Oct. 10, 1933. M. B. BULGER 1,930,000

AUTO SNOW SHOVEL

Original Filed April 4, 1932 2 Sheets-Sheet 1

Fig. 1.

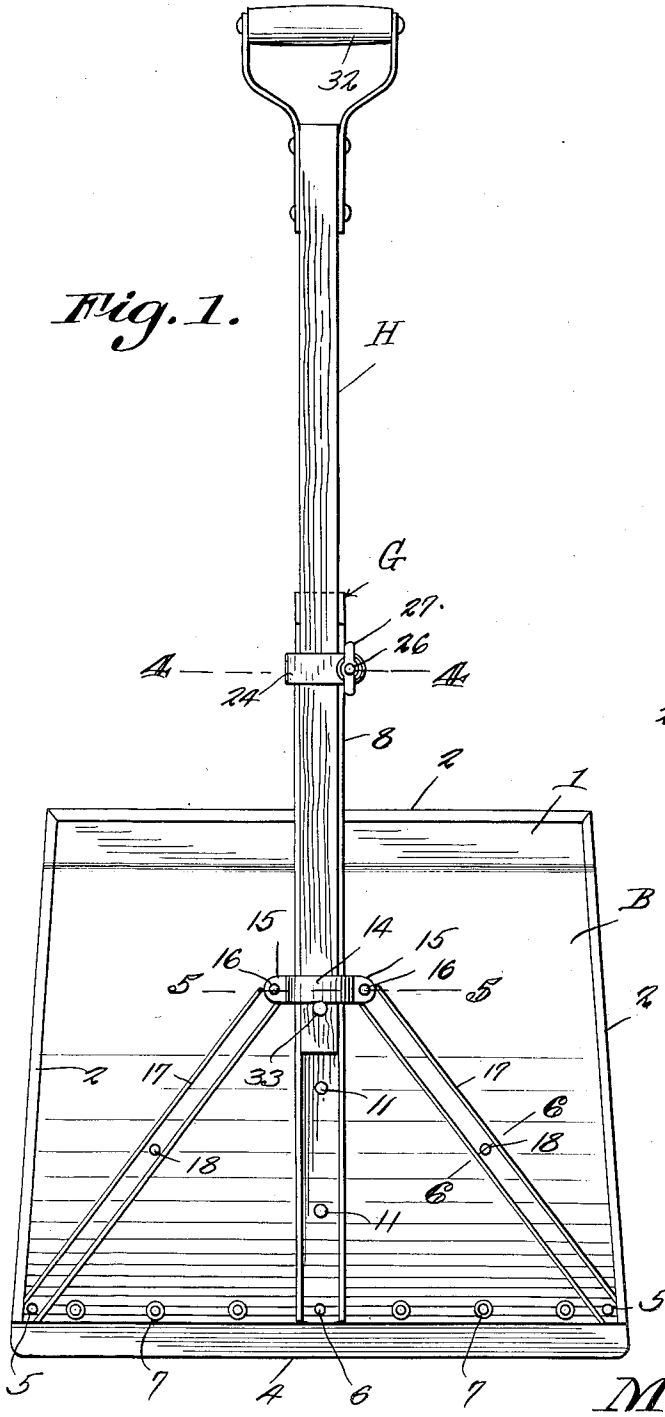
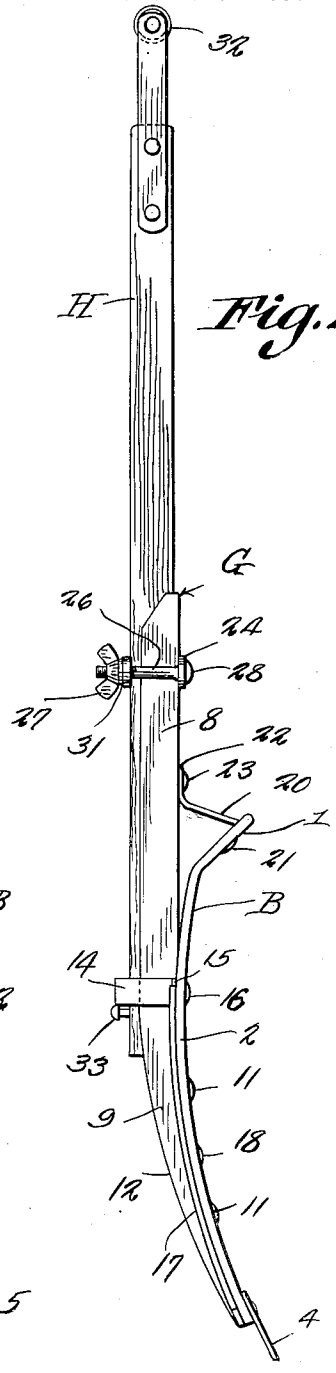


Fig. 2.



M. B. Bulger
Inventor

By C. A. Snow & Co.
Attorneys.

Oct. 10, 1933. M. B. BULGER 1,930,000

AUTO SNOW SHOVEL

Original Filed April 4, 1932 2 Sheets-Sheet 2

Fig. 3.

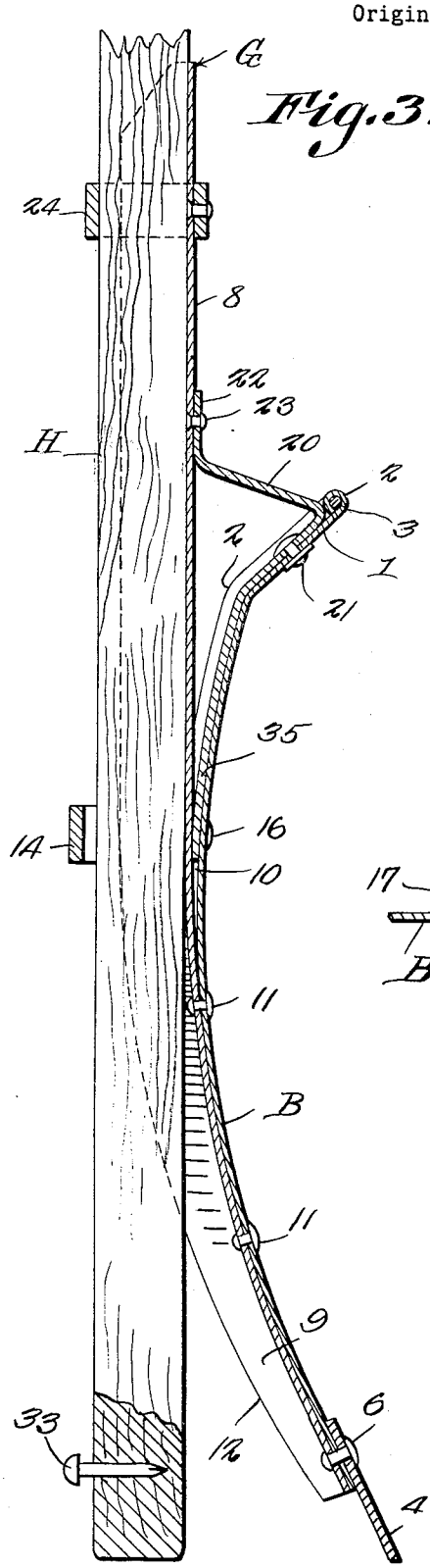


Fig. 4.

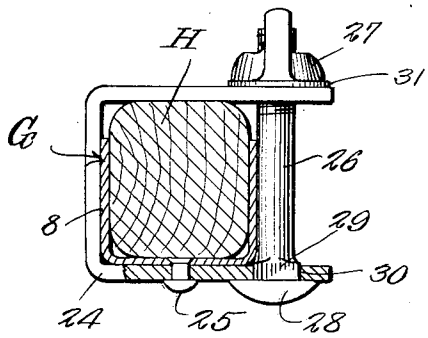


Fig. 5.

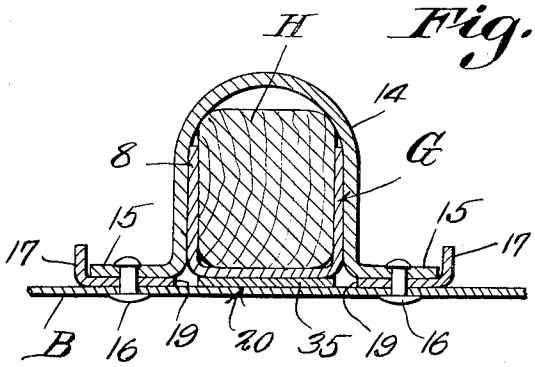
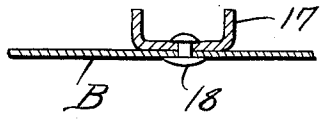


Fig. 6.



Inventor

M. B. Bulger

By C. A. Snow & Co.

Attorneys.

Patented Oct. 10, 1933 1,930,000

UNITED STATES PATENT OFFICE

1,930,000

AUTO SNOW SHOVEL

Michael B. Bulger, Beaver Dam, Wis., assignor to Felix H. Quandt, Beaver Dam, Wis.

Application April 4, 1932, Serial No. 603,121
Renewed August 3, 1933

4 Claims. (Cl. 294—57)

The device forming the subject matter of this application is a snow shovel, and one object of the invention is to provide novel means for mounting the handle of the snow shovel slidably on the blade, so that the handle can be moved downwardly, when the device is not in use, thereby decreasing the length of the article, so that it can be carried conveniently in an automobile. Another object of the invention is to provide novel means for reenforcing and stiffening the blade of the shovel, and to provide novel means for mounting the handle in place, securely but adjustably.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Fig. 1 shows, in rear elevation, a device constructed in accordance with the invention;

Fig. 2 is a side elevation;

Fig. 3 is a longitudinal section, parts being broken away, and parts being in elevation;

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 1;

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 1;

Fig. 6 is a transverse section taken on the line 6—6 of Fig. 1.

The device forming the subject matter of this application preferably is made of metal, saving as hereinafter specifically stated. It comprises a curved plate B, provided on its upper edge with an overhanging, outwardly extended wing 1. A reenforcing bead 2 is formed on the vertical edges and on the upper edge of the blade B, and within the bead 2 may be located a stiffener 3, such as a piece of wire, as shown in Fig. 3. A steel lip 4 overlaps the lower edge of the blade B and is held in place on the blade by securing elements 5, 6 and 7. The securing elements 7 connect the lip 4 and the blade B only, but securing elements 5 and 6 have other functions which will be alluded to hereinafter.

The letter G designates a guide, which is trough-shaped or U-shaped in cross section. The guide G comprises a straight body 8 and a curved end 9. The curved end 9 of the guide G is in contact with the blade B, as shown in Fig. 3, but the straight body 8 of the guide diverges from the blade, to from an angle, which is marked in Fig. 3 of the drawings by the numeral 10. The curved end 9 of the guide G is held upon the blade B and upon the lip 4 by the securing element 6, other securing elements 11 being used to connect the curved end of the guide with the blade B. The side flanges of the curved end 9 of the guide G diminish in width, as they extend downwardly, as Fig. 3 of the drawings will show, at 12.

The straight body 8 of the guide G is spanned and embraced (Fig. 5) by an arched retainer 14, having lateral feet 15, connected by securing devices 16 with the blade B. On the back of the blade B are located upwardly converging braces 17, which may be channel-shaped, these braces extending downwardly and outwardly, to the lower corners of the blade B. The braces 17 are held on the blade B by securing elements 18.

It can be seen in Fig. 5 that the inner flanges of the braces 17 are cut away, as shown at 19, so that the body portions of the braces can extend between the feet 15 of the retainer 14 and the blade B, and be engaged by the securing devices 16 which hold the retainer on the blade.

The numeral 20 marks a V-shaped bracket, one end 35 of which is wedged tightly in the angle formed by the blade B and the straight part 8 of the guide G. The said end of the bracket 20 is in contact with the rear surface of the blade B, and is held on the blade by a securing element 21, located closely adjacent to the reenforcing bead 2, as Fig. 3 will show. The angle of the bracket 20 abuts against the bead 2, to promote strength, and the upper arm of the bracket 20 extends backwardly toward the part 8 of the guide G, the bracket terminating in an upwardly prolonged extension 22, connected to the part 8 of the guide G by a securing element 23.

A U-shaped clamp 24, having some resiliency, extends crosswise of the straight part 8 of the guide G, as Fig. 4 will show. One arm of the clamp 24 extends along the base of the part 8 of the guide G, and is connected thereto by a securing element 25. The opposite arm of the clamp 24 extends across the mouth or open side of the part 8 of the guide G, in spaced relation thereto. The intermediate portion of the clamp 24 bears against one side wall of the part 8 of the guide G. The ends of both arms of the

clamp 24 projects laterally beyond the opposite wall of the part 8 of the guide G, and are connected by a clamp bolt or tightening device 26. The head 28 of the clamp bolt 26 engages the end of one arm of the member 24. Adjacent to the head 28, the draw or clamp bolt 26 has a squared shank 29, received in a square hole 30 in one arm of the clamp 24, the bolt 26 thus being prevented from turning. On the free end of the bolt 26 is threaded a wing nut 27, a washer 31 being mounted on the bolt, between the nut 27 and the adjacent arm of the resilient clamp 24.

The straight part 8 of the guide G projects upwardly, beyond the upper edge of the blade B, and receives, for longitudinal sliding adjustment, a handle H, which may be made of wood. The handle is slidably received, also, in the clamp 24, as shown in Fig. 4, and in the arched retainer 14, as shown in Fig. 5. On the upper end of the handle H there is a grip 32 of any desired construction. A laterally projecting stop 33, which may be a nail or pin, is mounted in the lower end of the handle H.

In practical operation, the handle H can be pulled up into the position of Figs. 1 and 2, until the stop 33 engages the retainer 14, the wing nut 27 being threaded down on the bolt 26, to cause the handle H to be gripped in the clamp 24, as shown in Fig. 4, the handle, thus, being held in the position of Figs. 1 and 2. The clamp 24 does not carry all of the pulling strain, because the stop 33 engages the retainer 14.

When it is desired to stow the shovel in small compass, the wing nut 27 is loosened, and the handle H is slid downwardly into the position shown in Fig. 3 of the drawings, or is slid downward to a greater extent than there shown, if the operator wishes. With the handle H in the position of Fig. 3, the wing nut 27 of course may be tightened, to hold the handle H against longitudinal sliding movement in the guide G.

The handle H may be as long or as short as desired. If the operator wishes to shorten the handle H, all that he has to do is to saw off the lower end of it, and shift the stop 33 upward into a new position.

Considered as a whole, the shovel is characterized by novel means for mounting the handle H slidably, by the provision of novel means for holding the handle against sliding movement, and by the provision of structural details which strengthen the snow shovel generally, and make it well adapted to withstand hard use.

Having thus described the invention, what is claimed is:—

1. A snow shovel comprising a blade, a guide, means for securing the guide directly and rigidly upon the blade, a handle mounted in the guide for straight line longitudinal sliding movement, to shorten the effective length of the handle with respect to the blade, and means carried by the guide and engaging the handle to hold the handle releasably in different positions of longitudinal adjustment, the guide being U-shaped in cross section, and open at the back throughout its entire length, to facilitate the clearing of the guide from ice and snow when the handle is slid longitudinally.

2. A snow shovel comprising a curved blade, a trough-shaped guide secured to the blade and forming an angle with the blade, a V-shaped bracket having one end engaged in said angle, the opposite end of the bracket being secured to the guide, a handle longitudinally slidable in the guide, and means for holding the handle in adjusted longitudinal positions in the guide.

3. In a snow shovel comprising a blade, a trough-shaped guide secured to the blade, a retainer extended across the guide, converging braces secured to the blade, securing elements connecting the braces with the retainer and with the blade, a handle slidable in the guide and in the retainer, and a stop carried by the handle and engaging the retainer to limit the outward movement of the handle in the guide.

4. A snow shovel comprising a blade, a one-piece handle, means for mounting the blade on the handle for straight line sliding movement longitudinally of the handle, to assume a position wherein the upper edge of the blade is spaced downwardly from the upper end of the handle, and wherein the lower edge of the blade is spaced upwardly from the lower end of the handle, thereby to shorten the effective length of the complete shovel to a length that is no greater than the length of the handle, and means for holding the handle releasably in adjusted positions of longitudinal adjustment.

MICHAEL B. BULGER.