

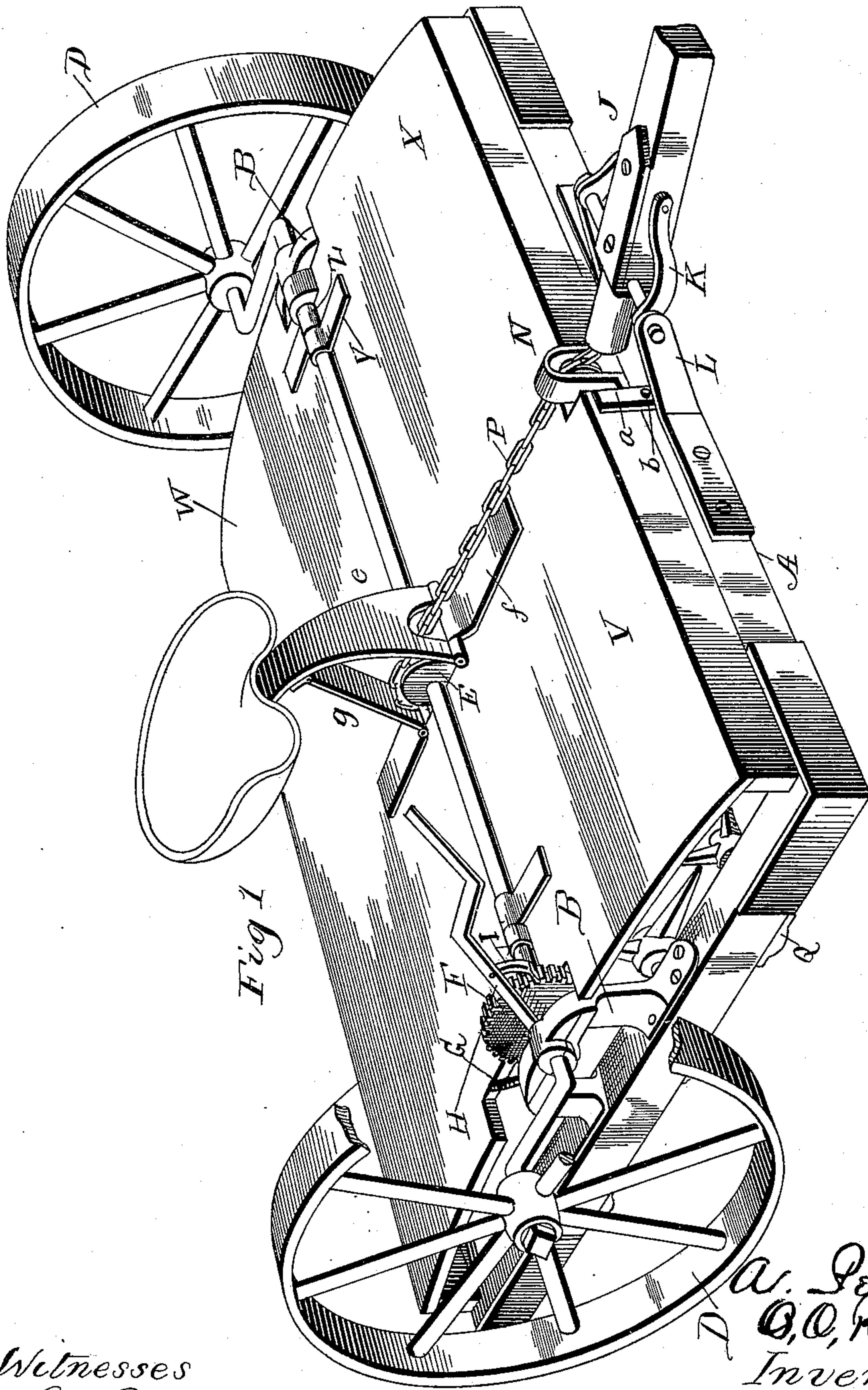
(No Model.)

3 Sheets—Sheet 1.

A. PETERSON & O. O. RAAEN.
CULTIVATOR OR HARROW.

No. 437,450.

Patented Sept. 30, 1890.



Witnesses
C. C. Burdine
A. W. Bishop.

A. Peterson
O. O. Raam
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per
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Attorney.

(No Model.)

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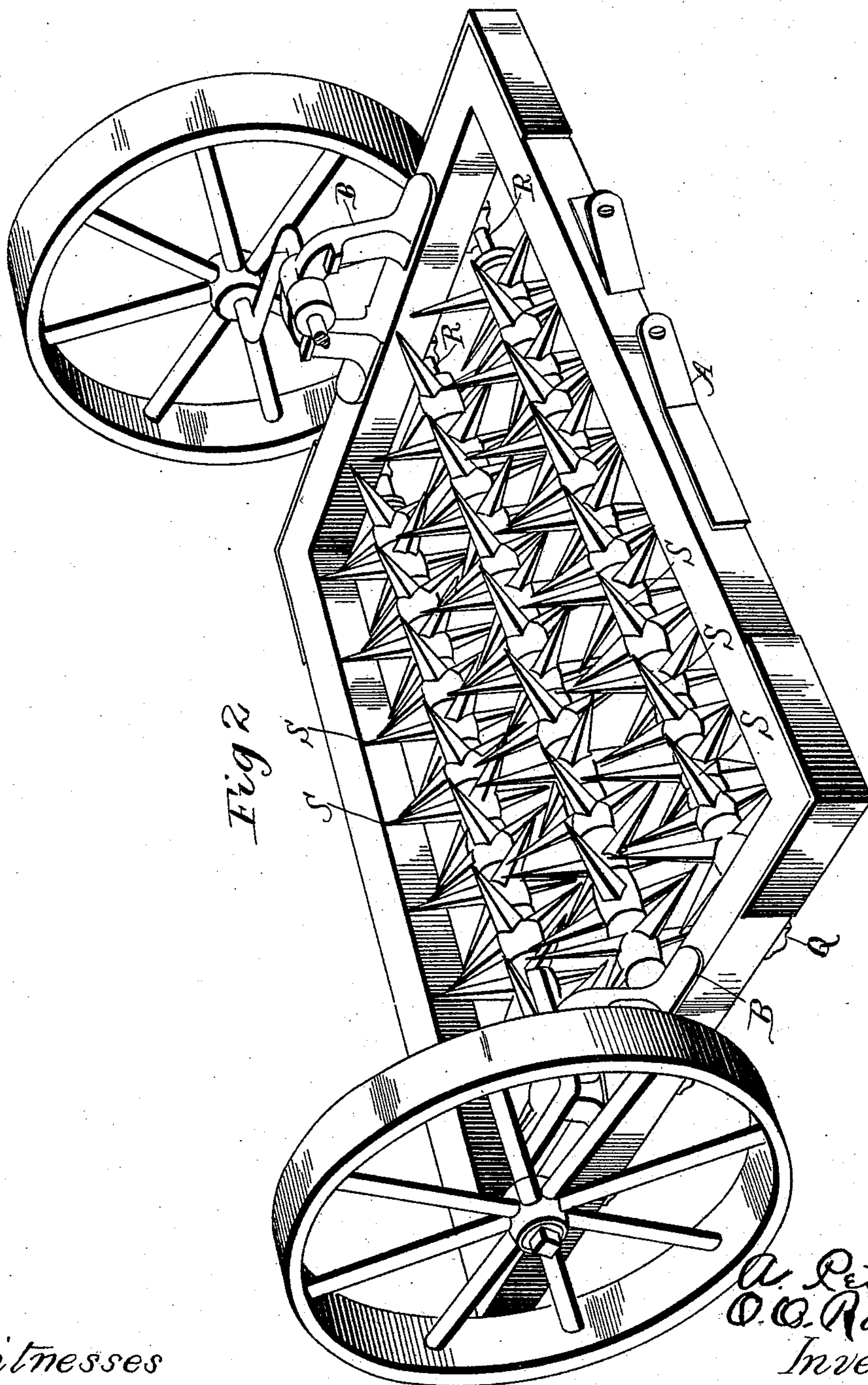


Fig 2

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3 Sheets—Sheet 3.

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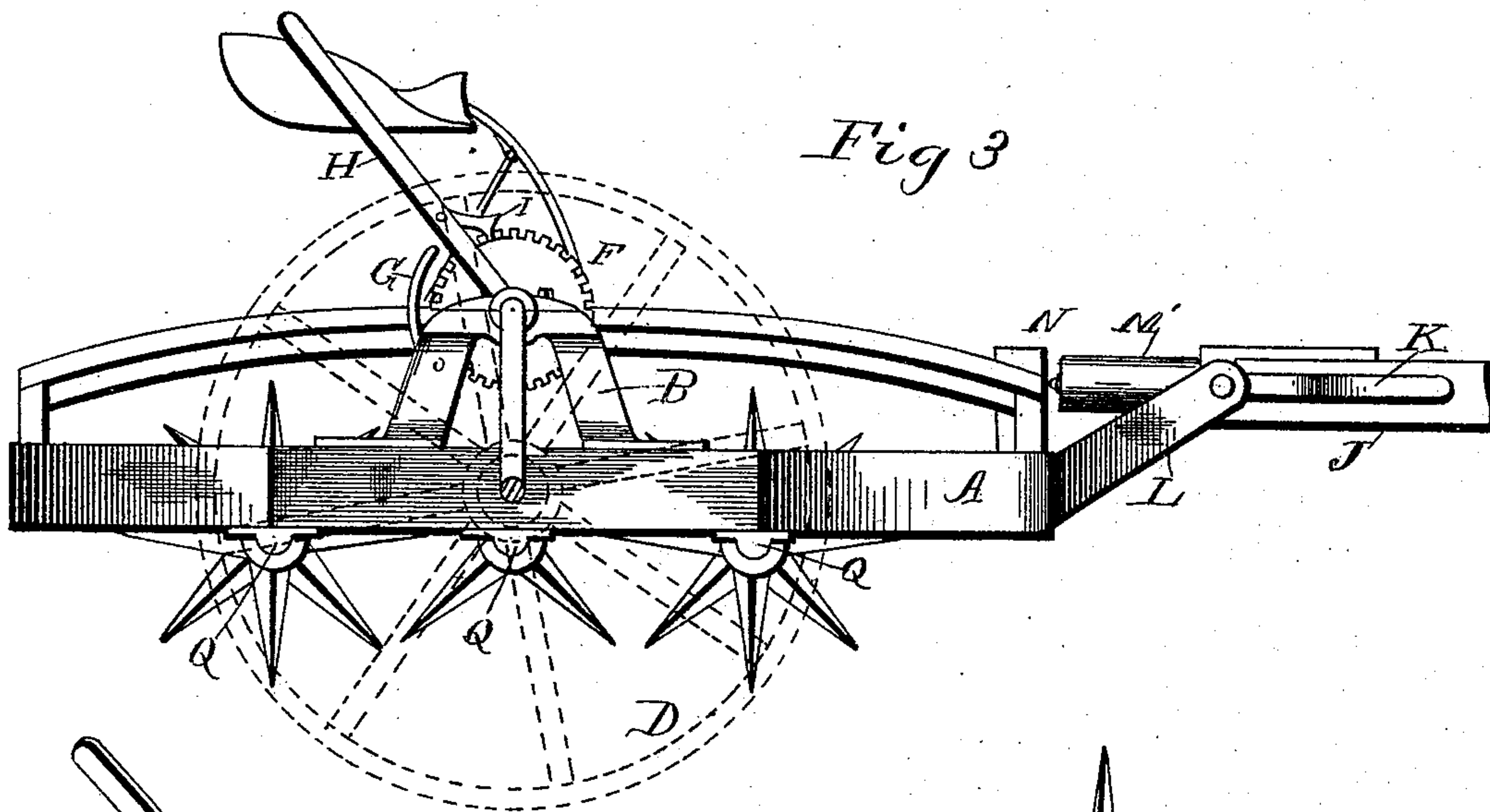


Fig 3

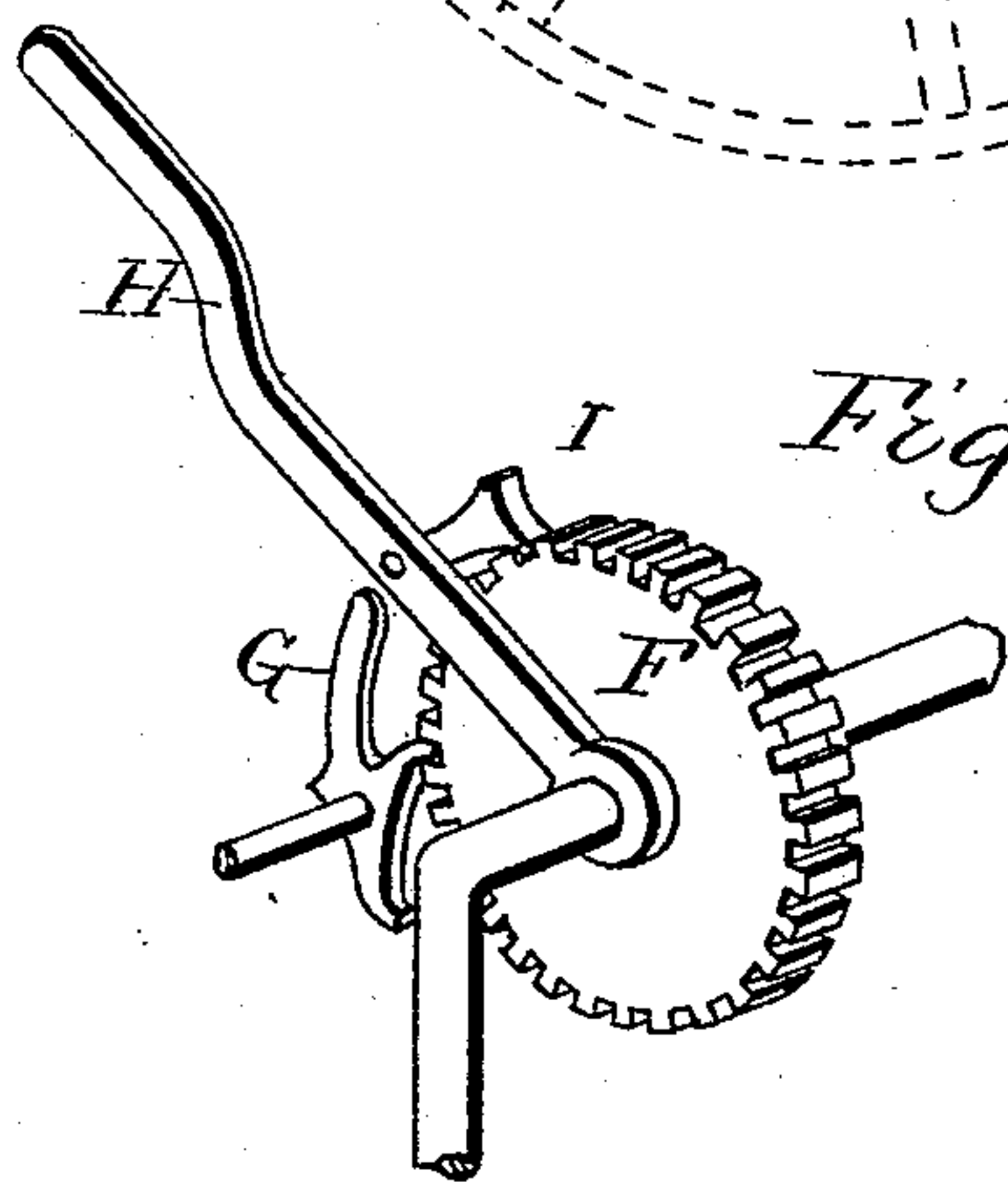


Fig 4

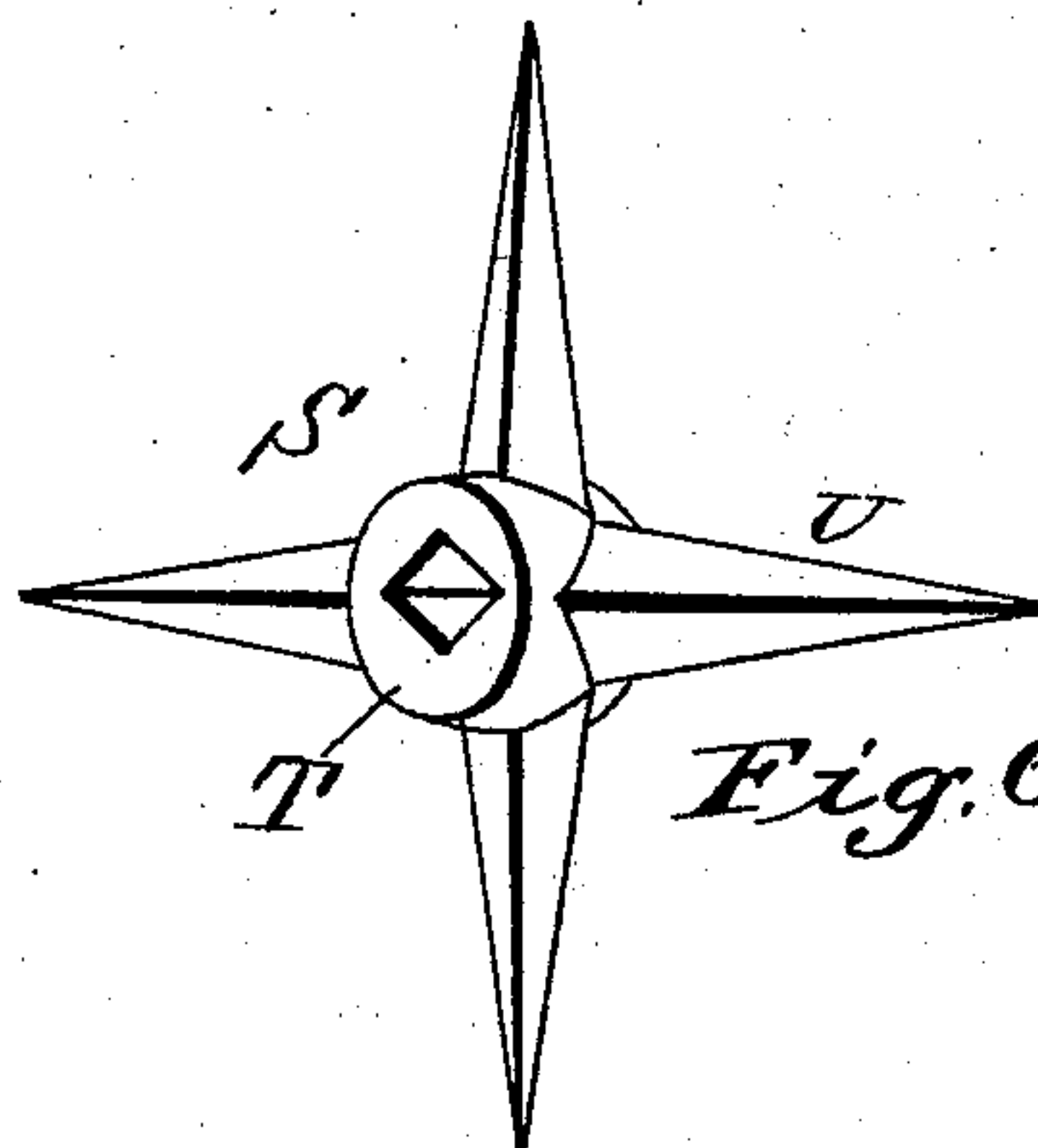


Fig. 6.

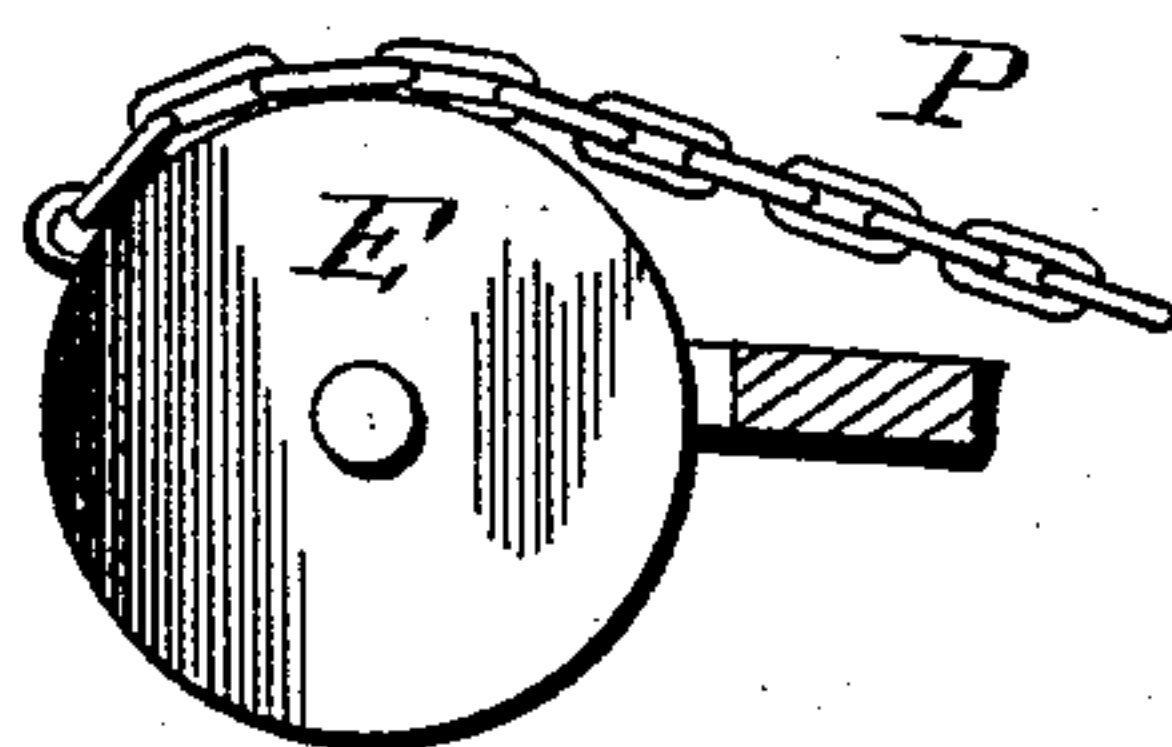
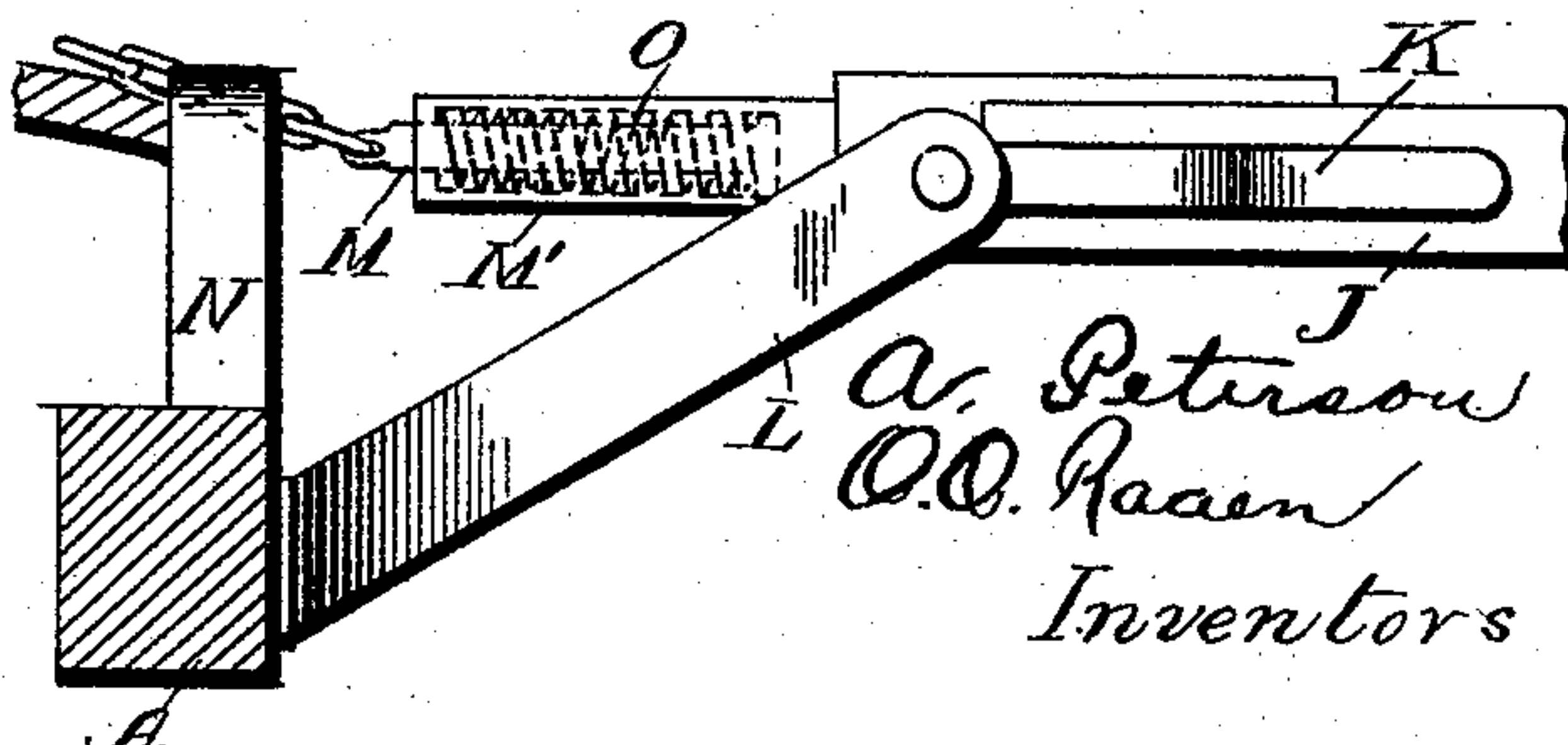


Fig 5



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UNITED STATES PATENT OFFICE.

ANTHONY PETERSON AND OLE O. RAAEN, OF PLACERVILLE, IDAHO.

CULTIVATOR OR HARROW.

SPECIFICATION forming part of Letters Patent No. 437,450, dated September 30, 1890.

Application filed January 27, 1890. Serial No. 338,249. (No model.)

To all whom it may concern:

Be it known that we, ANTHONY PETERSON and OLE O. RAAEN, citizens of the United States and of Norway and Sweden, respectively, residing at Placerville, in the county of Boise and Territory of Idaho, have invented certain new and useful Improvements in Cultivators and Harrows; and we do hereby 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.

Our invention relates to improvements in harrows; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, which fully illustrate our invention, Figure 1 is a perspective view of our improved harrow. Fig. 2 is a similar view with the cover removed. Fig. 3 is a side view. Fig. 4 is an enlarged detail perspective view of the lever and its connections. Fig. 5 is a detail view of the devices for securing the tongue. Fig. 6 is a detail view of one of the rotary teeth.

Referring to the drawings by letter, A designates the frame of the harrow, which is of an open rectangular formation, and B B designate standards, which are secured to the sides of the said frame and in which a cranked axle C is mounted. The carrying-wheels D are mounted on the ends of the cranked axle, and at about the center of the said axle we secure the crank-disk E, the purpose of which will be hereinafter set forth. Adjacent to one of the standards B we secure to the cranked axle a ratchet-disk F, and a double or reversible pawl G is pivoted on the said standards and engages the said disk. The lever H is pivoted to the said standards B and carries a reversible pawl I, which engages the said disk.

The tongue J is provided at its inner or rear end with the diverging arms K, and the said arms are pivoted to the brackets L on the front side of the frame A. A sliding latch M is mounted in a casing M' at the rear end of the tongue, and is adapted to engage a keeper N on the frame. The latch is normally drawn forward, so as to be out of engagement with the keeper, by a spring O, which is secured to the latch within the casing, as shown. A chain P is secured to the latch, and extends

rearward therefrom through the keeper, and is secured to the crank-disk E, so that when the cranked axle is rotated to raise the carrying-wheels the chain will be drawn taut, and the latch thus made to engage the keeper, so as to hold the tongue rigid.

On the under side of the side bars of the frame A we secure the journal-boxes Q, and in the said boxes we mount the ends of the shafts R. The harrow-teeth S are secured on these shafts, and consist of a central body T, having an angular opening through which the shaft may pass, and the radial arms or points U, projecting from the said body. The teeth are arranged on the shafts so that the teeth on the adjacent shafts alternate, and the teeth on each shaft also alternate with each other. We thus provide eight rows of teeth on each shaft, and as the teeth on the adjacent shafts alternate, the ground will be thoroughly harrowed.

A cover V is arranged upon the frame and is composed of two members W X, as shown, the front member W having its rear edge hinged to the axle by the loops Y, encircling the same, and the rear member X having its front edge hinged upon the axle by the similar loops Z, as shown. The free ends of the sections or members of the cover are held to the frame by the spring-latches a, secured to the said sections and engaging the pins b on the frame. The cover is provided with a notch c in its front edge to receive the keeper N, and has the notches d in its side edges to receive the standards B. The driver's seat is secured to the upper end of a standard e, which has its lower end hinged to a plate f on the upper side of the front member W of the cover. This standard is supported in an upright position by the brace g, which has its lower end hinged to the rear member X and its upper end hinged to the standard. By this arrangement the members of the cover can be raised to permit inspection of the harrows without necessitating the removal of the seat and its supporting-standard, as the standard and brace will readily fold together as the cover is raised.

The construction and arrangement of the several parts of our machine being thus made known, the operation and advantages of the same will, it is thought, be readily understood.

When it is desired to harrow the ground, the carrying-wheels are raised by suitably operating the lever H to rotate the crank-axle, and the frame will thus be lowered so as to bring
 5 the harrow-teeth onto the ground. The machine is then drawn forward over the ground, and the harrow-teeth will be caused to rotate so as to thoroughly pulverize the soil. When thus arranged, the tongue will be pivotally
 10 connected to the frame, so that the machine can yield to irregularities in the surface of the ground without causing the tongue to chafe the necks of the horses, and the dog or pawl G effectually prevents the premature lowering
 15 of the axle while the harrow is in use. When it is desired to transport the harrow or move it to another field, the pawls G and I are reversed, and the lever is then thrown backward, so as to lower the wheels. The harrow-frame
 20 will thus be raised from the ground, so that the machine can be drawn along the road without causing the teeth to operate, the pawl G serving to hold the axle in its lowered position. When the axle is rotated so as to lower
 25 the carrying-wheels, the crank-disk E is caused to draw on the chain P and pull the latch M into engagement with the keeper, so as to hold the tongue rigid.

It will be readily seen from the foregoing
 30 description that we have provided a very simple and efficient harrow, which will have a light draft and by the use of which the entire surface of the ground will be thoroughly harrowed and pulverized. The pawl on the lever
 35 engaging the ratchet-disk causes the lever to turn the crank-axle positively and easily, while the pawl G holds the axle in its adjusted position. The cover prevents the dust rising so as to inconvenience the driver, and
 40 its construction is such that the harrows can be easily inspected.

Having thus described our invention, what

we claim, and desire to secure by Letters Patent, is—

1. In a harrow, the combination of the 45 frame, the cranked axle mounted thereon and having a crank-disk at its center, means for rotating the axle, the tongue pivotally connected to the frame, the keeper on the frame, the sliding latch at the rear end of the tongue 50 adapted to engage said keeper, the chain secured to the latch and crank-disk and passing through the keeper, and the spring adapted to draw the latch normally forward, as set forth. 55

2. In a harrow, the combination of the frame, the tongue pivotally connected thereto, a keeper on the frame, a sliding latch on the tongue adapted to engage said keeper, and means for operating said latch, as set forth. 60

3. The combination of the frame, the standards thereon, the cranked axle mounted on said standards, the ratchet-disk on said axle, the lever pivoted on one of the standards and carrying a pawl engaging the ratchet-disk, 65 and the double pawl G, formed with the handle, pivoted on the side of the standard and engaging the ratchet-disk, as set forth.

4. In a harrow, the combination, with a frame A, within which the teeth are mounted, 70 of the cover formed of the two hinged members X W, the seat-standard e, having the seat at its upper end and hinged to the fixed plate f at its lower end, and the brace g, hinged at its upper end to the standard e and at its 75 lower end to a fixed plate, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ANTHONY PETERSON.
 OLE O. RAAEN.

Witnesses:

JAMES MCKAY,
 DANIEL JONES.