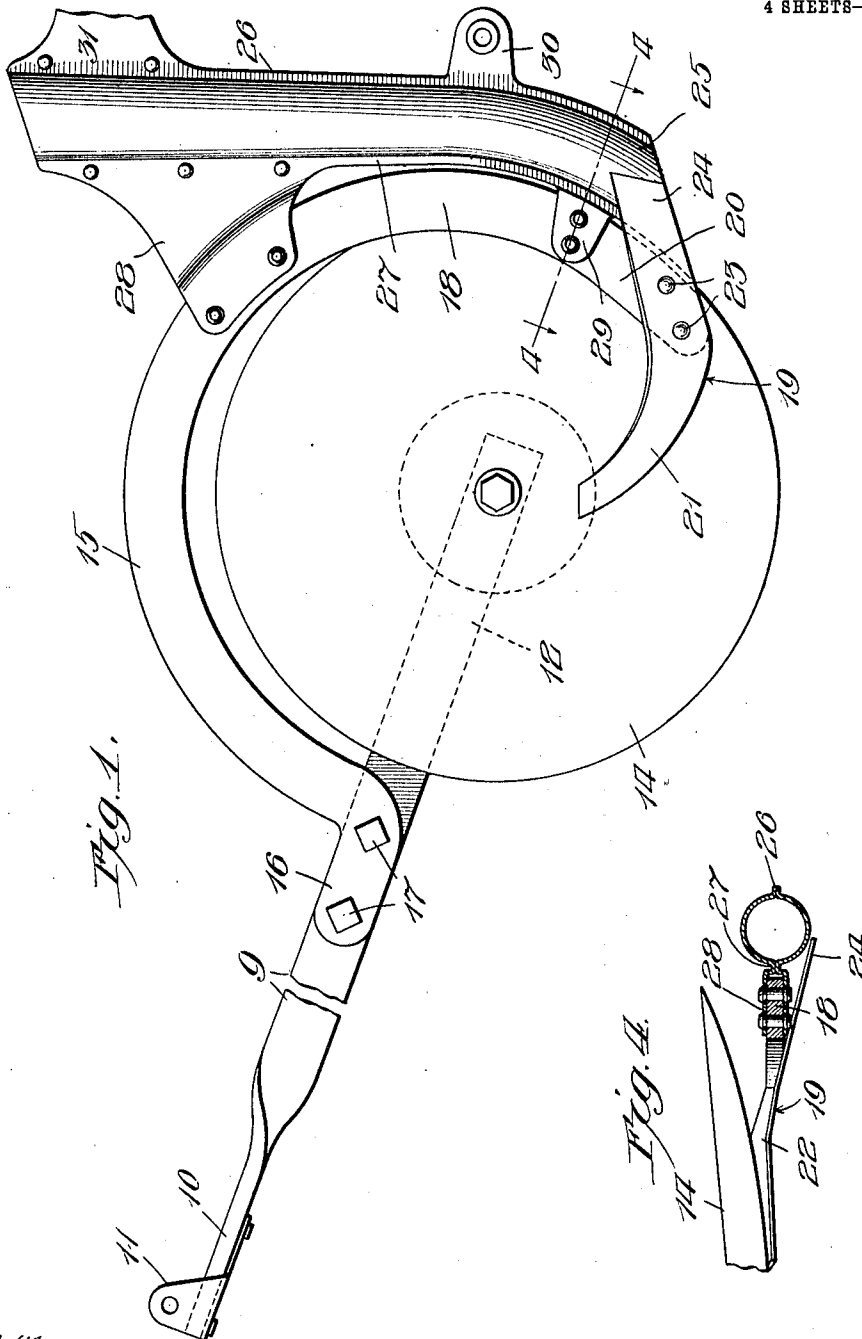


T. BRENNAN, JR.
 SCRAPER FOR FURROW OPENERS.
 APPLICATION FILED JULY 11, 1911.

1,022,352.

Patented Apr. 2, 1912.
 4 SHEETS—SHEET 1.



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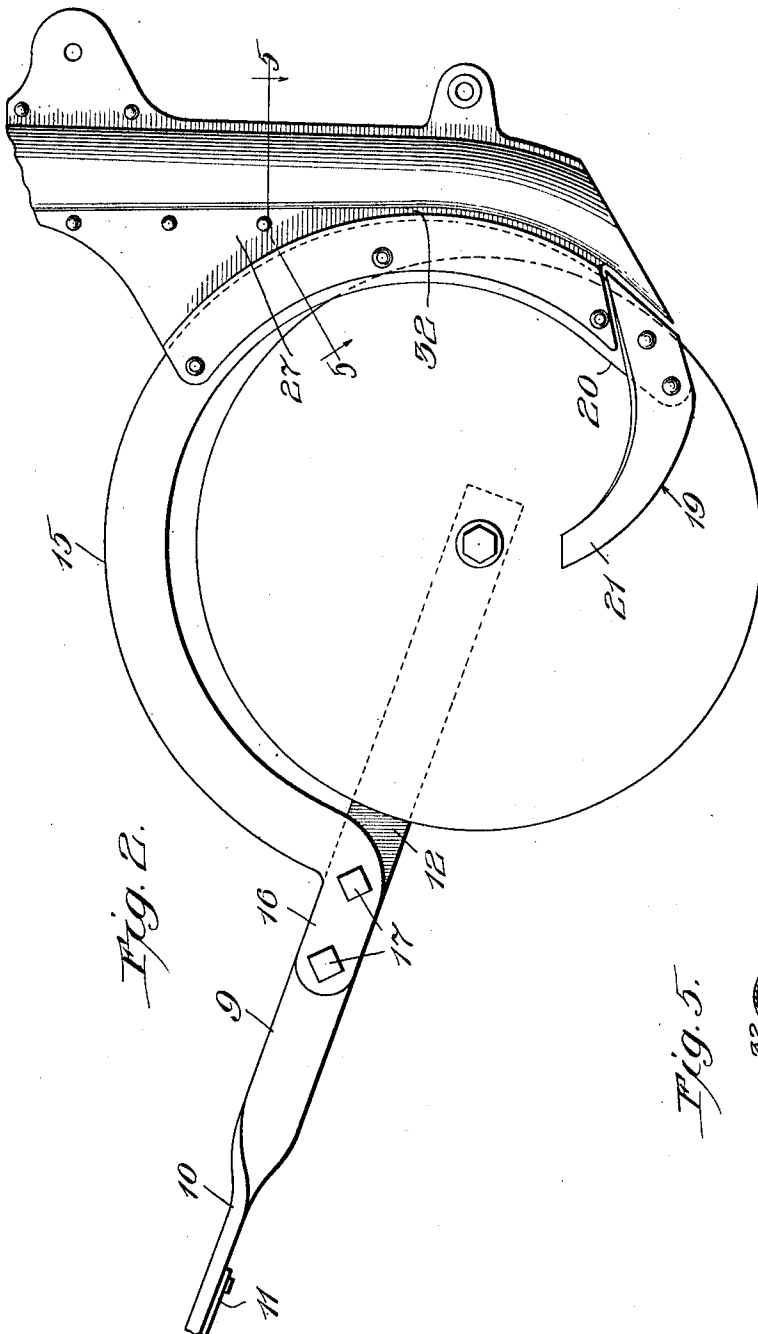


Fig. 2.

Fig. 5.



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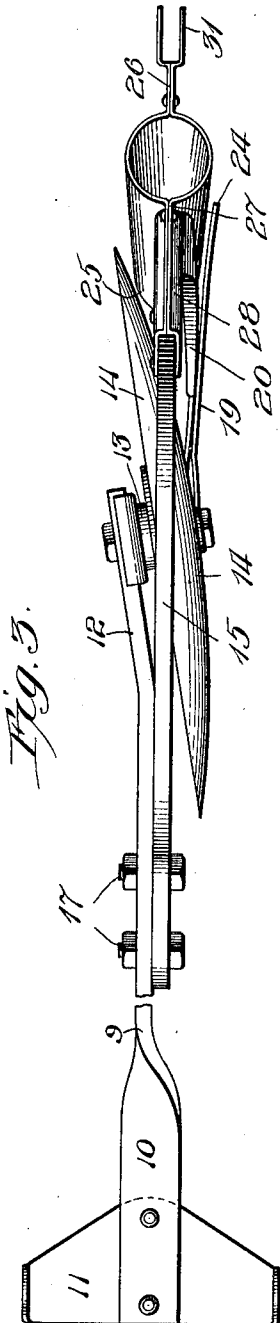


Fig. 5.

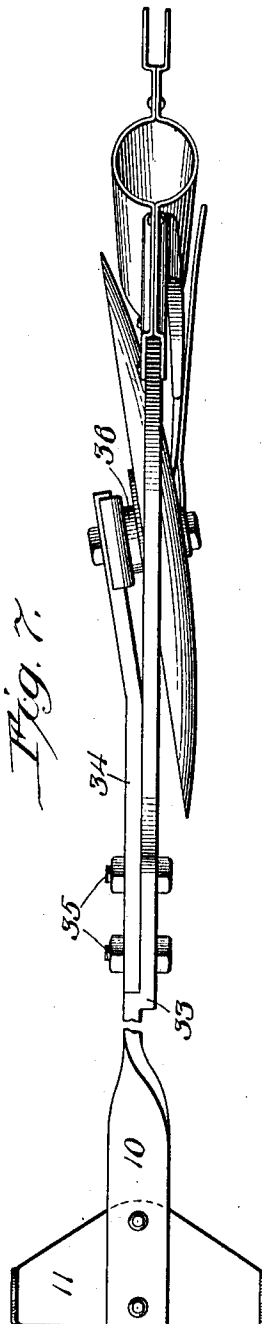


Fig. 7.

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4 SHEETS—SHEET 4.

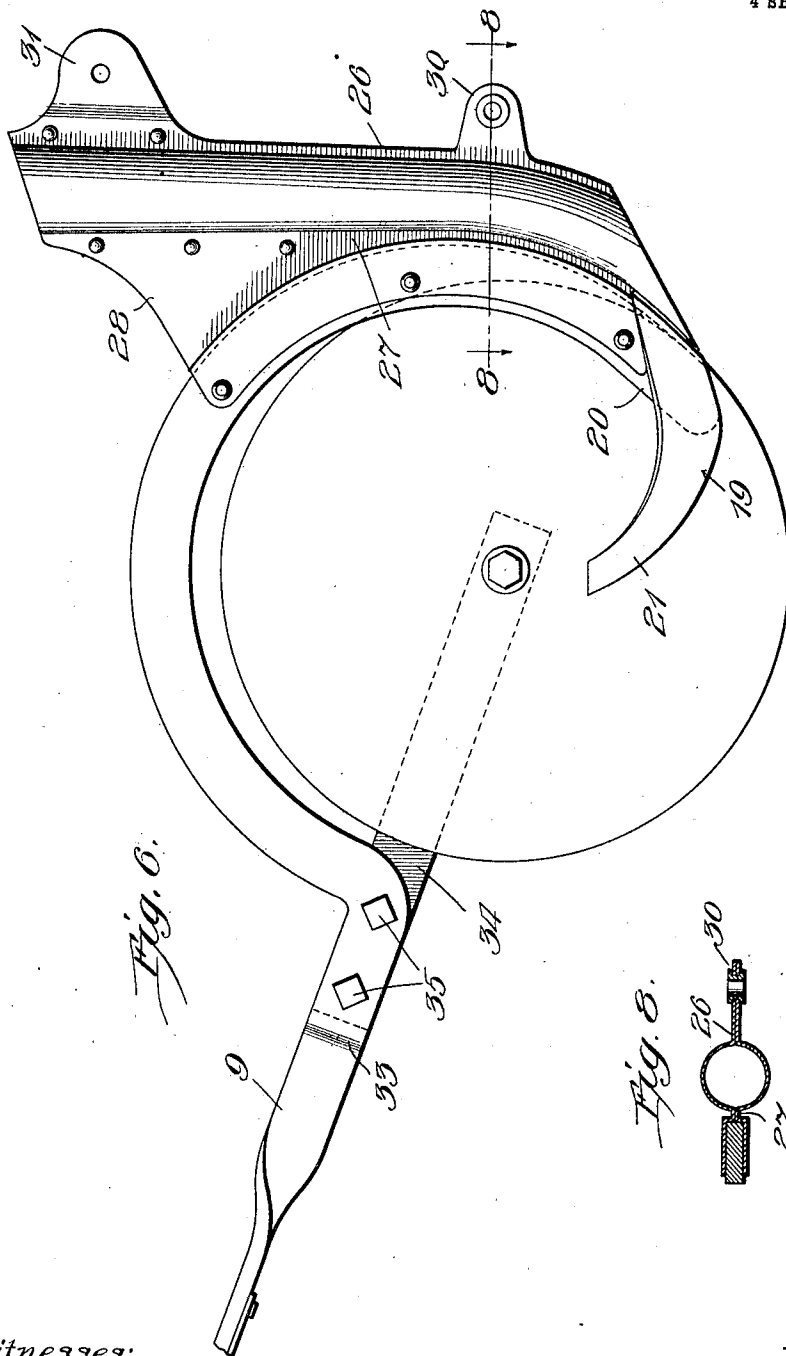


Fig. 6.

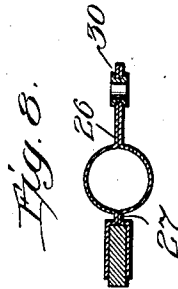


Fig. 8.

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UNITED STATES PATENT OFFICE.

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SCRAPER FOR FURROW-OPENERS.

1,022,352.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed July 11, 1911. Serial No. 637,919.

To all whom it may concern:

Be it known that I, THOMAS BRENNAN, JR., a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Scrapers for Furrow-Openers, of which the following is a specification.

This invention relates to an improved form of outside scraper for furrow openers of the disk type, in which the scraper is supported at a point near the toe of the boot.

I am familiar with a certain form of scraper which is attached directly to the toe of the boot so that the latter serves as a mounting or support therefor. This construction, however, has been found to possess a number of disadvantages, among which may be enumerated that the strain exerted on the scraper must be transmitted through the boot itself to the framework above, and that it is very difficult, if not impracticable, to obtain the desired resiliency in the scraper support when the boot constitutes such support.

Objects of my invention, in addition to those enumerated, are: to provide a scraper which will efficiently clear the outside surface of the disk; to provide a suitable mounting or support for the scraper which shall have such resiliency that the scraper will be held in firm engagement with the disk at all times, notwithstanding the fact that the latter is rotating and changes its position from time to time; to provide a mounting for the scraper which may be brought within an extremely narrow space, so that the consecutive furrow openers may be placed close together without danger of clogging or jamming mud, etc., between them; to provide a support for the scraper which may, at the same time, serve as a support for the boot, and to so position the parts with respect to each other that the line of forces from the drawbar to the boot and to the scraper will be practically straight from front to rear and will pass practically through the disk mounting.

Other objects and uses will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings,—Figure 1 shows a side view of one form of furrow opener embody-

ing my invention, looking toward the outside of the disk; Fig. 2 shows a side view similar to Fig. 1, of a modified construction of furrow opener; Fig. 3 shows a plan view of the furrow opener of Fig. 1; Fig. 4 shows a section taken on the line 4—4 of Fig. 1, looking in the direction of the arrows; Fig. 5 shows a section taken on the line 5—5 of Fig. 2, looking in the direction of the arrows; Fig. 6 shows a side view similar to Fig. 1, of a second modification; Fig. 7 is a plan view of the modified construction shown in Fig. 6; and Fig. 8 shows a section taken on the line 8—8 of Fig. 6, looking in the direction of the arrows.

In the embodiment of my invention I provide an arched arm which extends from the dragbar over the disk to the rear portion thereof, which arm may be either a continuation of the dragbar itself or may be attached to the same. The scraper is carried by the rear end of this arm, which, by reason of its length and shape, possesses the necessary resiliency or elasticity for maintaining the scraper against the disk with the proper pressure at all times. At times, for the sake of convenience, the boot through which the grain is delivered may also be carried by the arm, although, as will presently appear, the scraper itself is at all times entirely independent of the boot, which latter might be completely removed without in any way affecting the scraper as such.

Referring now to the drawings, I will first describe the construction shown in Figs. 1, 3 and 4. In this case the dragbar 9 has its forward end 10 twisted over so that it lies in a substantially horizontal plane, a yoke 11 being attached to this forward end. The rear end 12 of the dragbar is bent out at an angle and carries any suitable form of mounting 13 for the disk 14. An arched arm 15 has its lower end 16 rigidly secured to the dragbar, as by means of bolts 17, the arm curving upward and over the edge of the disk so that its rear portion 18 lies in front of the same. At no point, however, does the arm touch the disk. The scraper 19 is carried by the lower end 20 of the arm. This scraper is preferably in the form of a plate, having its forward end 21 curved upwardly and bent at a suitable angle at the point 22, as is shown in Fig. 4. The scraper is securely attached to the lower end of the arm, as by means of rivets 23, and its rear

end 24 extends outwardly a sufficient distance to prevent the entrance of dirt into the lower end 25 of the boot.

The boot itself is of pressed metal construction, being formed from two sheets of metal joined together in their rear portions by flanges 26 and in their forward portions by flanges 27. The latter flanges are provided with pairs of ears 28 and 29, each pair embracing the arm and being suitably secured to the same. A drag chain eye 30 and a pressure device lug 31 may be provided by properly forming the flanges 26.

By reference to Fig. 4 it will be clearly understood that the rear end 24 of the scraper does not come into engagement with the boot at all, and that the scraper and boot are entirely independent of each other. The scraper is carried directly by the arm, which in turn provides the resiliency necessary for maintaining the scraper at all times in proper engagement with the disk.

I will now describe the construction shown in Figs. 2 and 5. In this case the dragbar extends back from the yoke to the disk mounting and the arched arm is attached to the dragbar, as in the previous construction. However, in this case the flanges 27 on the front of the boot are extended forward at all points a sufficient amount to embrace the arm between them, and the scraper is of slightly different shape. By forming the flanges in this manner there is no danger of dirt and twigs, etc., catching in between the arm and the boot, for this space is completely closed by the flanges. In this construction, also, the scraper is not provided with a rearward extension 24, as in the previous construction. I wish distinctly to call attention, however, to the fact that the flanges 27 are brought together at the point 32, so that there is no possibility of grain which is passing down through the boot coming into contact with the arm. In other words, the boot itself is entirely distinct from the arm in every way.

In Figs. 6, 7 and 8 I have shown a second modification, in which the arm is really an extension of the dragbar, the disk mounting being carried by a short bar which is attached to the dragbar. In this case the dragbar 9 is provided with an offset at the point 33 and it then continues over as the arm, occupying a position substantially the same as that of the arm in each of the previous constructions. The bar 34 is attached to the dragbar in the offset of the latter by means of bolts 35 and carries the disk mounting 36 at its rear end. The form of boot and scraper in this present construction is similar to that shown in Figs. 2 and 5, practically the only difference consisting in the fact that the arm is really an extension of the dragbar.

From a careful examination of each of

the above described constructions it will be seen that the mounting for the scraper is entirely independent of the boot. The boot might be removed without affecting the scraper in any way; the latter would still occupy its proper position on the disk and would be properly maintained against the same.

Although I have herein shown and described only three forms of mounting for the scraper, still I contemplate within the scope of my invention any form of construction in which the scraper is carried by a member independent of the boot.

I claim:

1. The combination with the draw bar and disk of a disk implement, of an arched member of resilient material having its forward end rigid with the draw bar and extending up and over the disk from one side to the other of the same, and a scraper secured to the lower end of the arched member, substantially as described.
2. The combination with the draw bar and disk of a disk implement, of an arched member of resilient material having its forward end rigid with the draw bar and extending up and over the disk from one side to the other of the same, a boot secured to the rear end of the arched member, and a scraper secured to the lower end of the arched member adjacent to the toe of the boot and independent thereof, substantially as described.
3. The combination with the draw bar and disk of a disk implement, of an arched member of resilient material having its forward end rigid with the draw bar and its arched portion extending up and over the disk, and a scraper secured to the lower end of the member, whereby the scraper is held firmly and evenly in engagement with the disk, by reason of the resiliency of the arched member, substantially as described.
4. The combination with the draw bar and disk of a disk implement, of an arched member of resilient material having its forward end rigid with the draw bar and its arched portion extending up and over the disk from one side of the same to the other, and a scraper secured to the lower end of the member, whereby the scraper is held firmly and evenly in engagement with the disk, by reason of the resiliency of the arched member, substantially as described.
5. The combination with the draw bar and disk of a disk implement, of an arched member of resilient material having its forward end rigid with the draw bar and its arched portion extending up and over the disk from one side of the same to the other, a grain boot secured to the rear end of the arched member, and a scraper secured to the lower end of the member independently of the boot, whereby the scraper is held firmly and evenly in engagement with the

disk, by reason of the resiliency of the arched member, substantially as described.

6. In a disk implement, the combination of an arched member extending up and over the disk from its forward edge to its rear edge and having its rear portion downwardly depending, a scraper secured to the lower end of said downwardly depending portion, and a boot carried by said downwardly depending portion independently of the scraper, substantially as described.

7. In a disk implement, the combination of an arched member extending up and over the disk from its forward edge to its rear edge, and having the rear portion of such member downwardly depending, a scraper carried by the lower end of said downwardly depending portion, and extending forwardly and upwardly, a boot carried by said downwardly depending portion independent of the scraper, a disk, and a suitable connection from the disk to the forward portion of said member, substantially as described.

8. In a disk implement, the combination of a member extending over the upper portion of the disk and having its forward portion adjacent the forward edge of the disk and having its rear portion downwardly depending adjacent the rear edge of the disk, a forwardly and upwardly extending scraper secured to the lower end of the said downwardly depending portion,

and a boot carried by said downwardly depending portion independently of the scraper, substantially as described.

9. In a disk implement, the combination of a member having its forward portion adapted to constitute a drawbar connection, and extending over the upper edge of the disk from one side of the same to the other, and having its rear portion downwardly depending adjacent the rear edge of the disk, a forwardly and upwardly extending scraper secured to the lower end of said depending portion, and a boot carried by said downwardly depending portion independent of the scraper, substantially as described.

10. In a disk implement, the combination of an arched bar having its forward portion lying adjacent the forward edge of the disk, and rigid with the drawbar, and arching up and over the disk from one side of the same to the other, and having its rear portion downwardly depending adjacent the rear edge of the disk, and its lower end forwardly projecting, a forwardly and upwardly extending scraper secured to said lower end, and a boot carried by the downwardly depending portion independently of the scraper, substantially as described.

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