

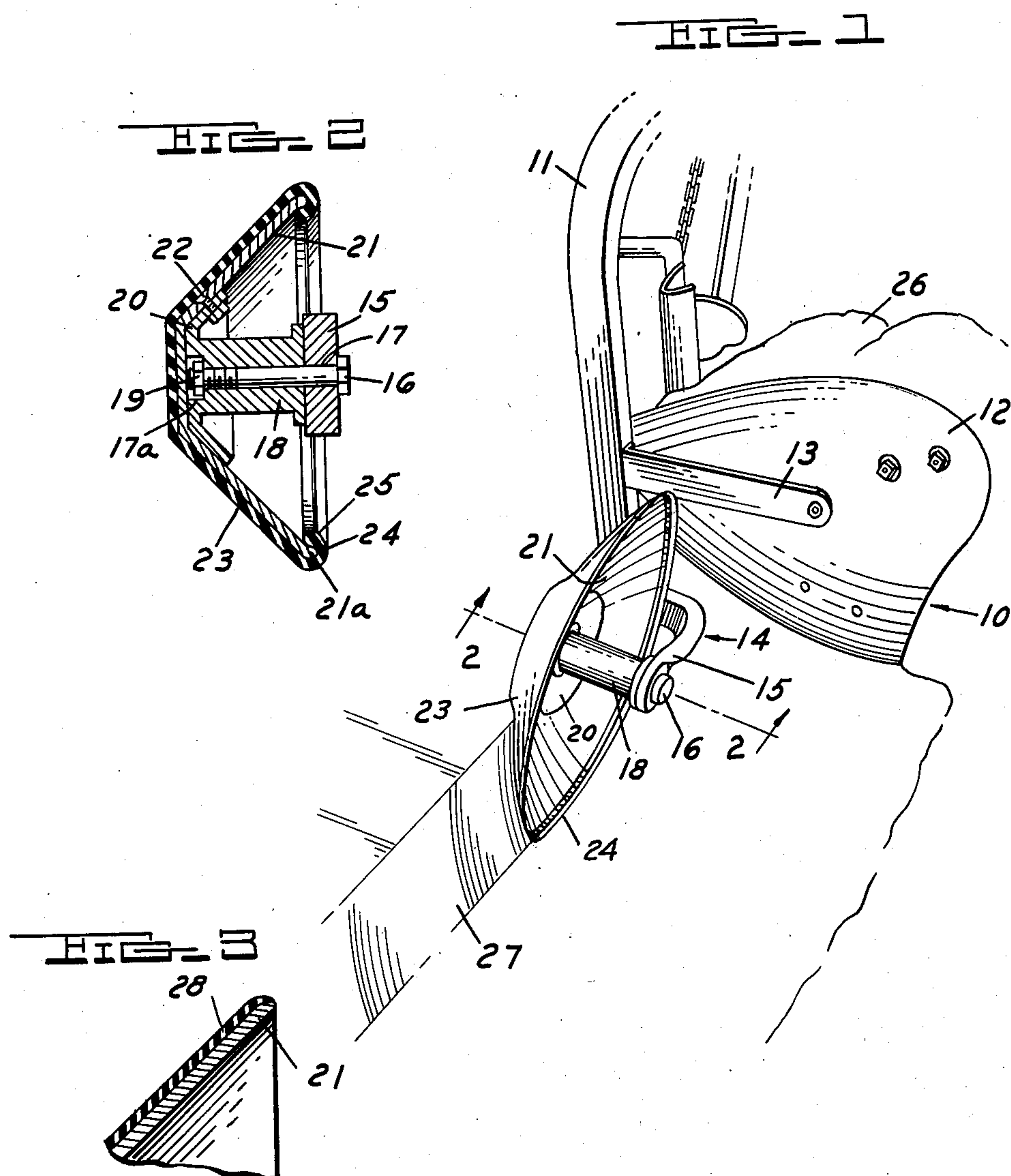
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DETACHABLE RESILIENT COVER FOR ROLLING LANDSIDES

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DETACHABLE RESILIENT COVER FOR
ROLLING LANDSIDES

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This invention relates to an improved landside for earth working implements such as moldboard and disc plows, and particularly to an arrangement permitting the surface of the landside to be selected to fit the characteristics of the soil.

In any plowing operation, there is a so-called side draft force of considerable magnitude directed against the furrow wall. To counteract such side draft, it has been common to employ a furrow wheel, which, when attached to the plow beam and in rolling contact with the furrow wall, greatly reduced the frictional losses encountered with any type of sliding landside, hence reduced the draft effort required in plowing.

The landside of a plow, whether a sliding or rolling type is commonly constructed of metal and at least a portion of such landsides is always in contact with the furrow wall. It is well known that most inexpensive metallic materials do not have high abrasion resistance, therefore, when a metallic landside is used in soils of an abrasive character, the rapid wear makes frequent replacement of the landside necessary. Again, when a metallic landside is used in extremely sticky soil, such soil readily adheres to the surface of the landside. Even when employing a scraper in conjunction with the landside, particularly in the case of a rolling landside, the sticky soil will build up on the landside and around the scraper to such an extent that frequent hand scouring and clearing is required, resulting in loss of time. It will be appreciated, however, that a metallic landside is quite satisfactory in certain other types of soils.

Accordingly, it is an object of this invention to provide an improved landside for plows having a plurality of surfaces selectively adapted to the characteristics of the soil being plowed.

Another object of this invention is to provide an improved landside for plows characterized by the utilization of a replaceable cover for a landside to produce an optimum surface material on the landside for the particular type of soil being plowed.

Another object of this invention is to provide a replaceable cover for the rolling landside of a moldboard plow which has a surface resistant to the adherence of sticky soils.

Still another object of this invention is to provide a resilient coating for a rolling landside which is resistant to both abrasive and sticky soils.

A further object of this invention is to provide a resilient cover for a rolling landside of a moldboard plow which is inexpensively manu-

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factured and which greatly increases the life of the rolling landside.

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 sheets of drawings on which, by way of preferred example only, is illustrated two embodiments of this invention.

On the drawings:

Figure 1 is a perspective rear end view of a moldboard plow showing the rolling landside mounted behind the plow bottom.

Figure 2 is a cross sectional view taken along the plane 2—2 of Figure 1.

Figure 3 is an enlarged detail view showing a modification of the invention.

As shown on the drawings:

There are many types of landside for plows to which this invention may be adapted. All of the landsides are utilized for the same purpose namely, to counteract the side draft introduced when plowing. It, therefore, follows that all landsides are subjected more or less to the same amount of wear from erosion and to difficulties encountered in sticky soils. Inasmuch as all landsides perform substantially the same function, there will be described herein only a preferred application of this invention as applied to rolling landsides or furrow wheels. Accordingly, there is shown in Figure 1 a moldboard plow bottom of conventional construction secured to a plow beam 11. The moldboard 12 of plow bottom 10 is braced relative to plow beam 11 by a bracket 13. A substantially L-shaped bracket 14 is mounted on the lower end of plow beam 11 and such bracket is provided with a horizontal rearwardly extending arm 15. A horizontally disposed bolt 16 is inserted through a transverse hole 17 provided adjacent the end of arm 15 and a hub 18 is rotatably mounted on bolt 16. A nut 19 screwed onto the threaded end portion of bolt 16 and resting within a counterbore 17a rotatably secures hub 18 on bolt 16.

An integral substantially conically shaped flange 20 is provided on the left end of hub 18 as shown in Figure 2, such flange being provided to support a rolling landside 21. Landside 21 of generally conical, somewhat saucer-like, configuration is mounted on flange 20 with the interior bottom portion of such landside being contiguous to such flange. A plurality of bolts 22 insertable through suitable transverse apertures provided respectively in landside 21 and flange 20 secure rolling landside 21 to hub 18.

A cover 23 of a resilient material, preferably a

suitable grade of rubber, is shaped to surround the exterior conical surface of rolling landside 21. Cover 23 is provided with an inturned peripheral edge 24 and an integral bead 25 is formed on inturned edge 24. Bead 25 is of somewhat smaller diameter than the edge of rolling landside 21 so that considerable force must be exerted to assemble such bead over the peripheral edge of landside 21. When in position however the bead 25 will maintain the cover in tension so that such cover will fit tightly on the exterior surface of landside 21. An integral bead 21a is preferably provided on the edge of rolling landside 21 which cooperates with bead 25 to further assist in securing the cover to landside 21.

In Figure 3 there is shown an enlarged fragmentary detail view of the portion of the furrow wheel illustrating a modified form of this invention. In this modification the exterior surface of furrow wheel 21 or that surface of the landside which abuts the furrow wall, is covered by a ply of rubber-like material 23, bonded to such surface by any of the well-known processes. Alternatively, the furrow wall engaging surface of landside 21 may be coated with a rubber-like material which is sprayed on. In any case, it is preferable for the layer or coating of rubber-like material to have a substantial thickness, thus not only will longer life be provided but the action of a thicker layer of a rubber coated surface resists sticky soils to a much greater extent.

In plowing with plow bottom 10 as shown in Figure 1, the share cuts the furrow slice 26 and the moldboard turns such slice over. Formation of the furrow slice leaves a furrow wall 27 against which the rolling landside comes in contact. As the rubber covered surface of the rolling landside contacts the furrow wall, the abrasive action of the soil will be directed against the rubber material. It is well known, however, that rubber is highly resistant to the erosive action of most abrasive materials and, accordingly, will stand up in a superior manner to that of steel. The inherent resiliency of the rubber faced rolling landside very effectively prevents the adherence of sticky soils to such facing. When the rolling landside is contacting the furrow wall during the operation of the plow, the rubber facing or coating on such furrow wall is constantly moving under stress from the compressive forces acting against such facing. As the rubber is very resilient, the rubber facing then moves slightly in several directions at once, whereby the sticky soils will in effect be shaken off.

With the modification of Figures 1 and 2, the rubber cover is readily removed when worn or for plowing in non-sticky, non-abrasive soil by forcing the bead 25 over the peripheral edge 21a of the rolling landside. A new cover may be as quickly assembled to the rolling landside by reversing the above procedure. In the modification of Figure 3, the old rubber material may be removed by scraping and a new coating applied in the manner utilized for applying the original coat. Thus the furrow wheel may be cheaply and quickly furnished with a rubber coating which will greatly increase the life of the rolling landside in addition to providing the advantageous features previously pointed out.

It will appear from the description above that there is here provided a cover or coating of a rubber-like material for a landside or furrow wheel which is highly resistant to abrasive soil, thereby greatly increasing the life of such land-

side. The inherent resiliency of the rubber faced landside prevents sticky soils from adhering to the surface of such cover hence the need of a scraper for the furrow wheel is eliminated.

With the detachable cover construction, the surface of the landside may be conveniently changed to best conform to the characteristics of the soil to be plowed.

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. In a plow having a beam, a saucer-like landside rotatably mounted on the beam, said landside having a substantially conical surface normally abutting the furrow wall and terminating in a smooth peripheral edge, a rubber-like resiliently deformable cover constructed and arranged to surround said conical surface, and a bead on the periphery of said cover engageable with the peripheral edge of said landside for detachably securing said cover to said landside.

2. In a plow having a dish shaped convexo-concave landside rotatably mounted on the plow, said landside having its external convex surface adapted for rolling engagement with the furrow wall, a resiliently extensible cover surrounding the external surface of said landside in snugly conforming engagement with the concave surface thereof, an internal integral peripheral bead on said cover, and a corresponding bead on the free peripheral edge of said landside, the bead on said cover having a substantially smaller periphery than said peripheral bead of said landside, said bead on said cover cooperating with said landside bead and contacting the concave internal surface of said landside to retain said cover on said external surface to present a furrow wall-engaging surface to which sticky soil is substantially non-adherent.

3. In a plow having a beam, a rolling landside mounted on said beam for rotation and having an outer generally frusto-conical peripheral surface for abutting a furrow wall, a resiliently deformable exterior cover formed of elastomeric material and adapted for snug peripheral engagement with said surface of said landside, and means for detachably securing said cover to said landside to provide a furrow wall-engaging surface to which sticky soils are non-adherent.

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