No. 742,872. PATENTED NOV. 3, 1903.

A. M. JACOBS.

COMBINED ROOT KNIFE AND SUBSOILER.

APPLICATION FILED JULY 20, 1903.

NO MODEL.

Fig. 1.

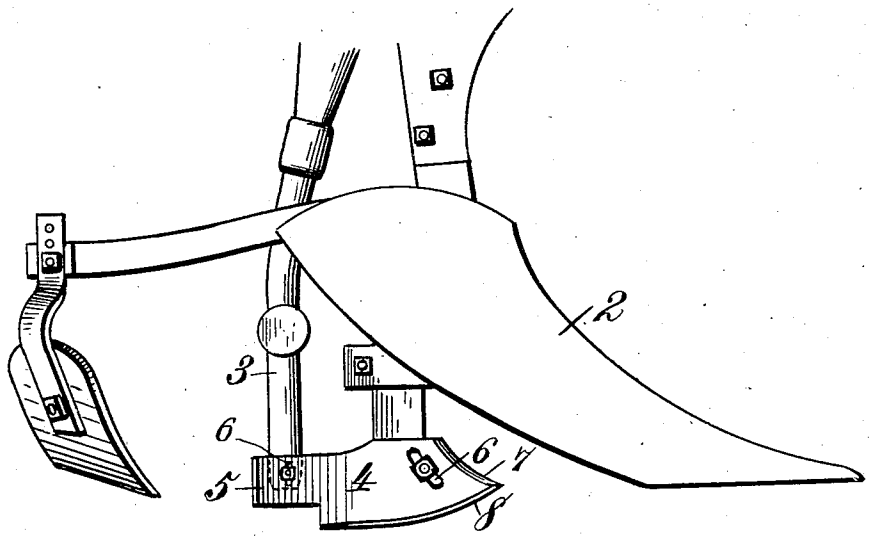


Fig. 2.

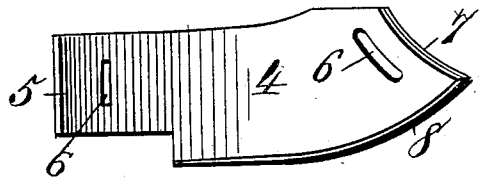
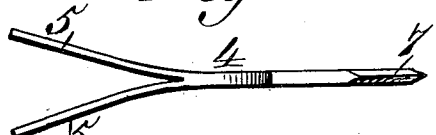


Fig. 3.



Witnesses,
Robert Everett,
James L. Norris Jr.

Inventor,
Andrew M. Jacobs,
By James L. Norris
Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 742,872. Patented November 3, 1903.

UNITED STATES PATENT OFFICE.

ANDREW M. JACOBS, OF CLIMBING HILL, IOWA.

COMBINED ROOT-KNIFE AND SUBSOILER.

SPECIFICATION forming part of Letters Patent No. 742,872, dated November 3, 1903.

Application filed July 20, 1903. Serial No. 166,300. (No model.)

To all whom it may concern:

Be it known that I, ANDREW M. JACOBS, a citizen of the United States, residing at Climbing Hill, in the county of Woodbury and State of Iowa, have invented new and useful Improvements in a Combined Root-Knife and Subsoiler, of which the following is a specification.

This invention relates to a combined root-knife and subsoiler adapted especially for attachment either to riding or walking listers, although I do not intend to limit myself to this particular use of the invention.

By virtue of the device when attached to a lister the seeds sown cannot be washed out. There is no possibility of the said device catching in stubble, roots, or the like to retard the progress of the lister, and the latter can be advanced steadily and accurately. The improved article is simple, light, yet thoroughly strong, and can be inexpensively and easily manufactured.

In the drawings accompanying and forming a part of this specification I have shown the device in one convenient adaptation, which I will describe at length in the following description, the novelty of the invention being made the basis of the claims succeeding such description.

Referring to said drawings, Figure 1 is a side elevation of a portion of a lister of well-known form equipped with an attachment or combined root-knife and subsoiler involving the invention. Fig. 2 is a similar view of the attachment *per se*. Fig. 3 is a plan view of the same.

Like characters refer to like parts throughout the several views.

In Fig. 1 I have shown a portion of a lister of familiar construction, having the usual moldboard 2, seed chute or tube 3, and other parts which I do not deem necessary to be particularly referred to, as they form no part of the invention.

The combined root-knife and subsoiler is denoted in a general way by 4 and is arranged to travel in a previously and suitably formed furrow back of the moldboard 2, and it consists of a vertically-disposed somewhat elongated blade made from any suitable material, such as steel. The said blade 4 is split or divided back of its middle to form the diverging symmetrically-arranged wings 5, situated at opposite sides of the seed tube or chute 3, at the discharge end of the latter, so as to prevent the entrance of earth, roots, &c., into the outlet of the tube. In other words, these wings 5 constitute an effective guard for the outlet of the seed-tube.

The blade 4 is adjustably connected with the framework of the lister in any desirable way. For example, it may have elongated slots at its toe and heel, each denoted by 6, to receive bolts or their equivalents supported by such framework. In this way the toe and heel can be independently or simultaneously raised or lowered to meet different conditions.

The toe of the blade is of pointed or acute form, such toe coinciding substantially with the longitudinal median line of the blade, thereby to afford the least possible resistance in its passage through the soil, and such point is produced in the present case by the mergence of the concave and convex faces extending along the upper and lower sides of the blade and indicated, respectively, by 7 and 8. The concaved face 7 is beveled to form a cutting edge for severing, and hence destroying, roots in the furrow, while the office of the convex portion is to make a seed-channel into which the seed can fall, the cutting edge mentioned severing all roots, so as to leave the seed-channel free of the same. The body or main portion of the blade is of course in a vertical plane intersecting the axis of the seed-tube. The channel-forming portion or lower convex edge 8 of the blade is situated in practice below the moldboard, and the relation between the two parts may be regulated by the adjustment of the blade, the latter going deeper into heavy soil than light ones.

The wings 5 act as auxiliary moldboards to throw the roots cut by the knife-blade 7, the stubble, and the like out of the furrow, so that the same cannot enter the seed-channel to ultimately interfere with the growth of the vegetation.

Having thus described the invention, what I claim is—

1. The combination with a lister having a moldboard, of a vertically-disposed blade behind the moldboard having a root-cutting edge and a seed-channel-forming portion.

2. The combination with a lister having a moldboard and a seed-tube, of a vertically-disposed blade behind the moldboard having a root-cutting edge, a seed-channel-forming portion, and diverging wings between which the delivery end of the seed-tube is located.

3. A blade having concave and convex faces merging at a point at the front end thereof, the concave portion having a cutting edge.

4. A blade having concave and convex faces merging at a point at the front end thereof, the concave portion having a cutting edge, and the rear of said blade having diverging wings.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW M. JACOBS.

Witnesses:
HERMAN SCHEELHAASE,
JACOB L. FOLTZ.