HAND OPERATED SNOW SHOVEL AND ICE CHOPPER FOR CLEANING PAVEMENTS

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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My invention relates to manually operated implements designed especially for emergency use by householders in removing snow and sheet ice deposits and accumulations from pavements and walks in the vicinity of or surrounding the household.

The invention resides in an implement of simple construction, but yet in one possessing certain features or elements which combine to provide a more effective performance of the work for which it has been designed. The blade of the implement is produced from a metal sheet, the functioning lower edge of which is provided with vertically extending corrugations to prevent distortion from its original plane while in use, and at the same time contribute an increased efficiency, as will hereinafter be pointed out. The handle of the implement is attached to the blade in a predetermined manner, so that the thrust of the cutting edge when used in chopping an ice coating upon the pavement, is in a vertical plane directly in line with the plane of the axis of the handle.

Other features of construction and operation embodied in and pertaining to the invention will later be described in detail, and the novelty residing in the whole will be pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective view showing the front of an implement embodying my invention in its simplest form.

Fig. 2 is an enlarged view in elevation, looking from the rear of Fig. 1.

Fig. 3 is a transverse, vertical sectional view through the blade of the implement, in the plane of the handle; and

Fig. 4 is a perspective view of a modified form of the device, in which certain functions in operation are enlarged.

In the drawings, the letter A indicates the blade of my improved implement, and the letter B the handle thereof.

The blade A is produced from a flat sheet of metal of suitable gauge, such metal sheet preferably being of quadrangular outline, made uniform in its angularity as a factor in economical production.

The plane of the metal sheet is not disturbed, other than that the lower portion of the blade A is corrugated, as at 10, on parallel vertical lines, and the upper portion of the blade is turned bodily to one side from the general plane of the blade, so as to produce a forwardly curved portion constituting a shield or deflector 11.

Also, at or near its middle, the sheet constituting the blade A is displaced so as to provide upon one side an embossment 12, which with a complementary embossment 13, formed in a small plate 14, constitutes a socket 15, for receiving and holding the lower end of the handle B. The plate 14 may be attached to the blade A, with the channels of the embossments in register, by riveting, spot-welding, or other means. The embossments 12 and 13, are of such accurate formation and location, that the exposed cutting edge 16 of the implement, extending from one side edge of the blade to the other, will be in a general plane directly in line with the axis of the handle of the same. It is desirable that the corrugations 10 extend somewhat above the lower end of the socket 15, to reinforce the blade, and avoid the formation of a weak line across the blade.

The lower cutting edge 16 of the blade is sharpened at an angle, as at 17, in Fig. 3, and is inclined from the rear to the front with relation to the general plane of the blade. The sharpening is effected in a plane, with the result that the lower cutting edge 16 is serrated, as will be clear from the showing in Fig. 2. The serrated edge 16 may be serpentine, or saw-tooth, as desired.

When used as a snow shovel, the angular edge 17, lies parallel to the surface of the pavement, and maintains close contact therewith. The curved deflector 11, will prevent the accumulating snow from rising over the upper portion of the blade, and falling behind the same.

When used as an ice shovel, in removing a coating of ice from the pavement, the parallelism of the angular edge of the implement with relation to the surface of the pavement, is the same as before. If the ice coating does not yield readily to the pressure exerted upon the blade through its handle,
such ice coating will be broken by the corruga-
tions 10, which exert pressure at spaced points under such coating, and thus the ice coating will be reduced to fragments in a very easy manner. In such operation, the curved deflector 11, will function as before described.

If the coating of ice upon the pavement be of such tenacity that it will not yield in the shovelling action, the implement may be used as an ice chopper. In such use, the serrated edge of the blade acts with a shear cut, and a dense coating of ice may be easily reduced to fragments. The direct line of the thrust in chopping, insures accomplishment of the work desired. At such times, the flying fragments of ice are apt to strike the face and eyes of the user of the implement. But the provision of the shield or deflector 11, serves to prevent this annoyance, and consequently the flying chips of ice are thrown to one side.

In Fig. 4, I have shown a construction in which the curved shield or chip deflector 11 is duplicated, as indicated at 111, by the arrangement of a like element at the rear of the blade, to deflect chips at both sides while the implement is functioning as an ice chopper.

The upper edge of the curved deflector, 11 or 111, will serve as a step, upon which foot pressure may be applied, if its use in that manner be found desirable at any time.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:

1. An implement functioning as a snow shovel and an ice chopper; as described, embodying a blade having an exposed cutting edge and a handle therefor, the handle being attached to the blade so that the cutting edge of the blade is in a general plane directly in line with the axis of the handle, the blade being corrugated vertically and sharpened at an angle which is inclined with relation to the general plane of the blade, whereby the cutting edge of the corrugated blade is serrated.

2. An implement functioning as a snow shovel and an ice chopper; as described, embodying a blade having an exposed cutting edge and a handle therefor, means upon the blade for supporting the handle with its axis co-incident with the general plane of the cutting edge of the blade, and the lower portion of the blade being corrugated in its width and sharpened at an angle inclined with relation to the general plane of the blade, whereby a serrated cutting edge for the blade is produced.

3. The implement as set forth in claim 2, in addition to which the corrugations of the blade extend beyond the lower portion of the socket embossment, to re-inforce the blade.

4. The implement as set forth in claim 2, in addition to which the upper portion of the blade is turned outwardly from the general plane of the blade, to form a deflector for snow and ice.

5. The implement set forth in claim 2, in addition to which the blade is provided upon each side with curved deflectors for snow and ice.

6. An implement functioning as a snow shovel and an ice chopper, as described, embodying a blade and a handle therefor, a socket associated with the blade for receiving and holding the handle with its axis in the plane of the cutting edge of the blade, the lower portion of the blade being corrugated and sharpened in a plane at an angle which is inclined with relation to the general plane of the blade, whereby the cutting edge of the corrugated blade is serrated.

In testimony whereof, I have signed my name at Milwaukee, this 20th day of February, 1931.

H. L. WINKIE.