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MANUALLY OPERATED SNOW REMOVAL TOOL

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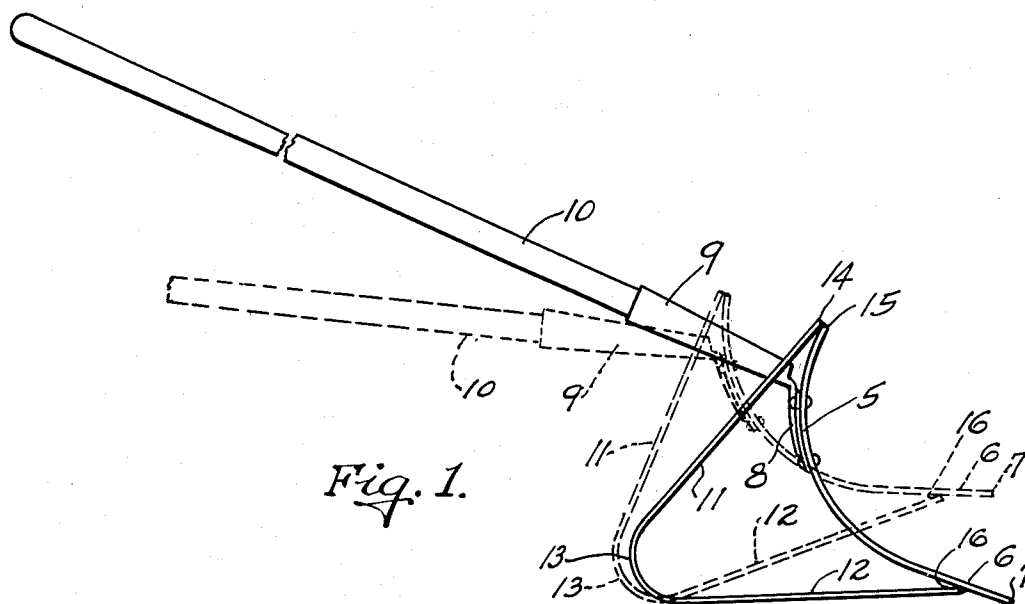


Fig. 1.

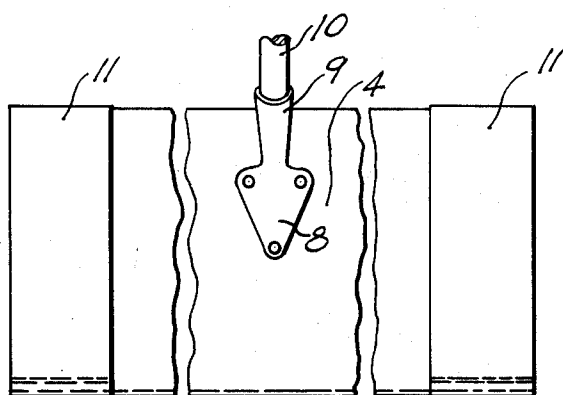


Fig. 2.

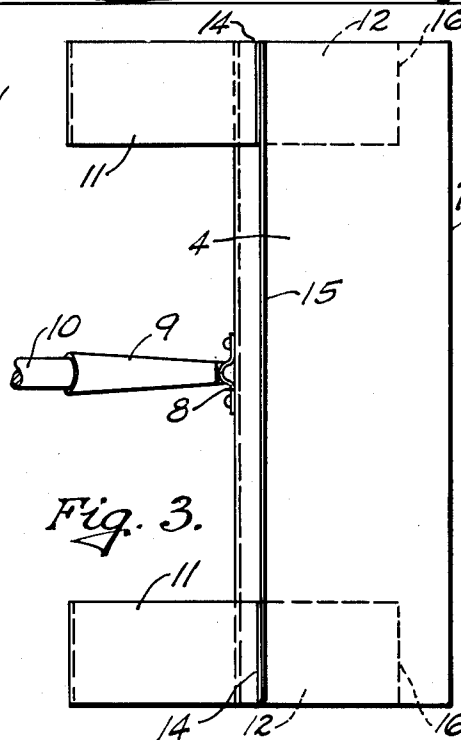


Fig. 3.

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MANUALLY OPERATED SNOW REMOVAL TOOL

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5 Claims. (Cl. 37—53)

My invention relates to snow removal apparatus, and more particularly to a tool for removing snow from streets, roadways, and other paved, unpaved and graveled surfaces, that is adapted to be manually operated.

My snow removal tool comprises a body portion, which serves as a means for scraping snow or similar material from a surface and scooping it up so that it can be dumped at a convenient place, said body portion being so mounted that it is adapted to be tilted to a position with the scraping edge thereof out of engagement with the surface to be cleaned, so that it can be slid along over that surface and any other surfaces encountered to the dumping point and will retain the snow and similar accumulated material on the body portion.

To accomplish this purpose I have provided a body portion for my improved tool that is generally concavo-convex, being made of sheet metal so that the major portion of the body portion thereof is a part of a cylinder, substantially a quadrant thereof, but which has a plane portion that extends forwardly from said concavo-convex portion to provide a scraping edge at the forward end of said body portion.

It is a further purpose of my invention to mount said body portion in such a manner that it is supported on the surface to be cleaned either in the position with the scraping edge in contact with such a surface or with the scraping edge raised from said surface, said means comprising combination skids and rockers that have a pair of legs that extend at an oblique angle to each other and are connected at their ends with the body portion and which has a curved portion connecting the same, about which the tool can be rocked to move the body portion from a scraping position to a carrying or transporting position.

It is a further purpose of my invention to provide a tool of the above mentioned character that has a body portion and combination skids and rockers that are so related to the body portion as to stiffen and strengthen said rockers and body portion due to the fact that a substantially triangular structure results from the body portion and the connected combination skids and rockers.

It is a further purpose of my invention to provide a handle on said tool that is arranged in such a manner as to be in a convenient position for moving the tool when it is in snow removing position and also in a convenient position for moving the tool when it is in snow carrying position, said handle being connected with the body portion near the upper end thereof and extending at an oblique angle to the surface on which the body portion is supported both when the body portion is in a scraping position and a carrying position.

Other objects and advantages of my invention will appear as the description of the drawings proceeds. I desire to have it understood, however, that I do not intend to limit myself to the particular details shown or described, except as defined in the claims.

In the drawings:

Fig. 1 is a view in side elevation of my improved snow removing tool, a portion of the handle being broken away,

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the snow transporting position of said tool being shown in dotted lines.

Fig. 2 is a view in rear elevation of my improved tool, partly broken away, and

Fig. 3 is a top plan view thereof, the handle being partly broken away.

Referring in detail to the drawings, my improved snow removing tool comprises a body portion 4, which has a concavo-convex portion 5 that is curved in only one direction so that it is partly cylindrical and is to the extent of one-quarter of a cylinder, as shown in the drawings. Said body portion further has a forward end portion 6 that is plane or flat and which extends from the concavo-convex portion terminating in a forward straight edge 7 that constitutes the scraping edge of the snow removing tool. Secured to the concavo-convex portion of the body portion 4 is a flange portion 8 of a ferrule 9, in which the elongated handle 10 is secured in any suitable manner. Said ferrule 9 extends at such an angle to the body portion that it will extend at an oblique angle to the supporting surface of the tool both when in the full line position and the dotted line position thereof shown in Fig. 1, and the handle 10 will also extend at an oblique angle to said supporting surface both in said full line and dotted line positions.

A pair of combination rockers and skids is provided on the body portion for supporting the same in the full and dotted line positions shown in Fig. 1. Said combination rockers and skids comprise wide sheet metal members that are broad and flat, each having a pair of legs 11 and 12 which extend at an acute angle to each other. Said legs 11 and 12 are connected together by means of a curved portion 13 integral therewith. The top end 14 of the leg 11 is secured to the body portion 4 at the top edge 15 thereof, and the forward end 16 of the leg 12 is secured to the plane portion 6 of the body portion 4 adjacent but spaced rearwardly from the forward end 7 thereof, said ends of said legs being, preferably, secured to the body portion by welding.

Accordingly the leg 12 will extend upwardly at an oblique angle from the curved portion 13 to the end 16 thereof when in the full line position shown in Fig. 1, and the tool will be supported on the surface over which it is pushed at substantially the junction of the legs 12 and the curved portions 13, but when in the dotted line position the tool will be supported on the curved portions 13 adjacent the legs 12. It will also be noted that the legs 11 and 12 and the body portion 4 form a substantially triangular formation, thus mutually bracing or reinforcing each other and providing a very strong rugged structure, which is necessary for an implement of this character. It will be noted that the two combination rockers and skids are located at opposite sides of the body portion 4, and thus provide a stable support for said body portion both in its scraping position and its carrying or transporting position.

In the use of the tool the same is pushed along over the surface that is to be cleaned of snow in the full line position thereof, as shown in Fig. 1, with the edge 7 in scraping engagement with the surface. This will cause the snow and similar material to be forced upwardly on the inclined plane surface 6 and onto the concavely curved basket-like portion of the body portion. This can be continued until so much snow has accumulated on the body portion that it is completely filled. After this has been done the tool is tilted to the dotted line position shown in Fig. 1 by means of the handle and slid along over either cleaned or snow covered surfaces, as the case may be, to a point where the snow can be dumped from the body portion and be out of the way. This can be readily accomplished by tilting the body portion forwardly by means of the handle 10 on its forward edge 7 so that the material accumulated thereon will slide off the body por-

tion. Thus absolutely no lifting of the snow, as in the case of a shovel, is necessary, thus greatly lightening the work involved in cleaning snow off walks, pavements and other surfaces. By providing the rounded portion 13 connecting the legs 11 and 12, the sliding over uneven surfaces of the loaded snow removing tool will take place without any difficulty. By providing a pair of wide runners or skids, the scraping or snow removing action of the tool is also greatly lightened and simplified, as all that is necessary is to push forwardly against the body portion with the handle 10 and the tool will move along easily on the surface to be cleaned, only the portions 12 of the skids adjacent the curved portions 13 and the scraping edge 7 of the body portion 4 being in contact with the surface being cleaned while this is taking place.

What I claim is:

1. A removal tool having substantially cylindrically curved open ended body portion having a straight transverse forward scraping edge extending parallel to the axis of curvature of said body portion, said body portion being concavely curved on its forward side throughout the major portion thereof about said axis to the top edge thereof, and having substantially parallel side edges of approximately the same length, combination rockers and skids at the opposite open ends of said body portion, each comprising a rocker portion curved about an axis parallel to the axis of curvature of said body portion, an upper straight leg extending forwardly and upwardly from the upper end of said curved rocker portion to said body portion, said upper leg extending at an oblique angle to and being rigidly secured at its forward end to said body portion adjacent said top edge thereof, and a lower straight leg of substantially the same length as said upper leg extending forwardly from the lower end of said curved portion and being rigidly secured at its forward end to said body portion adjacent said scraping edge, said straight legs extending at an acute angle to each other and said entire body portion being located in forwardly spaced relation to said curved rocker portions, and a handle mounted in fixed position on said body portion near said top edge at a point spaced a substantial distance forwardly of said curved rocker portions and extending at an oblique angle to said lower legs.

2. A removal tool having a substantially cylindrically curved open ended body portion having a straight transverse forward scraping edge extending parallel to the axis of curvature of said body portion, said body portion being concavely curved on its forward side throughout the major portion thereof about said axis to the top edge thereof, and having substantially parallel side edges, combination rockers and skids at the opposite open ends of said body portion, each comprising a rocker portion curved about an axis parallel to the axis of curvature of said body portion, an upper straight leg extending forwardly and upwardly from the upper end of said curved rocker portion to said body portion, said upper leg extending at an oblique angle to and being rigidly secured at its forward end to said body portion adjacent said top edge thereof, and a lower straight leg of substantially the same length as said upper leg extending forwardly from the lower end of said curved portion and being rigidly secured at its forward end to said body portion adjacent said scraping edge, said straight legs extending at an acute angle to each other and said entire body portion being located in widely forwardly spaced relation to said curved rocker portions, and a handle mounted in fixed position on said body portion near said top edge at a point spaced a substantial distance forwardly of said curved rocker portions and extending at an oblique angle to said lower legs, the upper extremity of said body portion curving forwardly in the scraping position of said tool.

3. A removal tool having a substantially cylindrically curved open ended body portion having a straight transverse forward scraping edge extending parallel to the axis of curvature of said body portion, said body portion being

concavely curved on its forward side throughout the major portion thereof about said axis to the top edge thereof, and having substantially parallel side edges, combination rockers and skids at the opposite open ends of said body portion, each comprising a wide flat faced rocker portion curved about an axis parallel to the axis of curvature of said body portion, an upper straight leg extending forwardly from the upper end of said curved rocker portion to said body portion, and a lower straight, wide, flat faced leg of substantially the same length as said upper leg extending forwardly from the lower end of said curved portion to said rocker portion, said lower legs being rigidly secured at the forward ends thereof to said body portion adjacent said scraping edge and said upper legs being rigidly secured to said body portion adjacent the top edge thereof and extending obliquely rearwardly and downwardly therefrom to locate the entire body portion in forwardly spaced relation to said rocker portions, and a handle mounted in fixed position on said body portion near said top edge at a point spaced a substantial distance forwardly of said curved rocker portions and extending at an oblique angle to said lower legs.

4. A removal tool having a substantially cylindrically curved open ended body portion having a straight transverse forward scraping edge extending parallel to the axis of curvature of said body portion, said body portion being concavely curved on its forward side throughout the major portion thereof about said axis to the top edge thereof, and having substantially parallel side edges, combination rockers and skids at the opposite open ends of said body portion, each comprising an upper and a lower leg, each of said legs being wide, flat faced, straight and of a length approximating the distance between said forward and top edges of said body portion and extending at an acute angle to each other, and a wide faced rocker portion curved about an axis parallel to the axis of curvature of said body portion connecting said upper and lower legs, said lower legs being rigidly secured at the forward ends thereof to said body portion adjacent said scraping edge and said upper legs being rigidly secured to said body portion adjacent the top edge thereof and extending obliquely rearwardly and downwardly therefrom to the upper end of said rocker portion to locate the entire body portion in widely forwardly spaced relation to said rocker portions, and a handle mounted in fixed position on said body portion near said top edge midway between said side edges at a point spaced a substantial distance forwardly of said curved rocker portions and extending at an oblique angle to said lower legs.

5. A removal tool having a substantially cylindrically curved open ended body portion having a straight transverse forward scraping edge extending parallel to the axis of curvature of said body portion, said body portion being concavely curved on its forward side throughout the major portion thereof about said axis, and having substantially parallel side edges, combination rockers and skids at the opposite open ends of said body portion, each comprising an upper and a lower leg, each of said legs being straight and of a length approximating the distance between said forward and top edges of said body portion and extending at an acute angle to each other, and a rocker portion curved about an axis parallel to the axis of curvature of said body portion connecting said upper and lower legs, said lower legs being rigidly secured at the forward ends thereof to said body portion adjacent said scraping edge and said upper legs being rigidly secured to said body portion adjacent the top edge thereof and extending obliquely rearwardly and downwardly therefrom to locate the entire body portion in forwardly spaced relation to said rocker portions, said combination rockers and skids having wide flat ground engaging faces, said body portion and combination rockers and skids forming a substantially equilateral triangular structure at each end of said body portion, and a handle mounted in fixed posi-

tion on said body portion near said top edge and extending at an oblique angle to said lower legs.

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