

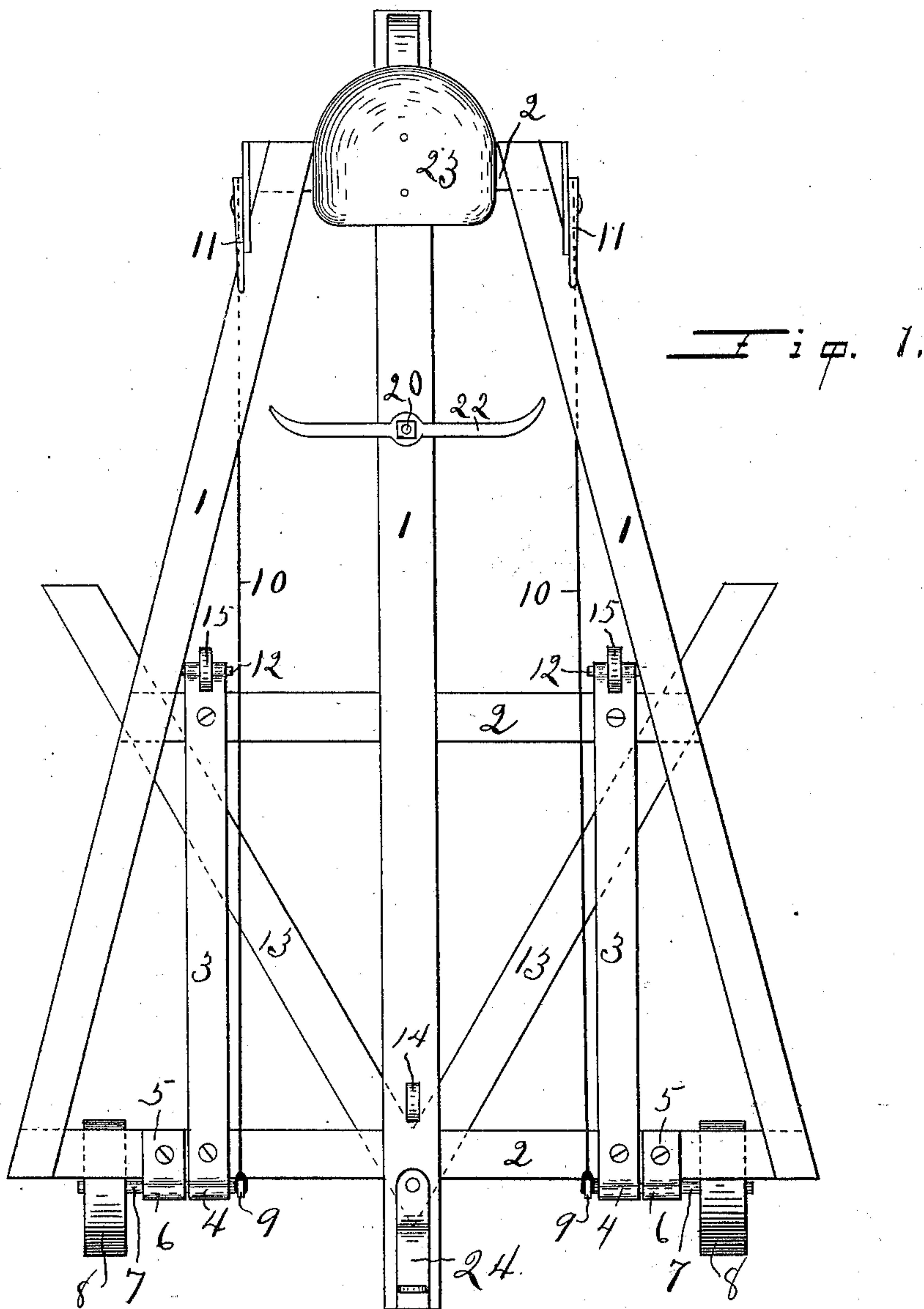
(No Model.)

2 Sheets—Sheet 1.

C. H. MALKEMUS.  
SULKY HORSE HOE.

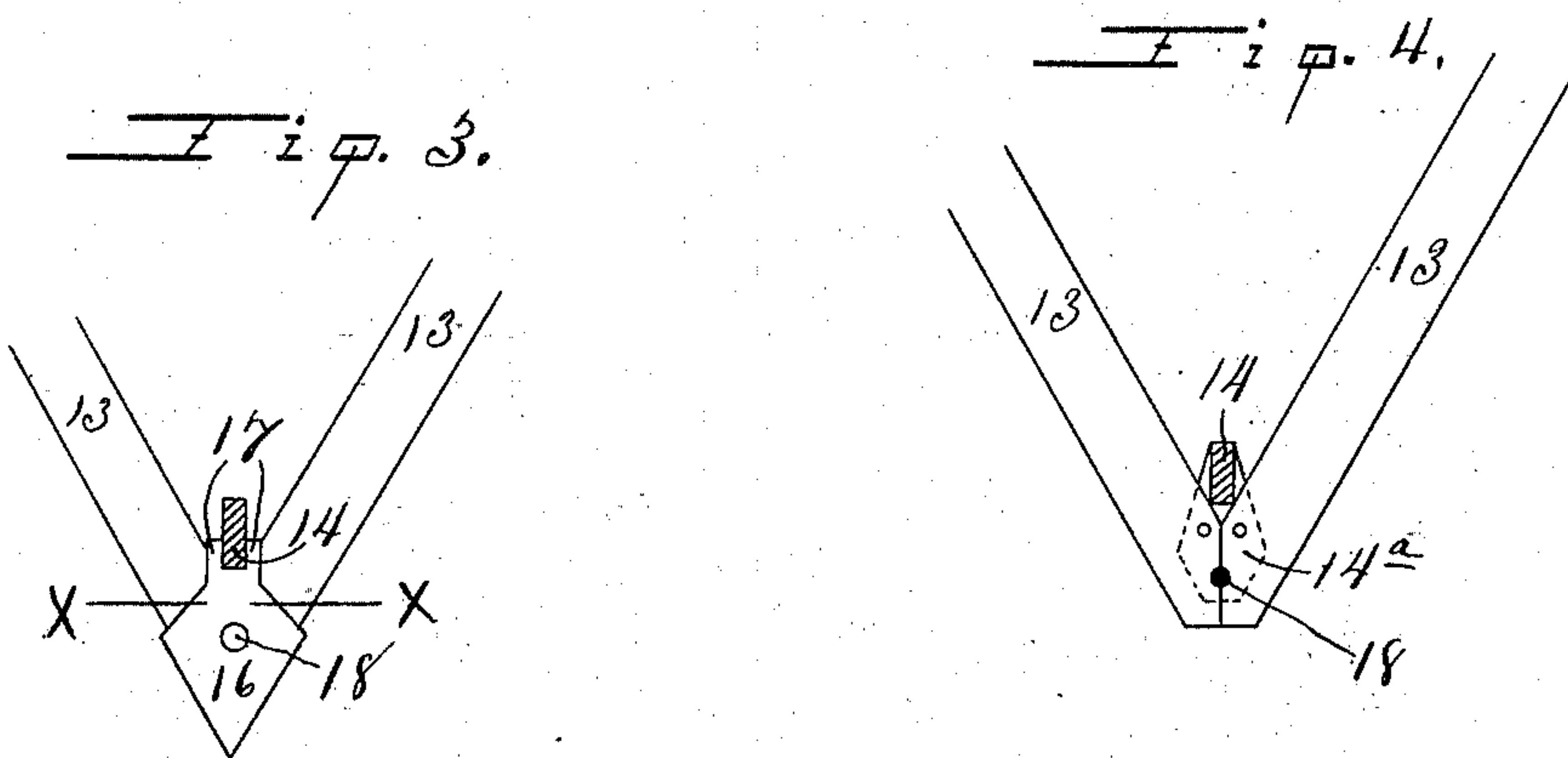
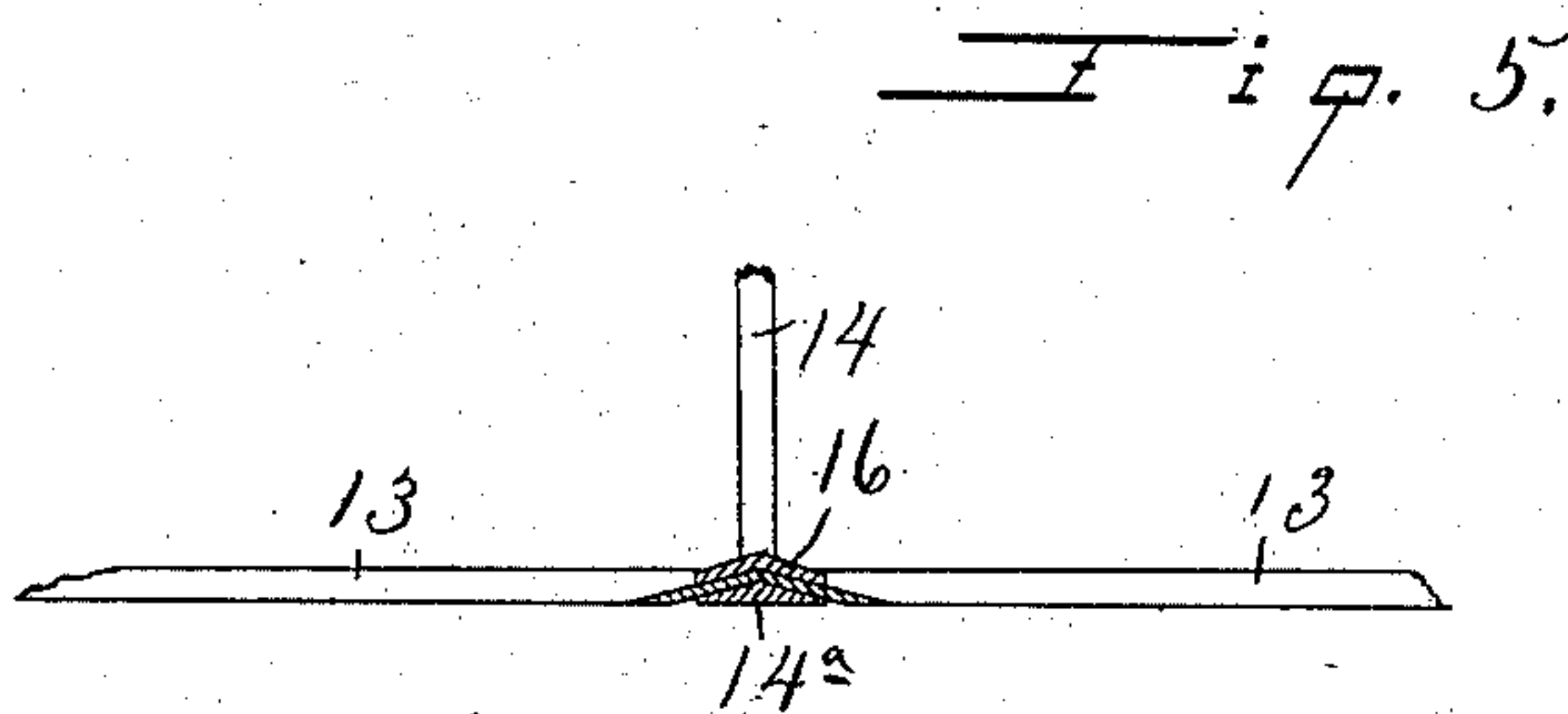
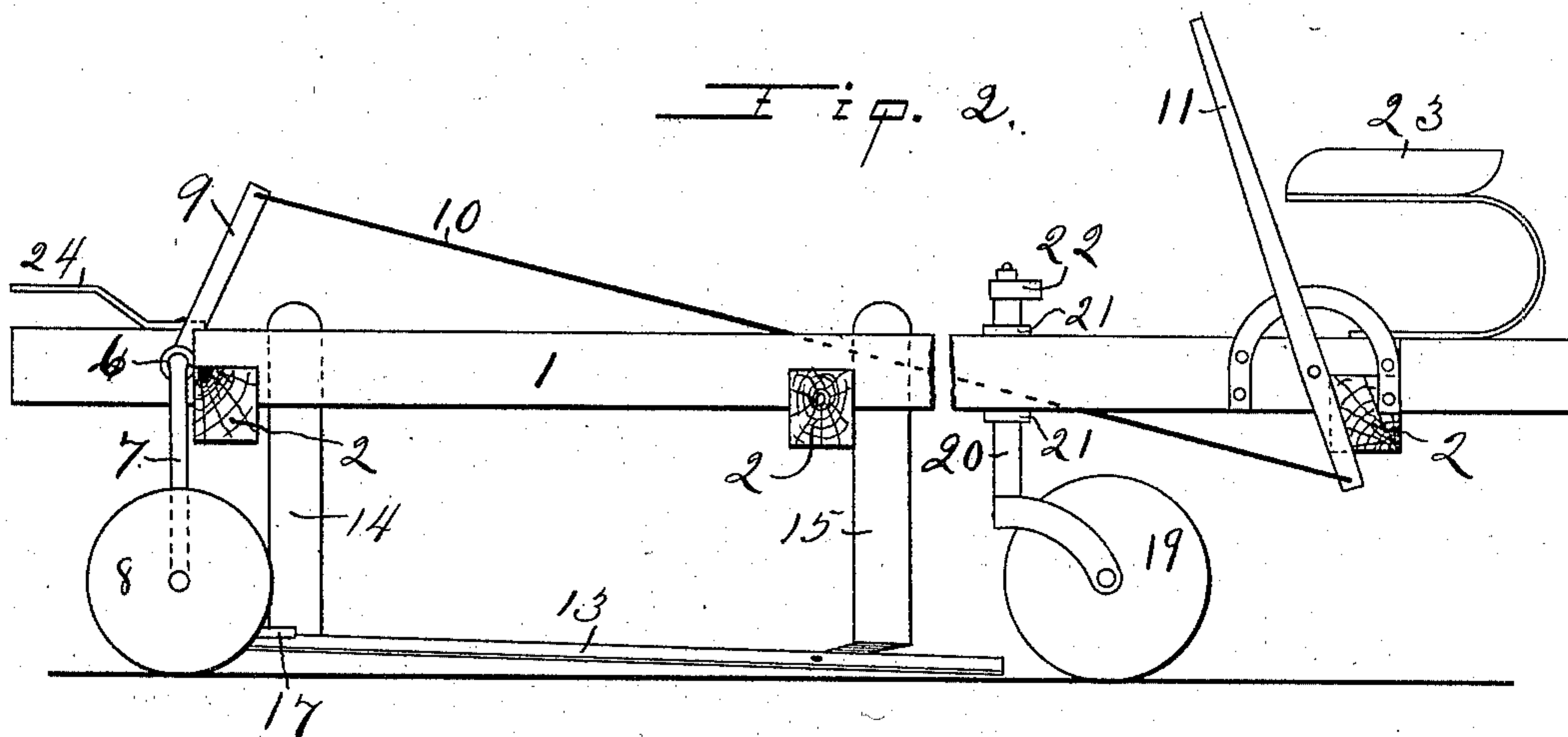
No. 598,603.

Patented Feb. 8, 1898.



Witnesses  
Molby & Haynes.  
L. B. Hodge.

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Charles H. Malkemus  
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# UNITED STATES PATENT OFFICE.

CHARLES H. MALKEMUS, OF LINDEN, CALIFORNIA, ASSIGNOR TO GEORGE O. McQUEEN, OF STOCKTON, CALIFORNIA.

## SULKY HORSE-HOE.

SPECIFICATION forming part of Letters Patent No. 598,603, dated February 8, 1898.

Application filed June 21, 1897. Serial No. 641,733. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. MALKEMUS a citizen of the United States, residing at Linden, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Sulky Horse-Hoes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in sulky horse-hoes such as are used in cutting and uprooting weeds; and my object is to furnish an implement which may be drawn by horses and which may be used to effectually and expeditiously destroy weeds and other undesired vegetation among trees, as in a fruit-orchard.

It consists of a V-shaped frame mounted on suitable wheels, levers and rods for operating the wheels, a V-shaped knife, and such other devices and combination of devices as will hereinafter be more fully described, and particularly pointed out in the claims hereunto annexed.

Referring to the accompanying drawings, Figure 1 is a top view of my improved sulky horse-hoe. Fig. 2 is a left-hand side elevation of the same. Fig. 3 is a top view of the front end of the knife, having the point attached thereto. Fig. 4 is a top view of the same with the point removed. Fig. 5 is a sectional view through line X X, Fig. 3.

Similar figures of reference indicate corresponding parts in the several views.

1 represents the longitudinal frame-beams, of which there are three. The rear ends of the outside beams are nearer together than the front ends, and such beams 1 are stayed by cross-beams 2, arranged at suitable intervals on the underside of the same. A strap of metal 3 is suitably located longitudinally between the beams 1 and attached to the cross-beams 2. Such straps 3 are provided with loops 4 at their front ends and are provided with short straps 5, having loops 6 similar to the loops 4, which are located at the

side of the straps 3. An axle 7 is inserted in each of the loops on either side, and such axle 7 is angled so as to extend downwardly and enter the hub of a wheel 8, which may be of any suitable size. From the reverse ends of the axles 7 levers 9 extend upward and are adapted to engage with rods 10, which extend rearwardly and engage with the lower ends of levers 11, which are suitably pivoted to either side of the frame, near the rear end of the same. The rear ends of the straps 3 are bifurcated, and such bifurcated ends are looped so as to accommodate pins 12 for the purpose as will be shown.

13 represents a V-shaped knife, which is supported at the front end by a standard 14, which is inserted upwardly through the center longitudinal beam 1, where it is fastened in any suitable manner.

The rear ends of the knife 13 are supported by similar standards 15, which have their lower ends inserted under the knife and rigidly attached thereto. Such standards 15 then extend upward between the bifurcated ends of the straps 3 and are attached thereto by the pins 12.

The knife 13 is arranged in two parts, which are joined on the foot 14<sup>a</sup> of the standard 14, as shown in Fig. 4.

The blades of the knife 13 are arranged so as to form two sides of an equilateral triangle, with the apex in front. A point 16, of diamond shape and having lugs 17 attached to the rear end of the same, is attached on the top side of the point of the knife 13 by a bolt 18. Such lugs 17 are adapted to engage with either side of the standard 14. A swivel or tiller wheel 19 is suitably journaled in a standard 20, which is inserted in the center longitudinal beam 1, near the rear end of the same, and maintained in suitable adjustment by means of collars 21, which are arranged above and below the beam and comprehend such standard 20. On the top end of the standard 20 a cross-bar 22 is rigidly attached. Such cross-bar 22 is provided with curved ends for the purpose of providing a foot-rest and preventing the operator's feet from slipping off while in the act of turning.

23 represents the seat, which is suitably mounted on the rear end of the frame, and



20 is the draft-iron, suitably attached to the front end of such frame.

The mode of operating my improved sulky horse-hoe is as follows: The standards 14 and 15 having been suitably adjusted so as to regulate the depth desired for the knife to go under ground, the operator grasps the levers 11 and presses the top ends forward, which by means of the connecting-rods and levers press the wheels 8 forward and allows the knife to enter the ground, and while being drawn such knife cuts the weeds just below the top of the ground, thereby killing the same. The operator steers by means of the swivel or tiller wheel 19, which he operates with his feet on the cross-bar 22.

The advantage of having the knife V-shaped is that the draft is not so great as a straight knife arranged laterally under the frame, and also that when rubbish or dry weeds collect on the knife the operator may turn the tiller-wheel to one side, whereupon the weeds will slide from the one side, and by reversing the tiller-wheel the other side of the knife may be cleared.

I am aware that sulky horse-hoes or weed-cutters have been made with a straight knife arranged laterally under the frame; but these are defective, and I therefore do not claim that feature broadly; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a horse-hoe of the class described the combination with a suitable frame of suitable wheels adjustably located at the front end of such frame, a tiller-wheel mounted near the rear end of the frame, a cross-bar mounted on the top of the standard of such wheel, a

suitable seat located on the rear of the frame, an angle-knife mounted on three standards, the three standards adjustably attached to the frame, and the point 16, having the lugs 17, rigidly attached to the forward end of the knife, all arranged and operating substantially as shown and described.

2. In a horse-hoe of the class described a frame having its longitudinal beams arranged in the form of the letter V with the narrow end at the rear, suitable cross-beams arranged under the longitudinal beams, the straps 3 arranged longitudinally on the frame, the axles 7 flexibly inserted in the end of the straps 3, the levers 9 attached to the axles 7, the rods 10 adapted to engage with the top ends of the levers 9, the levers 11, pivotally attached on either side of the frame near the rear end of the same, the swivel or tiller wheel 19 journaled on the lower end of the standard 20, the standard 20 pivotally inserted in the center longitudinal beam 1 near its rear end, the cross-bar 22 rigidly attached to the top end of the standard 20, and the seat 23, in combination with the standards 14 15 inserted in the beam 1 and rear ends of the straps 3, respectively, the knife-blades 13 attached to the standards 14 15, and the point 16 attached to the front end of the blades, all arranged and operating substantially as shown and described.

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

CHARLES H. MALKEMUS.

Witnesses:

MOLBRY HAYNES,  
JOSHUA B. WEBSTER.