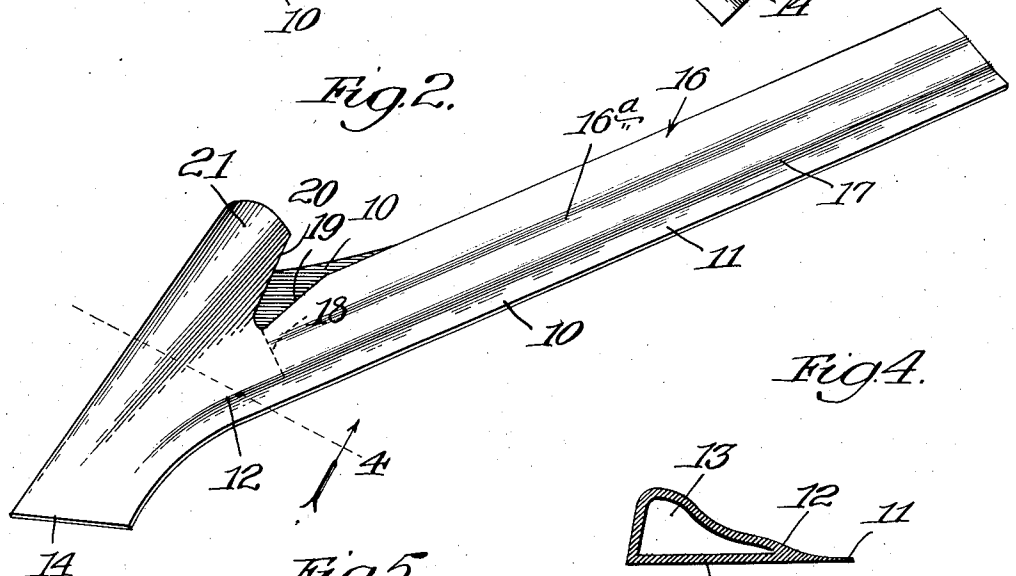


Fig. 2.

Fig. 4.

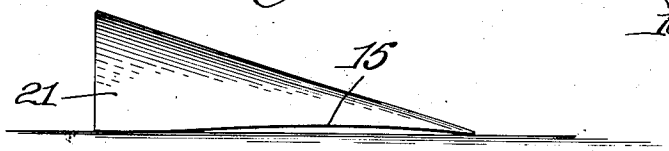


Fig. 5.

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REMOVABLE PLOWSHARE EDGE

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11 Claims. (Cl. 97—125)

This invention relates to a removable plowshare edge and more particularly to an edge mounting adapted to frictionally engage the worn edge and point of a plowshare.

Broadly, the object of this invention is to provide a slip-on plowshare edge which may be readily placed on or removed from the worn edge and point of a plowshare and which is adapted to maintain itself firmly on the edge and point of the plowshare by means of a tight frictional grip. A further object is to provide such a slip-on plowshare edge which provides a smooth uninterrupted cutting surface while, at the same time, maintaining its frictional hold on the plowshare. A further object is to provide a removable plowshare edge equipped with a share-point pocket and wing-edge pocket of such construction as to absorb the shocks caused by striking a hard substance in plowing without substantial injury to the removable edge or to the plowshare. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a preferred embodiment, by the accompanying drawing, in which—

Figure 1 is a side view of a removable plowshare edge embodying my invention; Fig. 2, a perspective view; Fig. 3, a sectional view, the section being taken as indicated at line 3 of Fig. 1 and the wing-edge of the plowshare being shown in engagement with the removable edge; Fig. 4, a sectional view, the section being taken as indicated at line 4 of Fig. 2; and Fig. 5, a front view of the plowshare point pocket.

In the illustration given, A designates the wing of a worn plowshare; and B, the removable plowshare edge.

The removable edge B preferably comprises two strips of metal of different composition welded or otherwise joined together to form a unitary structure providing an uninterrupted cutting edge. One of the metal strips 10 is preferably formed of a relatively high carbon-content steel and is hardened sufficiently to enable it to take a high polish and maintain a cutting edge 11. The forward end of the blade 10 is folded over upon itself, as shown more clearly in Fig. 4 and welded to itself at 12, thus providing a point pocket 13. Preferably, the weld at the forward end of the pocket terminates short of the cutting point 14. The folding of the metal is so accomplished as to cause the bottom of the land-side to be arched slightly, as indicated by the numeral 15 in Fig. 5. The arching or dishing of this surface gives the plow greater suction and makes it go into the ground much more easily.

A second strip of metal 16, which is of relatively low carbon content as compared with the metal strip 10, is welded to the strip 10 at a point intermediate the width of strip 10 and as indicated by the numeral 17. It will be noted that the welding of the two strips along the line 17 leaves a relatively wide cutting edge 11 which may be repeatedly sharpened as desired.

The strip 16 of mild steel is preferably welded to the folded-over portion of blade 10 at about the point indicated by the numeral 18. The forward end of strip 16 is cut away at an angle along the line 19, and the folded-over portion of blade 10 is also cut away along the line 20, the lines 19 and 20 providing between them a substantially V or U-shaped recess.

The rear portion 21 of the folded-over pocket portion of blade 10 is preferably annealed for about two inches forward of the rear edge thereof to increase the toughness of said rear portion 21. It will be observed that by virtue of the above-mentioned recess, the rear portion 21 of the pocket is free to yield with the point of the plowshare and enables the removable edge to absorb shocks resulting from impact of the point with hard objects in the ground.

As shown more clearly in Fig. 3, the recess formed between the strip 16 and blade 10 is of such shape as to receive the worn edge of the plowshare wing, but the recess does not permit the edge of the wing to engage the bottom of the recess. The result is that when a hard object is struck in plowing, the shock resulting therefrom is partly absorbed by the wing of the used share being driven into the recess. The mild steel strip 16 is sufficiently tough to yield to the widening of this recess without breaking. Under normal plowing conditions, the edge of the wing of the used share will not be driven near the bottom of the recess.

The operation of the device is as follows:

The removable plowshare edge may be readily attached to the plowshare edge by applying a block of wood to the removable edge and tapping it with a hammer. This causes the point of the share to engage the point pocket of the removable edge and the wing edge to be received between the elastic walls 16 and 10. The frictional grip of the walls 16 and 10 and of the folded pocket portion 21 is sufficient to hold the edge firmly on the worn plowshare edge. Even though the plow should be moved rearwardly, as when a tractor plow is backed, the friction grip is suffi-

cient to hold the edge in place. When it is desired to remove the attachment edge for resharpening or for any other purpose, the removal may be accomplished easily by tapping the rear portion of the removable or attachment edge.

The welding between blades 10 and 16 is at such a point as to leave a relatively wide cutting edge 11 which may be repeatedly sharpened, and the same is true as to the cutting edge point 14. Because of the convenient size of the edge and its simple construction, the farmer may sharpen it on his emery-wheel. In the busy plowing season, the farmer may, by using a number of removable edges, keep his plows in sharp condition while avoiding the necessity of taking plows to town for sharpening.

The removable edge, by employing a turned-over portion of the cutting blade, the lower edge portion of which is welded to the blade, provides a point pocket which will stand the severest strain, while the rear spring portion 21, having been annealed, is able to provide a sufficient cushion against shocks to prevent breakage of the point. The merging of strip 16 with the folded-over portion of the point pocket at 18 provides a smooth uninterrupted surface from the point to the back of the edge. The new device avoids the use of protruding spring fingers or attachment lugs or bolts, all of which present a very substantial obstruction to the cutting efficiency of the edge.

In the description of the invention, I have referred to the use of carbon as a hardening element in the steel strips employed. It will be understood, however, that other means may be employed for bringing about the relative hardness and toughness of the two strips which are secured together.

In the specific illustration given, I have described the metal strips as being welded together. It will be understood that any other suitable means for joining the strips may be employed, and by the use of the word "welded" in the accompanying claims, I intend this broader meaning of the word.

Instead of welding two strips together, as hereinbefore described, it will be understood that the mount may be constructed from a single piece by a drop forge process or other suitable method.

In order to increase friction grip of the strip 16, I prefer to bend it longitudinally at the point indicated by the numeral 16*a*, as shown more clearly in Fig. 3. The crimp or bend in the strip 16, thus formed, exerts a frictional hold against the upper portion of the worn plowshare edge so as to retain it firmly within the socket of the mount.

While in the illustration given, I have shown a specific form of attachment edge or mount, it will be understood that many changes in details may be made while still employing the spirit of my invention. The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

I claim:

1. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end folded over to provide a point pocket, and said first-named strip having its forward edge abutting said folded-over portion of the second-named strip.

2. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end portion folded over to provide a point pocket, and said first-named strip having its forward edge aligned with and welded to said folded-over portion of the second-named strip.

3. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end portion folded over and welded to itself to provide a point pocket, and said first-named strip having its forward edge adjacent said folded-over portion of the second-named strip.

4. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end folded over and welded to itself to provide a point pocket open only at its rear side, and said first-named strip having its forward edge abutting said folded-over portion of the second-named strip.

5. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end folded over and welded to itself to provide a point pocket, and said first-named strip having its forward edge aligned with and welded to a portion of the folded-over portion of said second-named strip, said first-named strip being separated at its upper forward end from said folded-over pocket portion of the second-named strip by a substantially U-shaped slot.

6. A removable plowshare edge comprising a pair of metal strips, one of which has its lower longitudinal edge welded to the other at a point intermediate the width of said second-named strip, said second-named strip having its forward end folded over and welded to itself to provide a point pocket, said first-named strip having its forward edge aligned with and welded to a portion of the folded-over portion of said second-named strip, said first-named strip being separated at its upper forward end from said folded-over pocket portion of the second-named strip by a substantially U-shaped slot, and the rear portion of said folded-over pocket portion being annealed to provide a point-engaging part which is tougher than the remainder of the pocket point.

7. A removable plowshare edge comprising a pair of metal strips of different composition, the first of said strips being of substantially higher carbon content than the second, the second strip being welded to the first at a point above the bottom edge of the first strip, said first strip having its forward end folded over upon itself to provide a point pocket, and said second strip having its forward edge abutting said folded-over portion of the first strip.

8. A removable friction-grip plowshare edge comprising a strip of relatively high carbon content steel, a second strip of relatively low carbon steel, said second strip being welded to the first at a point above the bottom edge of the first, said first strip having its forward end folded over

and welded to the forward end of said second strip.

9. A removable friction-grip plowshare edge comprising a pair of metal strips, the first being of hard steel and the second being of mild steel, the second strip having its bottom edge welded to the first strip above the botom edge of the first strip, and the said first strip having its forward end folded over and welded to itself to provide a point pocket, said pocket portion of the edge being dished inwardly on the land-side.

10. A removable friction-grip plowshare edge comprising a longitudinal strip of metal having its bottom provided with a cutting edge, said strip having a front pocket portion and a rearwardly extending body portion, said body portion of the strip having its top edge provided with a deep pocket extending the length thereof and one wall of said pocket being bent along a longitudinal line so as to bring the top edge of said wall toward the other wall, and said pocket portion of said strip being provided with a free resilient edge adapted to engage the point of a plowshare to lock said point within said front pocket.

11. A removable friction-grip plowshare edge comprising a longitudinal strip of metal having its bottom provided with a cutting edge, said strip having a front pocket portion and a rearwardly extending body portion, said pocket portion of the strip extending above the body portion and providing adjacent the top thereof a free resilient edge adapted to engage and lock the point of a plowshare within said pocket, said strip body having its top edge provided with a deep pocket extending from the rear thereof forwardly to said front pocket.

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