Feb. 26, 1929. 1,703,088

G. C. ABBE

SNOWPLOW

Filed Feb. 1, 1927

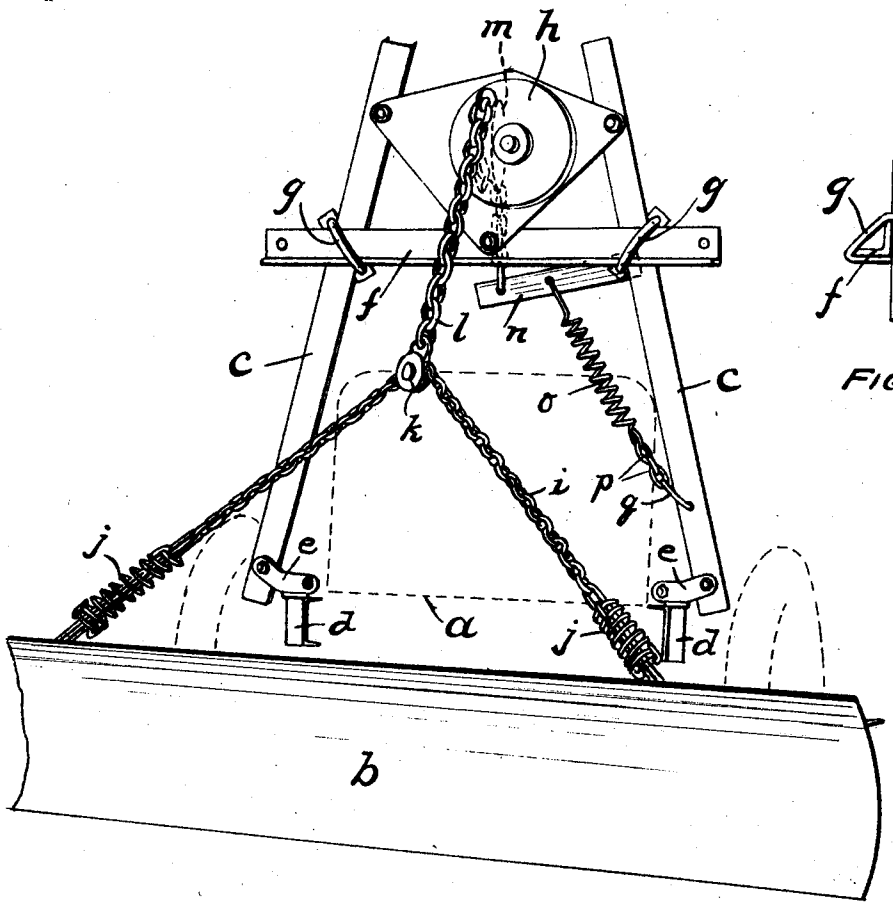


FIG. 1.

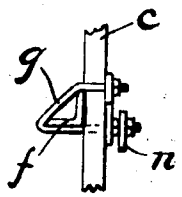


FIG. 2.

INVENTOR

WITNESS:

Robt. R. Mitchell.

George C. Abbe

BY

Burns & Harding

ATTORNEYS.

Patented Feb. 26, 1929. 1,703,088

UNITED STATES PATENT OFFICE.

GEORGE C. ABBE, OF KENNETT SQUARE, PENNSYLVANIA, ASSIGNOR TO AMERICAN ROAD MACHINERY COMPANY, OF KENNETT SQUARE, PENNSYLVANIA, A CORPORATION OF DELAWARE.

SNOWPLOW.

Application filed February 1, 1927. Serial No. 165,065.

My invention relates to an improvement in snow plows and more particularly to that type of snow plow adapted for connection to a motor truck for use in cleaning snow from streets and highways.

Heretofore snow plows of the type to which my invention relates have been widely used and have proved to be of great value in facilitating the removal of snow from city streets and for maintaining highways open. However, such plows are open to the objection that they are not readily manipulatable to avoid obstructions such as man hole covers and the like, which are frequently met with when the plow is operated on a city street.

In the operation of a plow of the type to which my invention relates, the plow is advanced at a substantial speed and even a comparatively slight obstruction is liable to inflict substantial damage on the plow if it be not avoided. With such plows as heretofore constructed the avoidance of obstructions requires the plow to be raised which is accomplished manually and which is a slow proceeding, due to the fact that the weight of the plow is such as to require the employment of reduction gearing in the hoisting means. Thus, if an obstruction is to be avoided, it must be observed at some distance ahead of the plow in order to allow time in which to effect raising of the plow. Since an obstruction, such as a man hole cover, is practically impossible to observe at any substantial distance ahead of the plow and since the plow must be raised substantially before an observed obstruction is reached, the efficiency of the plow is reduced when obstructions are observed in time to effect raising of the plow or the plow is subjected to the possibility of injury, where observation of an obstruction is not made in time to permit raising of the plow.

Now, it is the object of my invention to provide means whereby when the hoisting mechanism of a plow is initially operated the plow will be raised with substantial rapidity to a point at which it will clear ordinary obstructions, thus enabling the plow to be manipulated to avoid obstructions without decreasing its efficiency for clearing the snow from a street or highway upon which it may be operated.

Having now indicated, in a general way, the nature and purpose of my invention, I will proceed to a detailed description thereof with reference to the accompanying drawings in which there has been illustrated a preferred embodiment thereof and in which:

Fig. 1 is a front view of a snow plow and hoisting means therefor.

Fig. 2 is a view showing a detail of construction.

In Figure 1, to which reference is more especially made, *a* indicates a motor truck the radiator and front wheels of which are indicated by dotted lines, without detail, to illustrate the operative position of the plow with relation to the truck, which may be of any well known type and construction. *b* indicates a snow plow blade, which may be of the form shown or may be of the V type. The blade *b* is secured to a frame which in turn is pivotally secured to the front axle of the truck. The plow frame and the connections thereof with the blade and with the truck axle may be of any well known or desired construction and may be, for example, as shown in detail in the patent to Ruth, No. 1,195,271.

A pair of uprights *c* are secured to the front ends of the side members *d* of the truck frame by means of brackets *e*. The uprights *c* are cross braced by means of a cross member *f* secured to the uprights by means of U bolts *g* and a hoist *h*, which may be, for example, a chain hoist, is supported adjacent the upper ends of the uprights *c*, being secured thereto and to the cross member *f*. The hoist is adapted to be operated by any well known means such, for example, as a wheel positioned adjacent the driving seat of the truck and connected to the hoist by means of a shaft.

A chain *i* is connected at its ends, through the medium of springs *j*, to the blade adjacent its ends. The chain *i* passes through a sheave *k* connected to an end of a chain *l*, which passes over the chain wheel *m* of the hoist and which acts as a sprocket on the chain. The tail end of the chain *l* is connected to the free end of a lever *n*, the other end of which is pivotally mounted on one of the U bolts *g*. A bearing spring *o* is connected to the lever *n* between its ends and to one of the uprights *c* through the medium of links *p*, which engage with a hook *q* attached to the upright.

For the effective operation of the device embodying my invention the spring *o* is so adjusted, while the plow is in raised position,

that on lowering the plow to working position its weight will put the spring under substantial tension. The adjustment of the spring may be accomplished by engaging one or another of the links p with the hook q. When the spring p is properly adjusted so as to be under substantial tension when the plow is in working position, it exerts a lifting force on the tail of chain l, through the medium of lever n, which is ineffective during the normal operation of the plow, but which becomes effective on operation of the hoist to raise the plow and enables a very rapid manipulation of the hoist and consequent relatively rapid raising of the plow until its tension is satisfied.

It will now be observed that the maximum effort from spring O will be obtained on the initial operation of the hoist, thus enabling a very rapid raising of the plow initially, and that on provision of a proper sized spring and its proper adjustment, it will exert a substantial effort to enable a rapid lifting of the plow to a point at which it will clear ordinary obstructions, such as man hole covers. Thus it will be observed that by virtue of my invention means are provided whereby a plow may be rapidly manipulated for the avoidance of obstructions and since, due to its weight it may be rapidly returned to working position on clearing an obstruction, its efficiency will not be decreased on account of obstructions and injury therefrom will be avoided.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:—

The combination with a vehicle of a snow plow, connected to the vehicle on a horizontal pivot, an upright frame on said vehicle, a hoist supported by said frame and adapted to be operated to raise and lower said plow about its pivotal connection with the vehicle, a chain connected to the snow plow and engaged with the hoist, a lever connected to said frame and to the tail of said chain and a spring connected to said lever and to said frame, said spring being adapted to be tensioned under the weight of said snow plow when it is lowered into operative position and being adapted to cooperate with said hoist when it is operated to raise said plow.

In testimony of which invention, I have hereunto set my hand at Kennett Sq., Pa., on this 19 day of January, 1927.

GEORGE C. ABBE.