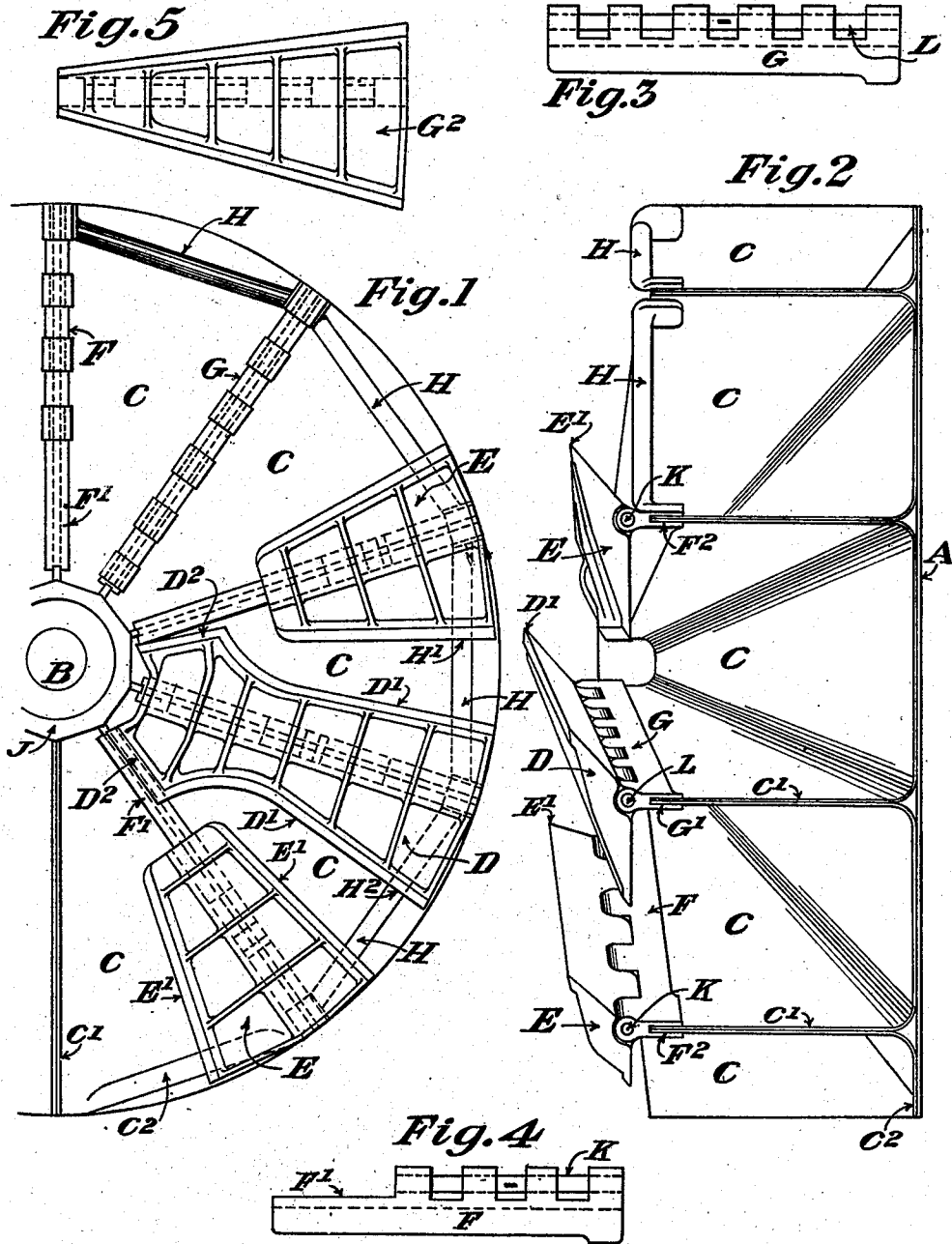


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 ROTARY SNOW PLOW.
 APPLICATION FILED JULY 11, 1908.

899,606.

Patented Sept. 29, 1908.



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JOHN FREMONT MURPHY, OF PATERSON, NEW JERSEY.

ROTARY SNOW-PLOW.

No. 899,606.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed July 11, 1908. Serial No. 443,109.

To all whom it may concern:

Be it known that I, JOHN FREMONT MURPHY, a citizen of the United States, and a resident of Paterson, in the county of Passaic and State of New Jersey, have made and invented certain new and useful Improvements in Rotary Snow-Plows, of which the following is a specification.

My invention relates to an improvement in rotary snow plows, the object of the same being to provide a device of this character which will be simple and economical in construction, and durable and efficient in use.

A further object is to so construct the scoops that they may be completed in construction and fitted up before applying to the wheel, and so arranged that the joint between the scoops may be made water-tight without the use of copper calking strips which, in the case of the plows as now ordinarily constructed, are a source of considerable expense both as to material and labor in the first instance, and in the way of repair, as owing to the vibration of the wheel when in use, they become displaced and require constant attention.

A further object of my invention is to so construct and arrange the knives, and hinges by which they are supported, that they may be completely finished by machine, thus eliminating a large amount of hand work now necessary in connection with the existing type of rotary plow.

A further object of my invention is to economize in the cost of construction by eliminating the heavy T-iron arms and brackets required to brace the wheel and support the scoops, my invention contemplating the use of brace rods which not only brace the ends of the scoops, but also furnish a support for the knives when in operation.

A further object of my invention is to so construct the knives that they will be interchangeable, and thereby render it possible to easily and readily substitute a new for a broken one, and this without additional fitting or machine work; further, to so construct and arrange the knives that sufficient opening is left between them near the center of the wheel to there properly and effectively dispose of the snow, and thus materially increase the capacity of the plow.

With these and other ends in view, the invention consists in certain novel features of construction and combinations of parts, as

will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a front view of one-half of the plow wheel with certain parts removed in order to clearly show the arrangement of the scoops, hinges, braces and knives. Fig. 2 is a side view thereof with certain parts omitted. Fig. 3 is a detached view of the hinge employed in connection with a long knife. Fig. 4 is a similar view of a hinge employed in connection with a short knife. Fig. 5 is a view of a modified form of knife for use when the plow is intended to remove light snow of moderate depth.

Referring to the drawings, A represents the back plate of the plow wheel secured to the driving shaft B, the latter also having secured thereto the center casting J. To the rear or back plate A are bolted or riveted the scoops C, preferably ten in number, each of which is made of a single plate of metal having its sides radial to the center of the wheel, and bent at right angles to the plate A, the bottom or back of the scoop being flanged as shown at C² for attachment to the back plate, and inclined toward the front of the wheel at the center. Over the edges of the adjoining sides of these scoops C are fitted the alternating hinges F and G, the former being slotted for this purpose, as illustrated at F², and having attached thereto the short knives E, the hinge G being slotted as illustrated at G¹ and having mounted thereon the longer knives D, the sides of these scoops being braced and strengthened by means of the bars or rods H.

On each of the hinges F is mounted a knife E, held in proper position by means of the pintle K and provided with cutting edges E¹, this knife being somewhat shorter than the adjacent knife D mounted upon the hinge G and held in place by means of the pintle L, the long and short knives alternating, as clearly illustrated in Fig. 1. The longer knife D is provided with the cutting edges D¹, D², and at its inner end is widened or broadened as illustrated at D² for the purpose of providing adequate cutting capacity near the center of the wheel, and by alternating the longer and shorter knives, as described, sufficient space is left between them for the admission of snow at the center of the plow wheel, thereby avoiding the choking or clogging of the device, an objection urged

against rotary plows of ordinary construction. Should, however, the snow to be removed be light and of moderate depth, and wherein there is no danger of the clogging of the plow at the center thereof, the knives D and E may be substituted by the form of knife illustrated at G² in Fig. 5, that is, by knives all having the same dimensions and extending from the circumference of the plate D to within a short distance of the casting J.

From the foregoing it will be understood that when in use, one edge of each of the knives will perform its proper function in cutting the snow, the inclined positions of the knives directing the snow into the scoops C and out of the open sides thereof, the cutting side of the shorter knife E resting against the brace H at H¹, and the cutting side of the longer knife D resting against the brace H at the point H², as shown in Fig. 1, the inner widened ends of the longer knives D resting against the inner ends of the hinges F, as illustrated at F¹ in Fig. 1. When the plow is revolved in the opposite direction, these knives swing on their respective hinges until the opposite sides or edges thereof bear against the braces H, the latter performing the twofold function of bracing the sides of the scoops, and supporting the cutting edges or sides of their respective knives. It will also be understood that by slotting the hinges F and G, as above described, to embrace the edges of the contacting sides of the scoops, these joints are made water-tight, and this without the use of calking strips heretofore employed to effect the same result.

While I have illustrated my improved plow as comprising ten knives, it will of course be understood that the number of the latter may be increased or decreased without departing from the spirit of my invention.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a rotary snow plow wheel, the combination with a back plate, of scoops secured thereto, each of said scoops being formed with radial sides bent at right angles to said back plate, the bottom of said scoop being flanged for attachment to the back plate and inclined from the circumference toward the center of the wheel, substantially as described.

2. In a rotary snow plow wheel, the combination with a back plate, of scoops secured thereto, each of said scoops being made of a single plate having its sides radial with the center of the wheel and bent at right angles to said back plate, the bottom of said scoop

being inclined from the circumference toward the center of the wheel, and its outer end flanged for attachment to said back plate, substantially as described.

3. In a rotary snow plow wheel, the combination with a back plate, of scoops secured thereto, the sides of each of which are radial to the center of the wheel and bent at right angles to the back plate, hinges embracing the edges of the contacting sides of said scoops, and knives secured to said hinges, substantially as described.

4. In a rotary snow plow wheel, the combination with a back plate, of scoops secured thereto, hinges secured to said scoops and alternating long and short knives secured to said hinges, substantially as described.

5. In a rotary snow plow wheel, the combination with a back plate, of radial scoops secured to said plate, the sides of said scoops being bent at right angles to said plate, the hinges fitting over the edges of the contacting sides of said scoops to render the joint water-tight, knives secured to said hinges, the alternating knives being longer than the intermediate knives, substantially as described.

6. In a rotary snow plow wheel, the combination with a back plate, of scoops secured to said plate having their sides bent up at right angles thereto, rods for bracing the sides of said scoops, knives mounted on hinges secured to said scoops, said knives resting on said braces when the plow is in operation, substantially as described.

7. In a rotary snow plow wheel, the combination with a back plate, of scoops secured thereto and knives hinged in front of said scoops, the alternating knives being lengthened and broadened at their inner ends, substantially as described.

8. In a rotary snow plow wheel, the combination with a back plate, of radial scoops secured thereto, rods secured to and bracing the sides of said scoops, hinges secured in front of said scoops and knives secured to said hinges, the alternating long and short knives mounted on said hinges, the shorter of said knives resting on said braces and the longer of said knives resting on said braces and on the hinges of said shorter knives when the plow is in operation, substantially as described.

Signed at New York, borough of Manhattan, in the county of New York, and State of New York, this 10th day of July, A. D. 1908.

JOHN FREMONT MURPHY.

Witnesses:

M. VAN NORTWICK,
JOHN COOK.