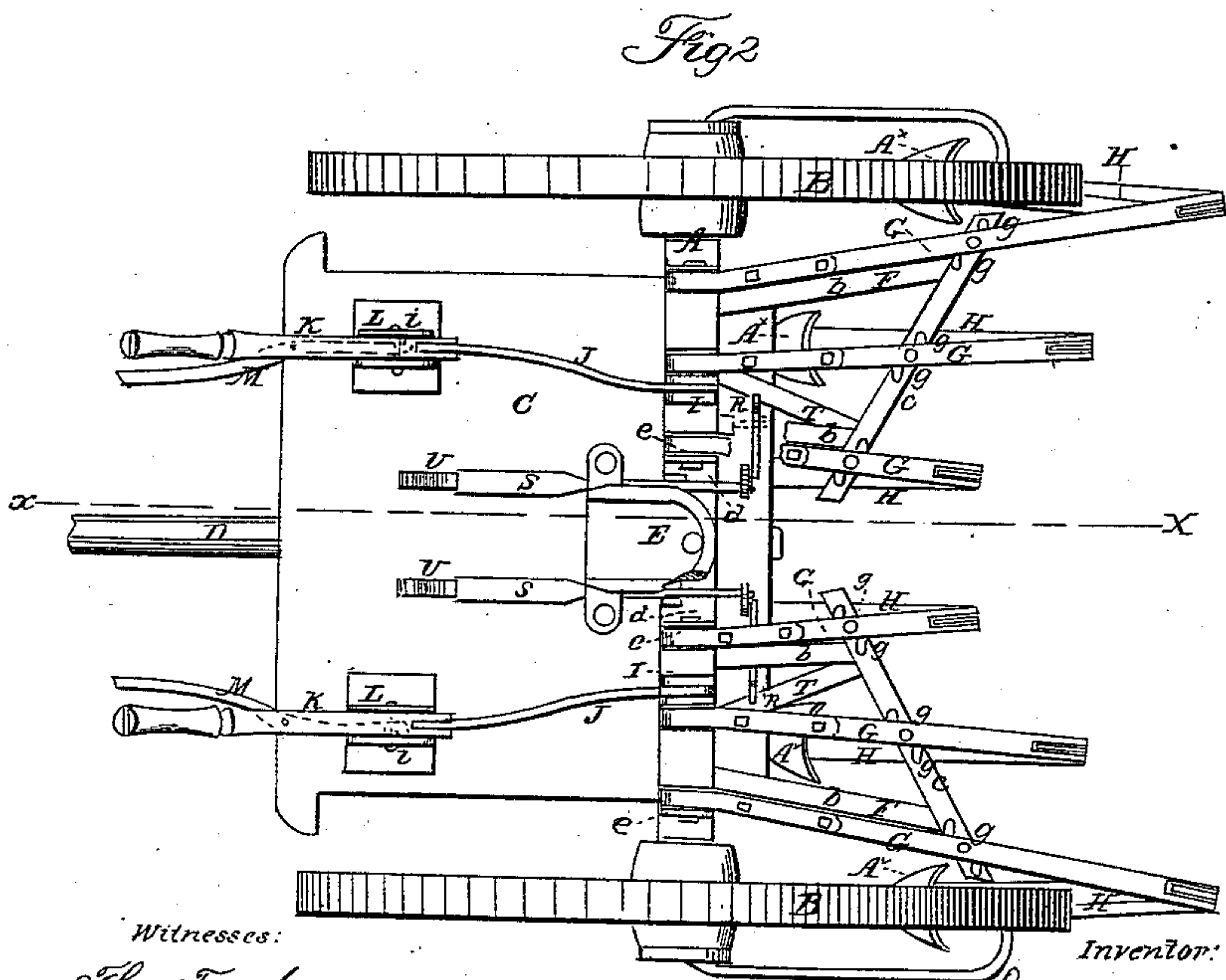
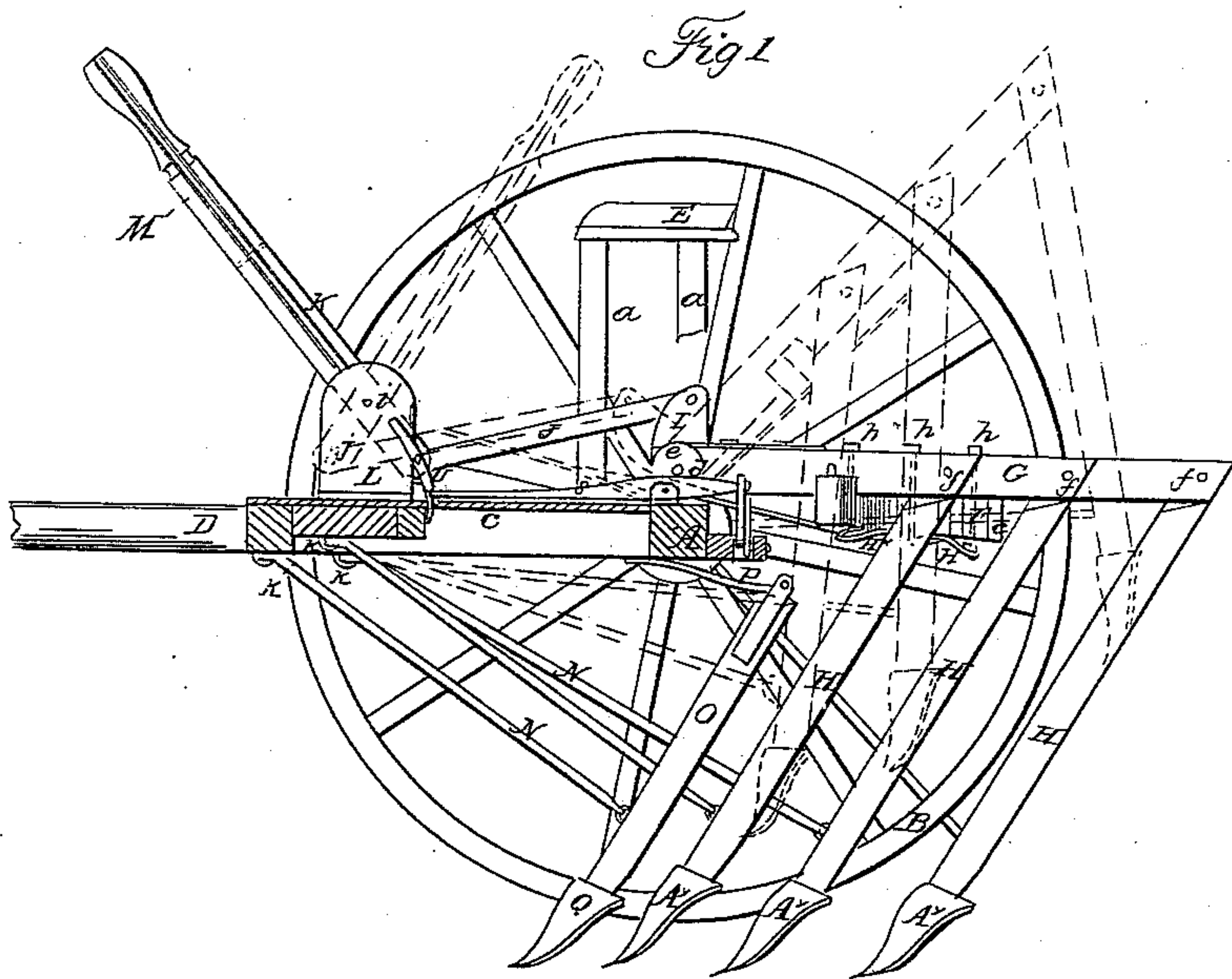


E. H. KNIGHT.

Wheel-Cultivator.

No. 64,542.

Patented May 7, 1867.



Witnesses:

Theo Fische
Wm Freun

Inventor:

Edmund H Knight
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United States Patent Office.

EDMOND H. KNIGHT, OF UNADILLA, MICHIGAN.

Letters Patent No. 64,542, dated May 7, 1867.

IMPROVEMENT IN CULTIVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, EDMOND H. KNIGHT, of Unadilla, in the county of Livingston, and State of Michigan, have invented a new and improved Cultivator; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

This invention relates to a new and improved cultivator for general purposes, but more particularly adapted for cultivating crops grown in hills or drills. The object of the invention is to obtain a device for the purpose specified which may be manipulated with the greatest facility by the rider and driver, and which will admit of the shovels or teeth rising, when meeting with obstructions, so that they may readily pass over the same, and thereby avoid any parts of the machine being broken or injured thereby. In the accompanying sheet of drawings—

Figure 1 is a side sectional view of my invention taken in the line *x x*, fig. 2; and

Figure 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

A represents an axle having a wheel, B, on each end of it, and a framing attached to and projecting from its front side, on which a platform, C, is secured. D is a draught-pole extending from the axle and the platform framing, and E is the driver's seat placed on uprights, *a*, secured to the platform and axle. On the axle A there are secured two frames, F F, composed each of two bars, *b b*; connected at their outer ends by an oblique bar, *c*, the inner ends of the bars *c* being nearer the axle A than the outer ends, as shown clearly in fig. 2. These frames F are secured to the axle by means of bolts *d* which pass through lugs *e* on the axle, the frames being allowed to work freely on the bolts. These same bolts *d* also secure each three beams, G, to the axle. These beams are allowed to work freely on the bolts, and are independent of each other, and to the outer end of each beam a standard, H, is attached by a pivot, *f*, each standard having a plough or shovel, A^x, secured to its lower end. The beams G are fitted between lugs *g* on the oblique bars *c c*, said lugs serving as guides to the beams. Each beam G is connected by a rod, *h*, to a spring, H^x, underneath the oblique bars *c*, said springs having a tendency to keep the beams G down on the oblique bars *c*, and also to keep the shovels or teeth to their work. On the inner part of each frame F there is a vertical arm, I, and to the upper parts of these arms the rear ends of rods J are pivoted, the front ends of the latter being pivoted to the lower ends of levers K, the fulcrum of which are in sockets L on the platform C. These levers K are within convenient reach of the driver on his seat E, and each lever has a catch, M, attached, which, when the upper ends of the levers are drawn towards the driver's seat, catch in a hole, *j'*, in one side of the sockets, and hold the frames F and beams G in an elevated state, as shown in red in fig. 1. The lower part of each standard H is braced by a rod, N, the front ends of said rods being connected by joints, *k*, to the front part of the platform framing. In addition to the standards H, there is a central standard, O, the upper end of which is attached to a spring, P, the latter being secured to the under side of the platform framing, as shown clearly in fig. 1. This standard O has a shovel or tooth, Q, secured to its lower end, but this standard and shovel, or plough, is used only in cultivating fallow ground. In cultivating crops grown in hills or drills, such as corn, &c., the standard O must be removed or detached.

When the machine is at work the ploughs or shovels A^x are kept down to their work by catches R R, connected to foot-levers S S, the catches R being kept over bars T at the under sides of the frames F by means of spring-catches V on the platform C. When it is designed to liberate the frames F and raise the shovels or ploughs A^x, the spring-catches V are shoved forward by the feet of the driver free from the foot-levers S S, and springs *a^x*, under said levers, raise the latter, and free the catches R from the bars T. The driver then draws back the upper ends of the levers K until the catches M engage with the sockets L, and the frames F and shovels or ploughs are held in an upright position. In order to lower the shovels or ploughs to their work, the catches M are freed from the socket L, the upper ends of the levers K shoved forward, in order to depress the frames F F, and the foot-levers S S are depressed until caught by the spring-catches V. In the

event of a shovel or plough A^x coming in contact with an obstruction of any kind, they are permitted to rise and pass over it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The beams G, having plough or shovel standards H pivoted to them, in combination with the frames F F, the beams and frames being secured to the axle A, and used in connection with hand-levers K, foot-levers S S, and catches R V, all arranged to operate substantially in the manner as and for the purpose set forth.
2. The springs H^x, connected with the beams G, and attached to the frames F, substantially as and for the purpose specified.

EDMOND H. KNIGHT.

Witnesses:

W. S. LIVERMORE,
O. H. OBERT.