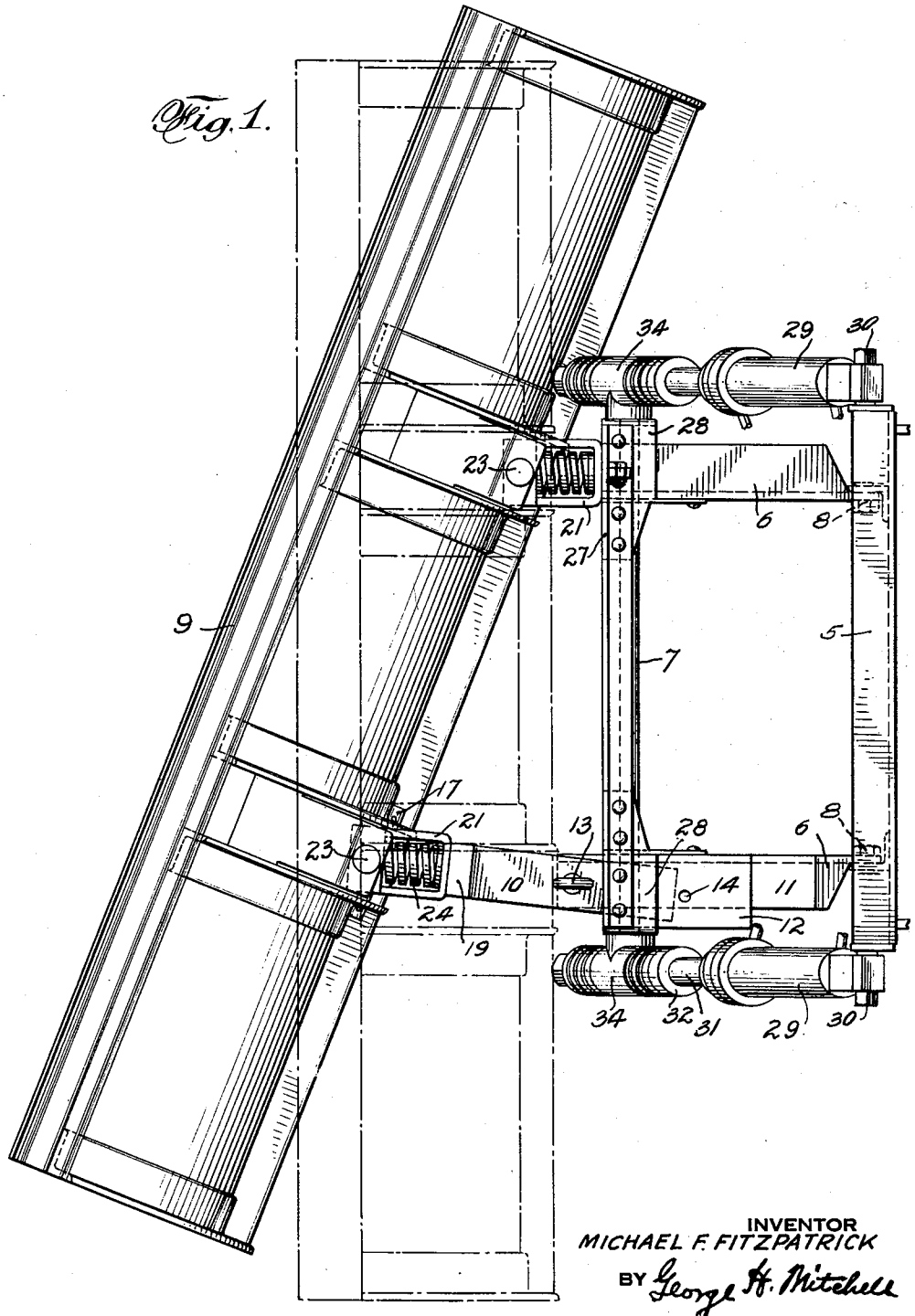
April 27, 1943. M. F. FITZPATRICK 2,317,680

SNOW PLOW

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Fig. 1.



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Fig. 2.

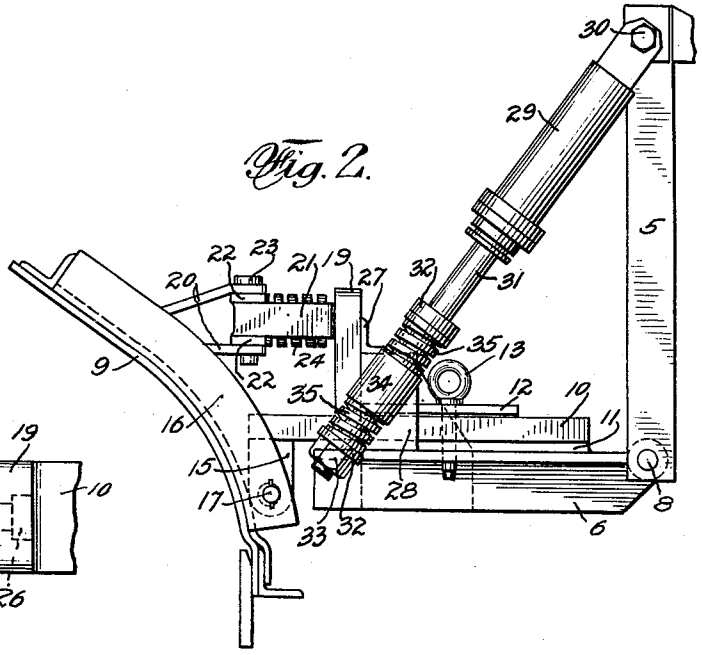


Fig. 4.

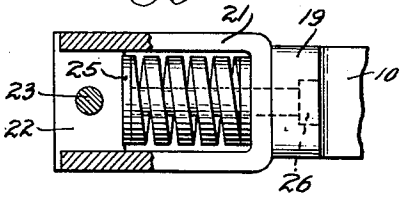


Fig. 3.

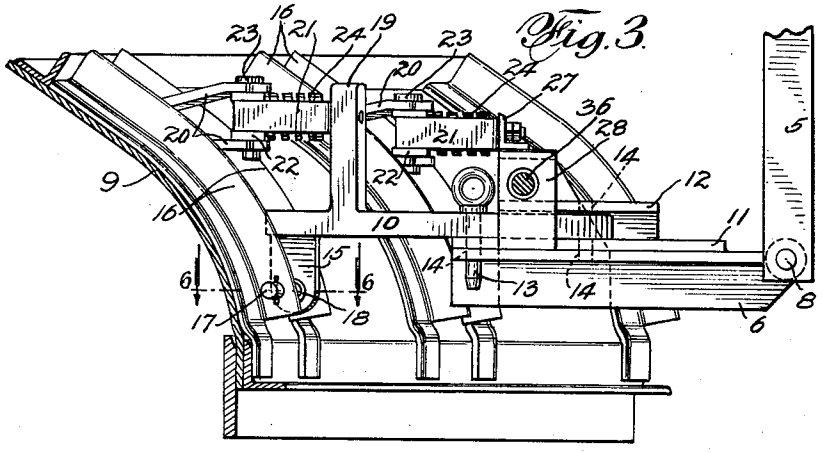


Fig. 5.

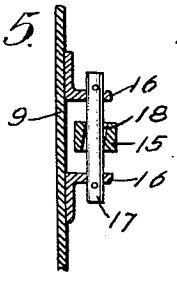
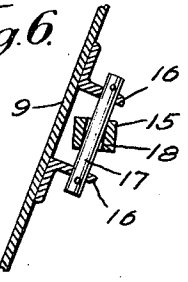


Fig. 6.



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Patented Apr. 27, 1943 2,317,680

UNITED STATES PATENT OFFICE

2,317,680

SNOWPLOW

Michael F. Fitzpatrick, Brooklyn, N. Y.

Application June 20, 1942, Serial No. 447,827

3 Claims. (Cl. 37—42)

My invention relates to a snow plow and more particularly to a snow plow to be carried by a truck or similar vehicle and adjustable angularly relatively to the vehicle.

At the present time, snow plows are often carried at the front of a truck and the truck is moved forward so as to plow or scrape the snow up into piles for subsequent removal. It is highly advantageous to have a plow which is adjustable angularly to facilitate the plowing of streets and particularly portions of streets between parked cars.

It is an object of my invention, therefore, to provide a snow plow which is readily adjustable in an angular direction.

It is another object to provide a simple, sturdy, easily adjustable means for changing the angular position of a snow plow.

Other objects and various features of novelty and improvement will be hereinafter pointed out or will become apparent to those skilled in the art.

In the drawings which show, for illustrative purposes only, a preferred form of the invention—

Fig. 1 is a plan view of a snow plow, illustrating features of the invention, the plow being shown in angular position;

Fig. 2 is an end view of the plow shown in Fig. 1, the plow being shown in position at right angles to the direction of travel;

Fig. 3 is a sectional view similar to Fig. 2, the plow being shown in angular position as in Fig. 1;

Fig. 4 is a fragmentary view on an enlarged scale, illustrating a detail;

Fig. 5 is a fragmentary plan view of a pivotal connection to the plow member; and

Fig. 6 is a fragmentary sectional view, taken substantially in the plane of the line 6—6 of Fig. 3, and illustrating the same parts as Fig. 5 but in different positions.

My improved snow plow is designed to be carried by a truck or similar vehicle, only the front carrying structure of the truck being shown. Any suitable carrying structure may be attached to or form part of the truck and which for illustration is represented as a sturdy structural steel framework 5. The snow plow is supported by a part of the truck or framework 5, preferably on what I term a base or support pivotally carried by the truck. The base or support may be formed of angle members 6—6 secured together by a tie member 7 at the front. The rearwardly extending legs of angle members 6—6 are preferably pivoted to the frame part as by means of pivot bolts 8—8 so that the entire support may swing upwardly about a horizontal axis coincident with the pivots 8—8.

The plow member, designated generally 9, may be of any desired form suitable for its purpose. The plow member 9 is movably secured to the support so as to permit swinging in an angular direction and preferably also a limited tipping. Therefore, one portion of the plow member is preferably pivoted directly to the support and is capable of movement relatively thereto only in an angular and in a tipping direction. The plow at a point spaced from the support pivot is secured to an adjustable part. In the form shown, such adjustable part is in the form of a bracket 10, which comprises a relatively long, substantial body slidable on the way 11 of the leg 6 and held in sliding relation thereto as by means of a cap plate 12 secured to the leg 6 and spaced therefrom so as to provide a housing for slidably holding the bracket 10 in place. The bracket 10 is held in various positions of adjustment relatively to the support as by means of a sturdy pin 13 passing through an aperture in the bracket 10 and through apertures 14—14 in the leg 6 and also in the cap plate 12 in the position of rear adjustment. In the specific form illustrated, the bracket has a depending lug 15 which fits between the legs of spaced apart angle irons 16—16 secured to the back of the plow member. A pivot pin 17 may be held in the angle legs 16 and passes through an aperture 18 in the lug 15. The aperture 18 is preferably a loose fit over the pivot pin 17 so that there will be no substantial binding no matter whether the plow is in the angular position shown in Figs. 3 and 6 or in the position shown in Figs. 2 and 5. That portion of the plow which is pivotally carried on the support at the end opposite the adjustable end may be supported from the support by means such as a pin which could be a duplicate of the pin 17. Thus, the connection of the plow member 9 to the support and to the bracket 10 is such as to permit the swinging or angular positioning of the plow member relatively to the support and so as to permit tipping of the plow member about a horizontal axis defined by the pin or pins 17.

To further support the plow, the bracket 10 may have an upstanding arm or lug 19, which serves as an abutment or support for the upper portion of the plow member 9. The upper portion of the plow member 9 may carry a pair of spaced-apart plates 20 forming, in effect, a yoke, the ends of which extend over a generally U-shaped strap 21 normally abutting against the

upstanding lug or arm 19. Upper and lower bearing plates 22—22 are secured to the straps 21 between the yoke arms 20. A pivot pin 23 extends down through the yoke arms 20 and through the plates 22, thus pivotally securing the plow to the strap 21. A sturdy compression spring 24 is interposed between the bottom of the U-strap 21 and the head 25 of a bolt or other holding means passing through the bottom of the strap 21 and the upstanding arm 19. A head or nut 26 on the bolt may fit in a counterbore in the arm 19. When the plow is tipped about the horizontal axis represented by the pivot pins 17, the strap 21 will be pulled away from the arm 19, against the resistance of the compression spring 24. A part adjacent the opposite end of the plow may be provided with a resilient tip-permitting mechanism identical with that just disclosed, except that instead of having the U-strap 21 abutting against an adjustable bracket arm 19, the strap may abut against any suitable abutment such as an angle iron 27, which serves also as an abutment for the head or nut on a bolt passing through the center of a spring, all as will be understood.

It will be seen that, when it is desired to move the plow member from the right angular position, as shown in Fig. 2 and in dot-dash lines in Fig. 1, to the angular position shown in full lines in Fig. 1 and in Fig. 3, it is only necessary to remove the pin 13 and swing the plow to the desired adjusted angular position. The pin 13 is then replaced in different holes so as to hold the bracket and the plow in such adjusted position. The plow may tip slightly (as when striking an obstruction in the street) no matter whether it is in angularly adjusted position or in the right angular position.

The entire plow and support assembly is preferably arranged to be raised as a unit during such times as the plow is not in use. In the form shown, the support is provided with upstanding lugs 28—28. The truck frame part 5 may carry at opposite sides hydraulic jack cylinders 29—29, pivotally secured thereto, as at 30. The piston rod 31 of each jack may carry fixed heads or washers 32—32, the relative positions of which may be adjusted as by means of a nut 33 screwed on the end of the rod 31. A pivot sleeve 34 slidable on the rod is located between the washers 32—32 and resiliently held between such washers as by means of a pair of compression springs 35—35. Each pivot sleeve 34 is pivotally secured, as by means of a pin 36, to the pivot lugs 28 on the plow support, as will be understood. Thus, during normal operation, the entire plow and support assembly will be resiliently supported by the jack and lower spring 35 and any up and down or swinging movement of the plow and support, due to irregularities in the street or to the encountering of obstructions, will be resiliently resisted by the springs. When the plow and support assembly are to be raised to inoperative position, the hydraulic jack goes into play so that the piston rod 32 is retracted into the cylinder, thus raising the entire plow and support assembly.

While the invention has been described in considerable detail and a preferred form illustrated, it is to be understood that various changes may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a device of the character indicated, a support, a plow member, means for pivotally supporting a lower part of said plow member on said support for movement about a vertical axis, resilient means connecting said support and said plow member at a point above said lower part, an adjustable bracket member carried by said support, means for holding said bracket member in various positions of adjustment on said support, means for movably securing said bracket to said plow member at a lower part of the latter, and means for securing said bracket to an upper part of said plow member, for the purpose described.

2. In a device of the character indicated, a support, a plow member, means for movably securing said plow member to said support to permit angular movement of said plow member relatively to said support, a bracket adjustably carried by said support, means for holding said bracket in various positions of adjustment on said support, means for pivotally securing a lower portion of said plow member to said bracket, an upstanding arm on said bracket, and means for resiliently securing an upper part of said plow member to said upstanding arm on said bracket.

3. In a device of the character indicated, a support, means for pivotally carrying said support on a truck for swinging about a horizontal axis, a plow member, means for resiliently securing said plow member and support to each other, a bracket adjustably carried by said support, means for securing said bracket in various positions of adjustment on said support, means for resiliently securing said bracket to said plow member, and means for resiliently supporting said support and plow member carried thereby in operative position.

MICHAEL F. FITZPATRICK.