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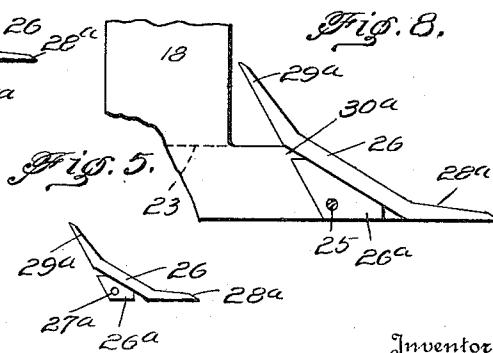
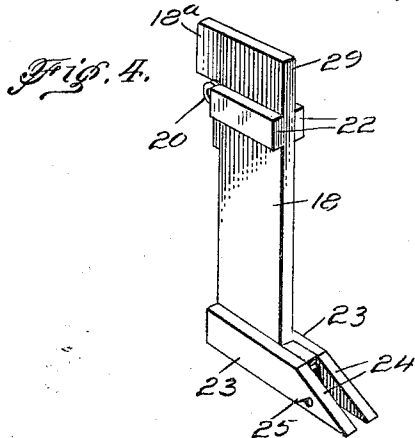
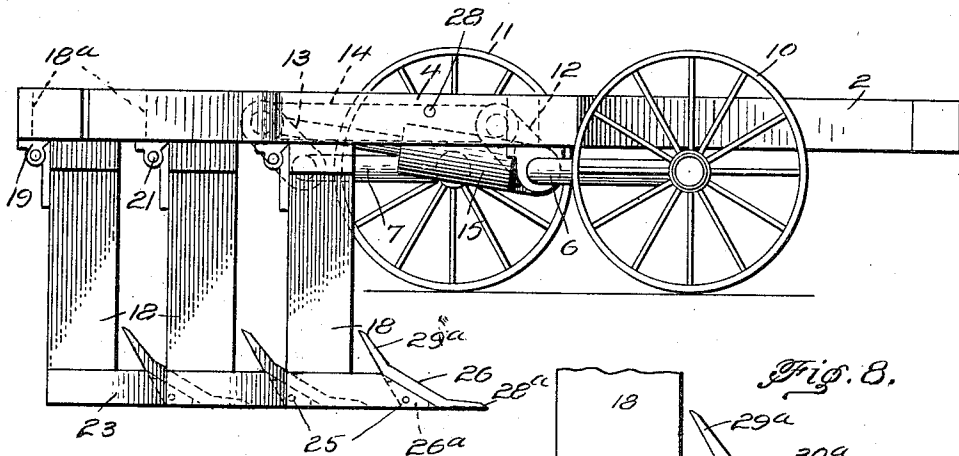
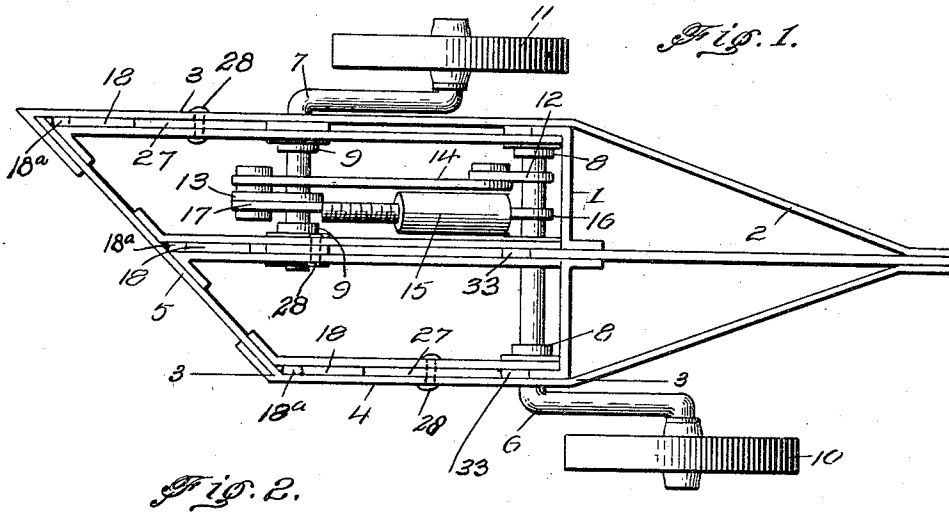
C. L. COMER

1,514,656

PLOW AND SUBSOILER

Filed Jan. 28, 1921

2 Sheets-Sheet 1



Inventor
C. L. Comer.

By
Geo. P. Kimmel. Attorney

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Fig. 3.

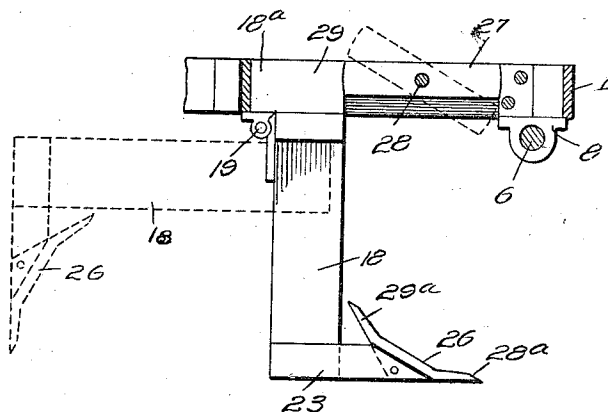


Fig. 6.

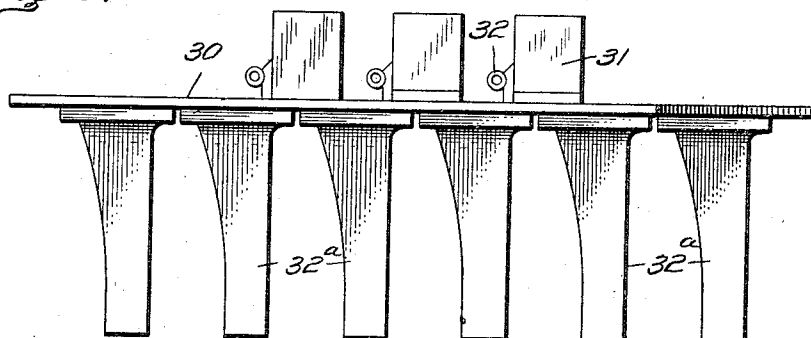
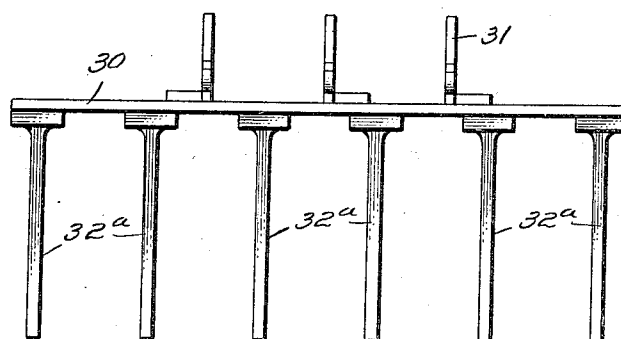


Fig. 7.



C.L. Comer.

Inventor

By *Geot. Kimmel*

Attorney

UNITED STATES PATENT OFFICE.

CLAUDE L. COMER, OF SANTA ANA, CALIFORNIA.

PLOW AND SUBSOILER.

Application filed January 28, 1921. Serial No. 440,643.

To all whom it may concern:

Be it known that I, CLAUDE L. COMER, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented certain new and useful Improvements in Plows and Subsoilers, of which the following is a specification.

This invention relates to plows and more particularly to subsoilers and the like.

The primary object of the invention is the construction of a subsoiler which is capable of operation at a predetermined depth and one in which the standards and plow points may be removed without raising or lowering the frame.

Another object of the invention resides in the provision of a subsoiler constructed and arranged to independently accommodate hinged standards or a plow attachment, and to rigidly retain the same in their vertical operative position.

A still further object of the invention is directed to a novel construction of subsoiler wherein any one plow standard may be raised from the ground without affecting the position of the others or raising the plow frame.

An additional object of the invention relates to an improved and novel form of independent clamping construction for the standards and the plow attachment permitting the same to be locked or unlocked with a minimum of effort and in a highly efficient manner.

With these objects in view and others which will be manifest and suggested as the nature and purpose of the invention are revealed in the following specification and drawings wherein I have shown a practical, yet preferred embodiment thereof.

Figure 1 is a plan view of the subsoiler.

Fig. 2 is a side elevation thereof.

Fig. 3 is a vertical longitudinal view in section on the line 3—3 of Fig. 1.

Fig. 4 is a detached perspective view of one of the standards.

Fig. 5 is a detail view of a plow point.

Fig. 6 is a side elevation of a plow attachment adapted for use in connection with the subsoiler.

Fig. 7 is an end view of the attachment shown in Fig. 6.

Fig. 8 is a modified form of a subsoiler foot and point attached thereto.

Similar numerals in the specification refer to like and corresponding parts on the drawing. The frame of the sub soiler may preferably be constructed of angle iron and comprises a forwardly extending draft portion 2, sides 3, 4, an angular rear side 5, and a connecting, longitudinally directed center bar 1 as shown in Fig. 1. Bent axles 6, 7 are mounted in bearings 8, 9 in the front and rear of the frame and carry the usual ground wheels 10, 11 whereby the machine may be supported for movement.

Cranks 12, 13 are keyed respectively to the front and rear axles 6 and 7 and are connected by a rod 14 so that when the rear crank is actuated, similar motion will be imparted to the forward crank and the frame thereby raised or lowered with respect to the ground for a purpose subsequently to be described. Any suitable means may be employed to actuate the cranks, such as a double acting screw jack 15 supported on the forward axle 6 by a loose connection 16, and a movable member 17 connected to the rear crank 13 as shown to simultaneously actuate the axles to raise and lower the frame to control the depth to which the plows operate. It is to be understood, however, that a cylinder provided with a suitable piston and piston rod operated by compressed air, steam, water and other pressure means may be utilized in this connection for raising and lowering the frame and the plow standards and the shovels or mold boards carried thereby.

The side members 3 and 4 and the intermediate member 1 are each formed of two parts in spaced relation, or in pairs, as shown in Fig. 1, and each pair provided with depending perforated ears 19 to receive pivot pins 21, and a stop 33 spaced from the ear.

A standard 18 is associated with each beam member and extending by their upper ends 29 between the spaced beam members, and with a rearward extension 18^a from each portion 29.

Each standard 18 is likewise provided with an eye 20 to engage between one pair of the ears 19 and receive one of the pivot pins 21.

Each standard 18 is likewise provided with stop blocks 22 to limit the movement of the standards in one direction.

By this means the standards are free to swing in one direction only.

Shoe members 23 are attached to the lower ends of the standards, and beveled as at 24 and apertured as at 25 to receive holding bolts to enable plow points or shovels 26, or other suitable earth working elements to be removably attached as desired. It will be noted that the plow points are positioned and angularly inclined with respect to the standards which are arranged in staggered relation on the frame, the depth of cut being regulated by the height to which the frame is adjusted.

The plow point as shown is formed with a rear extension 26^a provided with an aperture 27^a which is adapted to register with the apertures 25 whereby the plow point may be securely positioned in the subsoiler foot of the standard. The front cutting edge 28^a of the plow point is preferably in horizontal alinement with the plates 23, said plow point being also provided with an angular projection 29^a permitting the soil to ride over the same during the subsoiling.

In the form of standard and plow point shown in Fig. 8 the plates 23 are partly cut away to form abutments 30^a for the rear extension 26^a thus relieving the connecting bolt from the pressure which holds the plow point in the subsoiler foot.

The standards 18 are rigidly secured in their vertical, operative position, by means of a locking plate 27, pivoted at 28 with one end engaging the upper extremity 29 of the standards as shown in Fig. 3. By this arrangement as the plate 27 is moved out of engagement with the standard to the dotted line position, the standard may be swung on its pivot 19 by the forward draft and removed from the ground to replace the plow point or detach the standard from the frame.

In Figures 5 and 7 a plow attachment capable of use in connection with the device above described is shown and comprises an angularly extending plate 30, in parallel relation to the rear side 5 of the frame on which it bears. The plate 30 is provided with short equally spaced standards 31 and eyes 32 corresponding to the extensions 29 and eyes 20 of the standards 18 to permit attachment of the plate to the pivots 19 of the frame. A plurality of spaced vertical plow standards 32^a are secured to the plate 30 and adapted to carry

any suitable type of plow point, shovel, or other earth working element. By this arrangement the standards 18 may be removed and replaced by the plow attachment 30, 31 and 32^a and retained in its operative position by the coaction of the pivots 19 and bars 27.

In the accompanying drawing, I have illustrated my invention embodied in one form by way of example, and which in practice has been found to be highly satisfactory in obtaining the desired results. It will be obvious however that other embodiments may be adopted, and that various changes in the details of construction may be resorted to by those skilled in the art without departing from the spirit and scope of the invention. It is furthermore understood that the invention is not necessarily limited or restricted to the precise elements shown except in so far as such limitations are specified in the subject matter being claimed.

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

1. In an implement of the class described, a supporting beam formed of spaced members in parallel relation, a plow standard extending at the upper end between said beam members and hingedly coupled thereto, a rigid stop member between the beam members and spaced from the standard, and a locking member pivoted intermediate the ends thereof between said beam members and bearing at its ends when in one position against the standard and against the rigid stop member.

2. In an implement of the class described, a supporting beam formed of spaced members in parallel relation, perforated ears depending from said beam members and having a pivot pin extending therethrough, a rigid stop between said beam members and spaced from said ears, a plow standard extending at its upper end between said beam members, a perforated lug carried by said standard and receiving the pivot pin of said ears, and a locking member pivoted intermediate the ends thereof between said beam members and bearing at its ends when in one position against the standard and against the rigid stop member.

3. In an implement of the class described, a plurality of beams in parallel relation and each comprising spaced parallel members, perforated ears depending respectively from said spaced beam members and having pivot pins extending therethrough, a standard extending at its upper end between each of said coupled beam members, a stop member between each of said beam members and spaced from the standards, and a locking member pivoted intermediate the ends thereof between said beam members and

bearing at its ends when in one position against the standard and against the stop member.

4. In an implement of the class described,
5 a supporting beam, a plow standard swinging at the upper end upon said beam, a rigid stop member attached to said beam and spaced from the standard, a locking

member pivoted intermediate the ends of said beam and bearing at its ends when in one position against the standard and 10 against the rigid stop member.

In testimony whereof, I affix my signature hereto.

CLAUDE L. COMER.