Nov. 6, 1934. M. E. LARSEN 1,979,750

HIGH LIFT ATTACHMENT FOR FRAMELESS PLOWS

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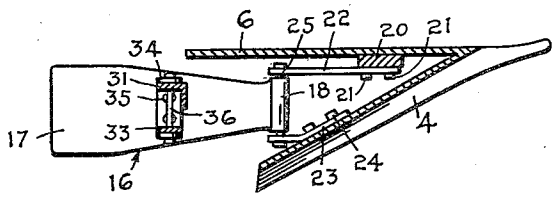


Fig. 3.

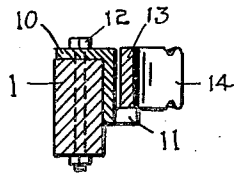


Fig. 5.

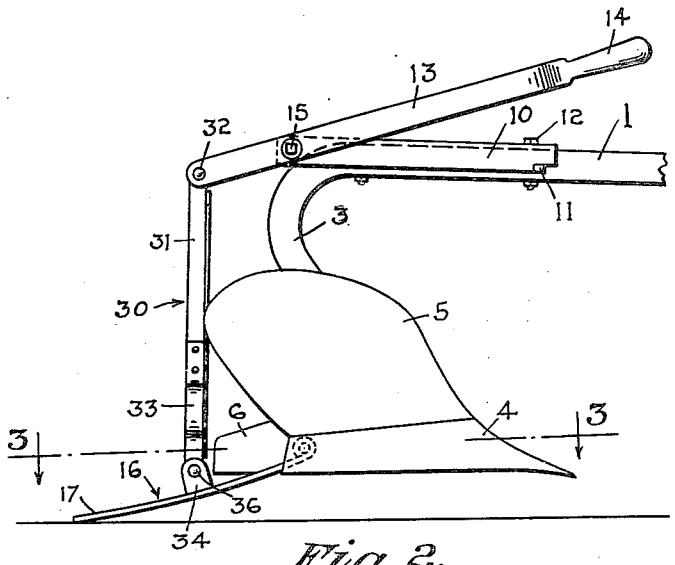


Fig. 2.

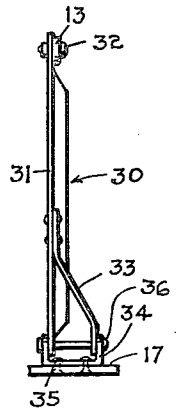


Fig. 4.

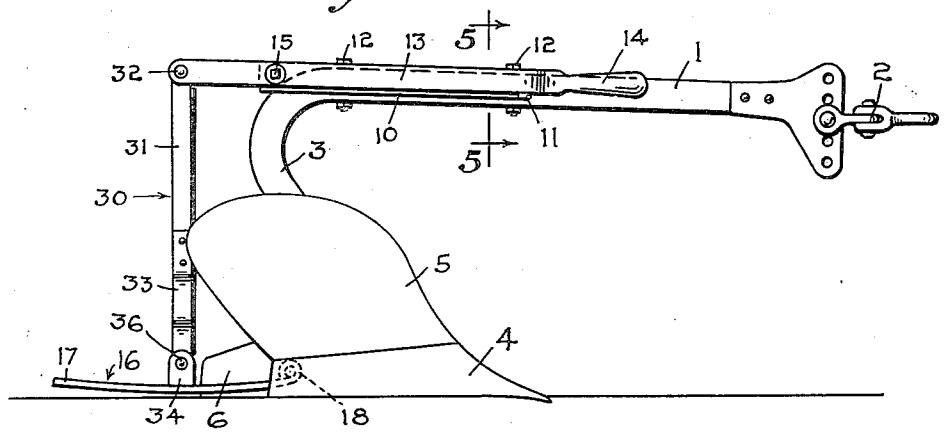


Fig. 1.

INVENTOR
Milner E. Larsen
BY J. L. Rivers.
ATTORNEY

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HIGH-LIFT ATTACHMENT FOR FRAMELESS PLOWS

Milner E. Larsen, Bickleton, Wash.

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3 Claims. (Cl. 97—132)

My invention has reference to an attachment for plows of the frameless type, for readily elevating the plow to a substantial height from the ground in which it is working, or under other conditions, and thereby adding facility and convenience to the operation and care of such plows.

The objects of said invention, generally stated, are:

To provide in a frameless plow, a device which permits the entire plow, through a simple single manipulation of the mechanism of said device, to be elevated as required, and then by a release of said mechanism to be brought back into plowing position, the same being accomplished while the plow is under propelling power;

To afford a device, having these characteristics, which may be attached to any frameless plow, of ordinary construction;

To supply a device which is particularly effective in the type of frameless plow designed to be pulled by a horse-drawn plow sulky or a motor vehicle; and,

To make available, a device of this kind which is simple in construction and easy to operate.

In the accompanying drawing—

Figure 1 is a side elevation of a frameless plow with said device attached, the plow being indicated as in operative position for plowing, and carrying a clevis.

Fig. 2 is a side elevation of the same, the beam of the plow, however, being broken away and the plow shown as elevated by said device.

Fig. 3 is a horizontal section, drawn on the line 3—3, of Fig. 2, being particularly designed to show the swinging connection of a shoe of the device with said plow.

Fig. 4 is a rear elevation of said shoe and a link connecting the shoe with the actuating lever of the device, the view also showing the swinging connections of the link with said shoe and lever.

Fig. 5 is a cross section, drawn on the line 5—5, of Fig. 1, particularly illustrating an angle iron support bolted to the beam of the plow and adapted to support said lever, a stop for the lever being also indicated.

Referring more particularly to the drawing, 1 denotes the beam of a frameless plow, carrying at one end a clevis 2, and at its other end an integral and curved standard 3, said standard having mounted thereto, a share 4, a moldboard 5, and a landslide 6. The parts just enumerated, as is obvious, present the usual construction to be found in frameless plows, and well known in the art.

Said device, designed primarily to be constructed of metallic material, comprises a support 10, made preferably of angle iron, and is adapted to extend longitudinally of said beam for a portion of the length of the beam and slightly beyond the rear portion thereof, as indicated in Fig. 1. An integral stop 11, for the actuating lever heretofore referred to, is formed in said support by making a lengthwise cut through one end of the support and then bending the lower section thus cut so that it extends laterally from the side of the support, as shown in Fig. 2. Said support is secured to said beam by bolts 12 extending through the support and beam.

The actuating lever 13, is provided with a handle 14 offset to afford knuckle space between the handle and said beam, and is pivotally connected with the support 10, as at 15, the stop 11 serving to limit the downward swing of the lever 13. When the plow is supported on a suitable surface, such as a floor or the ground, the contact of the shoe therewith will serve to hold the lever 13 in a horizontal position against the stop 11, and during a plowing operation the slight pressure of said shoe against the bottom of the furrow will subserve the same purpose.

A shoe, generally designated as 16, is provided with an approximately flat and elongated body portion 17, slightly curving upwardly at each end, and reduced in width at its inner end. The inner extremity of said shoe is bent on itself, as at 18, to afford a portion, circular in cross section, which imparts to the shoe a swinging connection with certain elements of the plow. These elements comprise a block 20 secured to the landslide 6 by bolts 21 countersunk in the exterior surface of said landslide, said bolts also serving to hold in place a support 22. Also, a support 23 is secured to the share by bolts 24, said support being located oppositely of the support 22, and having its outwardly disposed end bent so as to bring the same into spaced parallel relation with said support 22. The free ends of the supports 22 and 23 are apertured to receive a rod 25, which rod, when in place, is mounted in the portion 18 of the shoe and is fixedly secured in said supports. As it may be noted in Fig. 3, said rod and the portion 18 provide a relatively wide and strong swinging connection for the shoe with the plow.

The shoe 16 and said lever 13 are connected by a vertically extending link, denoted generally as 30. Said link comprises a body member 31, which may be made of angle iron, the same being apertured at each end, and pivotally connected at its upper end with the lever 13, as at 32. 33 designates a supporting and bracing member bolted to the

body member 31, it being apertured at its lower end, and is designed to provide, in connection with said body member and certain elements mounted on said shoe, a wide swinging connection for said link with the shoe. The elements last referred to comprise a support 34 having upstanding and apertured end portions, said support being secured to the shoe by bolts 35 countersunk in the exterior surface of said shoe, and a bolt 36 extending through the end portions of said support, designed, when in place, to be fixedly secured therein. As it may be observed particularly in Fig. 4, the lower ends of said link swingingly engage the bolt 36.

In operating the device, it is assumed that said plow, equipped with this attachment as shown and described, has been suitably connected up with a horse-drawn plow sulky, for instance, and the parts are in the normal positions shown in Fig. 1. The assembly is now in position for plowing, the shoe 16, when plowing, riding along on the ground and serving as a rear stabilizing element. When it is desired to elevate the plow for the purposes heretofore adverted to, or for any purpose, the lever 13 is raised by the operator, and, as is evident, the force exerted thereby is communicated, through the link 30, to the shoe 16 contacting with the ground. Said shoe is then raised along the major portion of its length and serves to elevate the plow clear of the ground and to a substantial height from the level it first occupied. This result may be readily accomplished while the plow is in motion, the handle 14 of the lever 13, located as it is adjacent the front end of the beam, being within convenient reach of the driver of said sulky.

As it may be noted in Fig. 2, when the plow is thus elevated, the rear end of the shoe contacts with the ground level and obviously will then function to a certain extent as a stabilizer. Under this construction, the plow remains elevated as long as the operator holds the lever 13 in its raised position. When it is desired to return the plow to its normal position, this is effected simply by lowering the lever 13 into contact with the stop 11, as shown in Fig. 1, when, as is evident, the other parts of the attachment and the plow, which were initially set in motion, will assume their normal positions.

A plow, having a single cultivating unit, has been shown and described in connection with this attachment, as it is deemed that the same will sufficiently indicate the construction and mode of operation of my invention. In plows of the frameless type, it is common to provide a plurality of cultivating units connected together. This device, as will be obvious to those skilled in the art, may be utilized in such construction, and wherein a single assembly, as shown and described, will serve to handle a plurality of such units.

In plowing, it is often desirable to raise the plowing instrumentality on turns of 45 degrees or less, and this attachment renders such action simple and effective, not only on account of the facility with which it may be applied, but the resistance of the machine to the ground in which it is employed will be lessened on a turn, such as referred to, as the plow will be then turned on the rear end of said shoe instead of the bottom of the plow.

Further, as it may be noted, the device serves to elevate the plow clear of the ground or the level on which it may be standing. This is desirable not only when working the plow, but in removing the share or other of the cultivating elements of the plow, or in making repairs or adjustments thereto.

While this attachment facilitates the use of small plows, its usefulness in this respect increases when employing larger plows of the type to which it is adapted, as obviously the latter are more wieldy to handle.

For the purpose of illustrating my invention, I have shown in the accompanying drawing a typical embodiment thereof, but I may, however, provide other arrangements and constructions for carrying out the invention, outside of those heretofore referred to, without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. In a frameless plow having a beam, a standard depending from the beam, and a share, a moldboard and a landslide extending from said standard; an attachment for lifting and providing support for said plow, comprising a longitudinal support secured to said beam, a horizontally disposed hand lever pivotally connected with said support and conveniently operable from a point forwardly of said beam, a rod fixedly secured between said share and landslide, an elongated and rearwardly extending shoe having its forward end swingingly engaged with said rod, and a vertically extending link pivotally connected at its upper end with said lever, and swingingly connected at its lower end with said shoe.

2. In a frameless plow having a beam, a standard depending from the beam, and a share, a moldboard and a landslide extending from said standard; an attachment for elevating and providing support for said plow, comprising a support secured to said beam, a horizontally disposed hand lever pivotally connected with said support and operable from a point forwardly of said beam, an elongated and rearwardly extending shoe having its forward end swingingly disposed between said share and landslide, and a vertically extending link pivotally connected at its upper end with said lever, and swingingly connected at its lower end with said shoe.

3. In a frameless plow having a beam, a standard extending from the beam, and a soil-tilling unit mounted to the standard; a device for elevating and providing support for said plow, comprising a longitudinal support detachably connected with said beam, an actuating lever pivotally connected with said support, said lever, when at rest and for the major portion of its length, extending substantially parallel with said beam, a ground shoe having its forward end swingingly and detachably connected with said soil-tilling unit, and a link pivotally connected with the rear end of said lever and swingingly engaged with said shoe.

MILNER E. LARSEN.