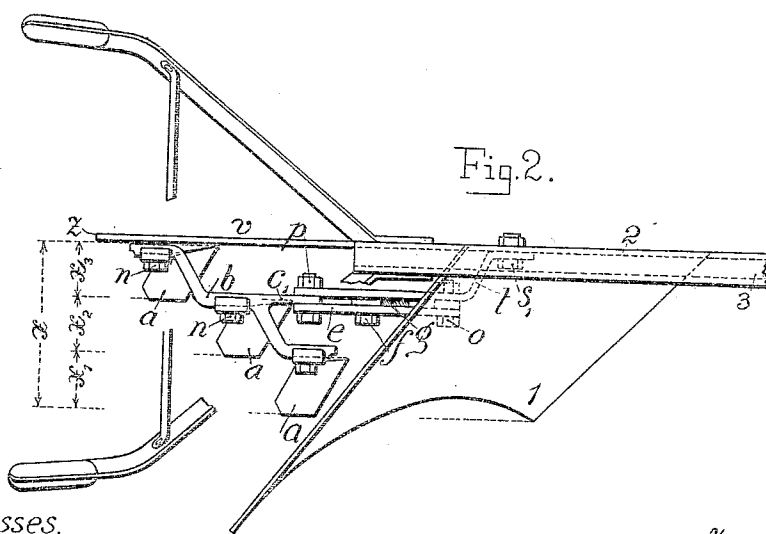
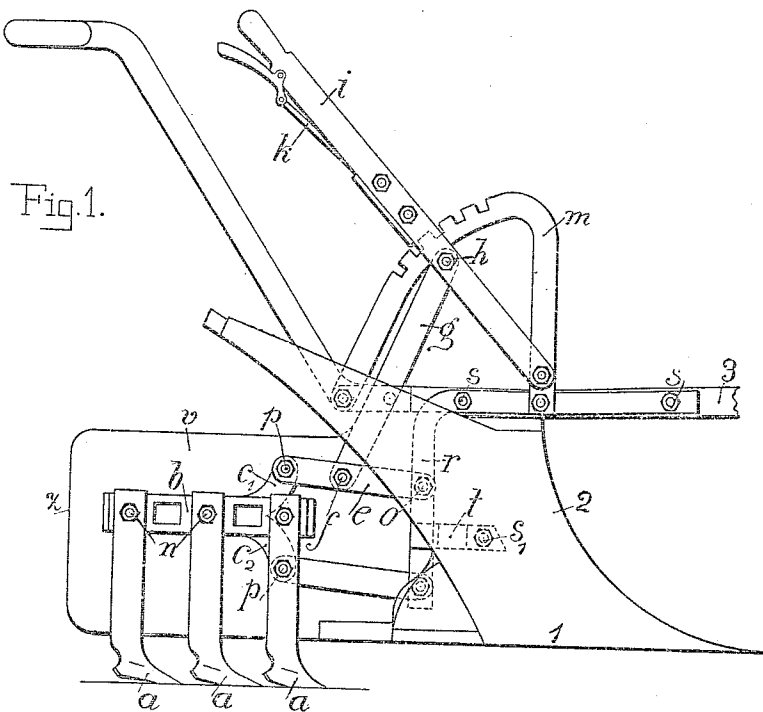


953,686.

V. O. DEYL.
GRUBBER FLOW.
APPLICATION FILED OCT. 10, 1908.

Patented Apr. 5, 1910.



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UNITED STATES PATENT OFFICE.

VÁCLAV OTOKAR DEYL, OF VINOR, PRAGUE, AUSTRIA-HUNGARY.

GRUBBER-PLOW.

953,686.

Specification of Letters Patent.

Patented Apr. 5, 1910.

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To all whom it may concern:

Be it known that I, VÁCLAV OTOKAR DEYL, a subject of the Emperor of Austria-Hungary, residing at Vinor, Prague, Bohemia, Austria-Hungarian Empire, have invented certain new and useful Improvements in Grubber-Plows, of which the following is a specification.

Grubbers have already been constructed for plows, by means of which the soil is stirred or loosened to a considerable depth during plowing, in such manner that the upper fertile soil remains at the top and is not mixed with the loosened subsoil. Such grubbers, however, have numerous defects. Thus it is extremely difficult and tedious to regulate the depth to which the soil is to be stirred; also the knives or tines at different depths of working present a different angle to the soil and thus push the latter before them and do not maintain their position in it. Furthermore, such implements do not operate throughout the entire width of the furrow.

The subject of my invention is a grubber for plows, with which the above-mentioned defects are entirely overcome. The shares operate over the entire surface of the lower layers of soil, can be regulated instantly and always lie at the same angle to the soil.

In the accompanying drawing, Figure 1 is a side elevation of the grubber, and Fig. 2 a plan thereof.

The implement consists of a plurality of small shares *a*, the number and size of which depend upon the width of the furrow and the character of the soil, and the total operative width is equal to the operative width of the plow-share 1. The shares *a* are secured by screws *n* to the frame *b*, which is disposed in opposite direction to the cutting-edge of the plow-share 1, and is of such form that the shares *a* can be set stepwise, so that each lies behind but somewhat laterally of the preceding one. When the grubber comprises for instance three shares *a*, each of these latter will, as can be seen from Fig. 2, stir up full one-third (x_1 , x_2 , or x_3) of the entire width (x) of the furrow made by the plow-share 1, so that the subsoil is thoroughly stirred and loosened.

The frame *b* to which the shares *a* are secured is connected by means of members arranged in the manner of a parallelogram on the one hand with the plow-beam 3 and body 2, and on the other hand with an ad-

justment-device. For this purpose the frame presents two arms c_1 , c_2 of which the former c_1 trends upward and the latter c_2 downward. Parallel bars *e* are pivoted to the arms c_1 , c_2 by pins *p* and are connected at the other end by pins *o* with the arm *r*. The latter is rigidly secured at one end to the plow-beam 3 by bolts *s*, and at the other end with the plow-body 2 by means of an arm *t* and bolt s_1 . The upper bar *e* is connected by a rod *g* and pins *f*, *h*, with the adjusting-lever *i*. This lever *i* is furnished with a catch-device *k*, by means of which the lever can be adjusted with the aid of the notched arc *m*, secured to the plow-beam 3.

On commencing work the grubber is so adjusted that the cutting edges of the shares *a* lie level with the cutting edge of the plow-share 1. Immediately the plow-share enters the soil, however, the adjusting-lever *i* is depressed the parallel bars *e* being thus shifted, so that the shares *a* enter the soil below the furrow and loosen the subsoil, which is thus raised above the shares *a*.

The provision of the share-frame *b* connected with the plow-beam in the manner already described, enables the shares *a* in whatever position always to lie at exactly the same angle to the furrow-soil and thus always to enter the soil properly at whatever depth of work. In this manner easy working of the implement is insured. The peculiar share-frame *b* in combination with the parallel bars *e*, the adjusting-lever *i* and catch-devices *k*, *m* render it possible to bring the shares *a* into any desired position immediately, simply by operating the lever *i*.

To the plow-body 2 there is secured a metal guard *v*, which trends backward somewhat in the form of a vane, its rearward edge *z* projecting beyond the backmost share *a*. This guard is for the purpose of preventing loose earth and especially the straw manure from falling into the furrow between the shares *a*, whereby the latter are kept clear and more easy working of the implement insured.

Having thus described my invention, I claim as new—

1. In a plow, a beam, and a body and share carried thereby, a frame presenting arms bifurcating in a vertical plane, a pendent arm secured to the beam and body, parallel bars pivoted at one end respectively to the bifurcating arms and at the other end to the pendent arm, whereby a structure

having the form of a parallelogram is constituted, grubber-shares secured to the frame in stepwise disposition in a horizontal plane, in such manner that the total operative-
5 width of the grubber-shares is equal to the operative-width of the main share, and means for adjusting the frame, substantially as described.

2. In a plow, a beam, a body and share
10 carried thereby, a frame secured to the beam rearward of the share, a plurality of grubber-shares attached stepwise to the frame, the total operative width of the grubber-

shares being equal to the operative-width of the main share, and a vane-shaped guard 15 secured to the body and trending backward its rearward edge projecting beyond the backmost grubber-share, substantially as described.

In testimony whereof I affix my signature 20 in presence of two witnesses.

VÁCLAV OTOKAR DEYL.

Witnesses:

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