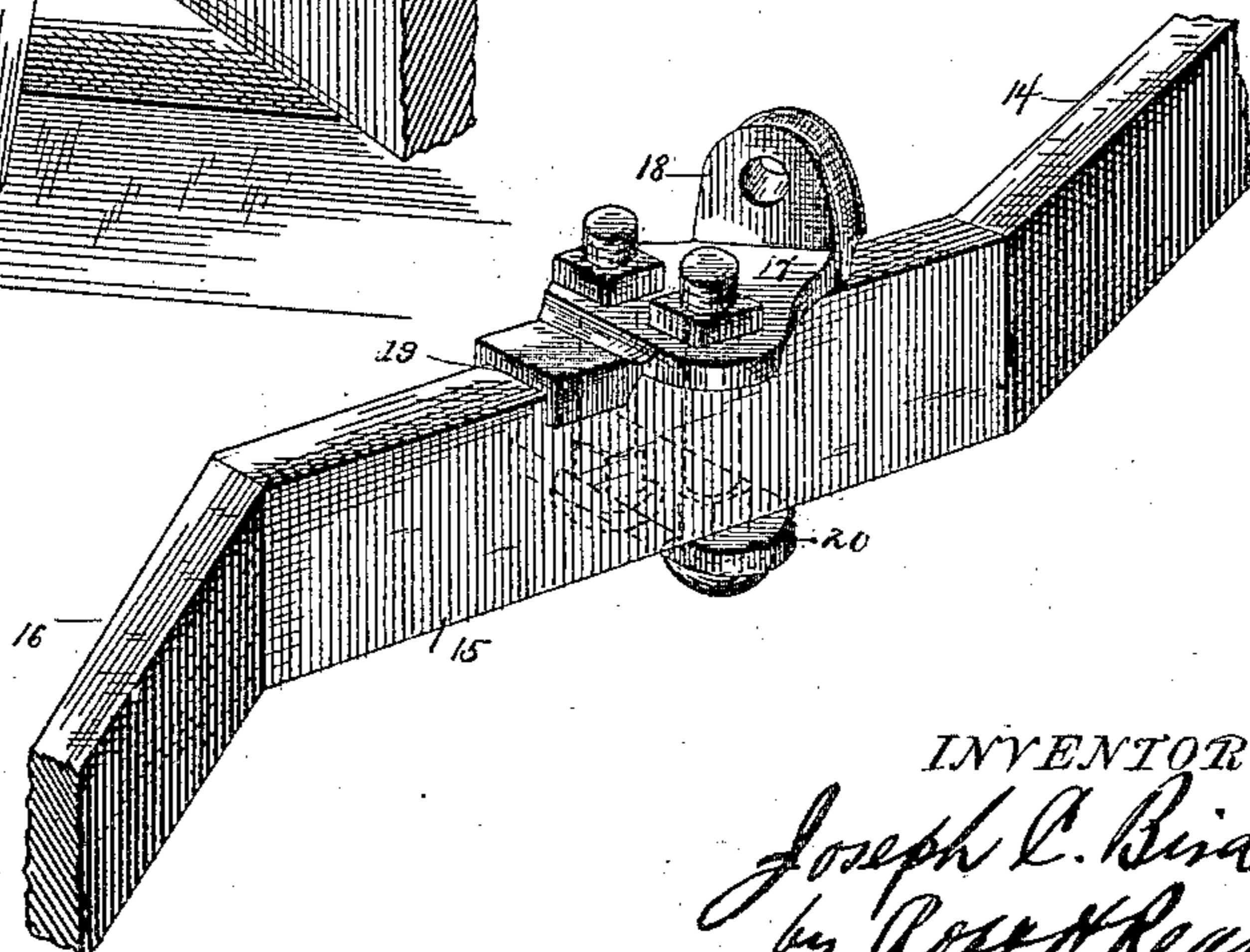
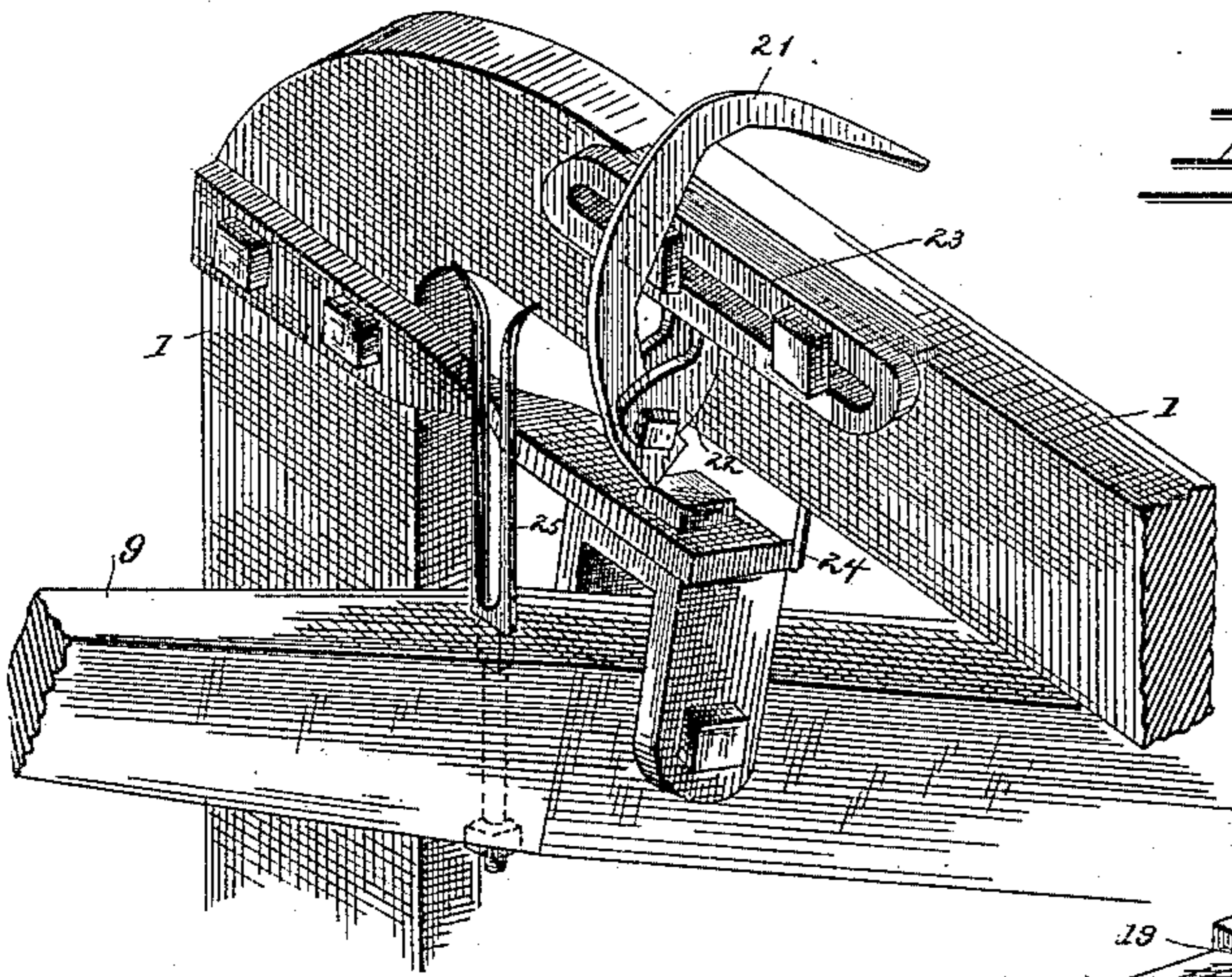
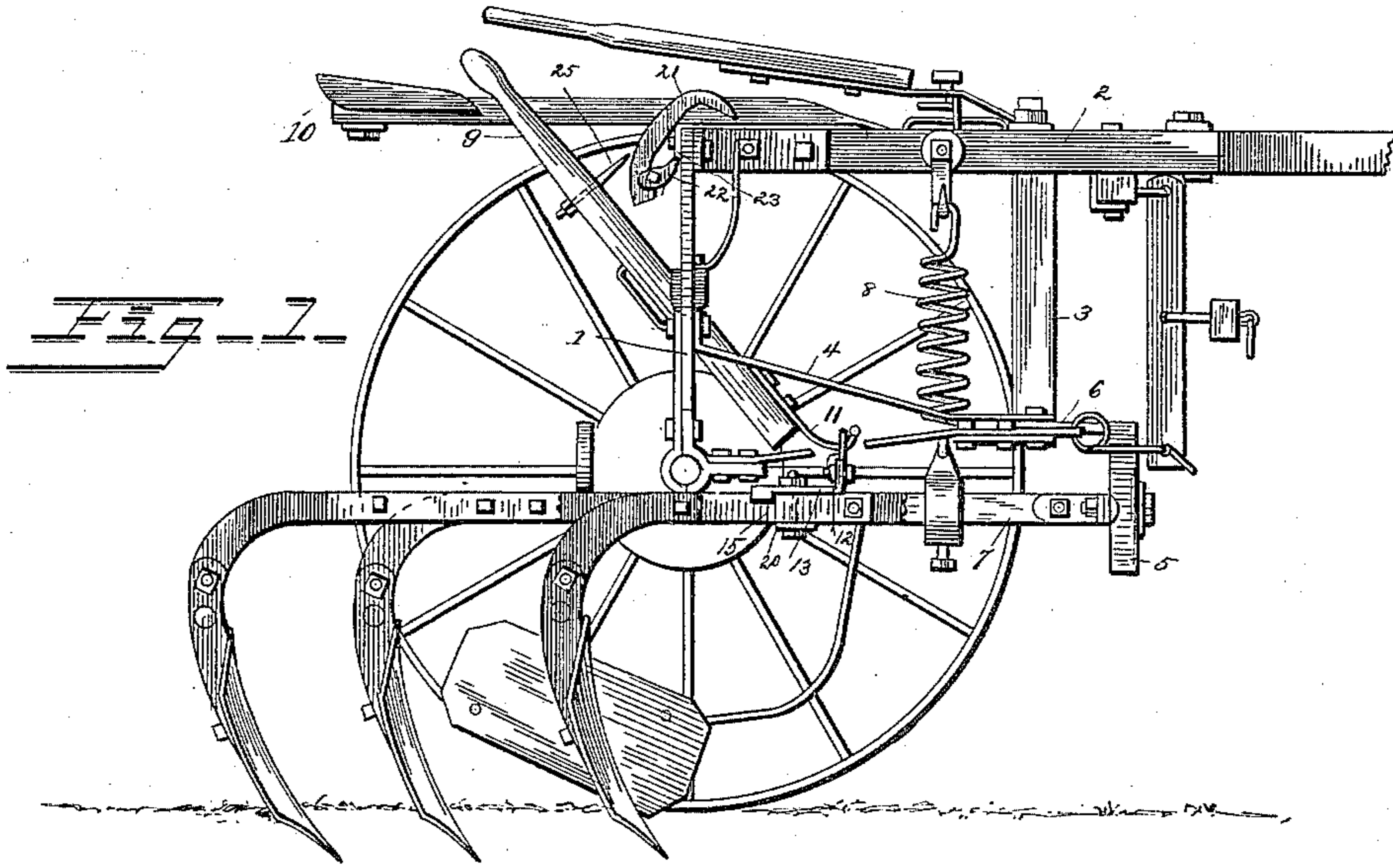


(No Model.)

J. C. BIRD.
CULTIVATOR.

No. 395,475.

Patented Jan. 1, 1889.



WITNESSES,

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UNITED STATES PATENT OFFICE.

JOSEPH C. BIRD, OF RISING SUN, MARYLAND.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 395,475, dated January 1, 1889.

Application filed October 13, 1888. Serial No. 288,051. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. BIRD, a citizen of the United States, residing at Rising Sun, in the county of Cecil and State of Maryland, have invented certain new and useful Improvements in Cultivators; 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 letters and figures of reference marked thereon, which form a part of this specification.

This invention embodies certain improvements on the cultivator described in a patent granted to me July 5, 1887, No. 365,900, reissued September 18, 1888, No. 10,959, in which the cultivator-beams are shifted vertically and laterally by means of hand-levers accessible to the operator while driving the machine.

The object of the invention is to enable the levers which control the action of the cultivator-beams to be locked, when desired, against lateral movement in one direction or against lateral movement in either direction, as may be desired.

A further object of the invention is to compensate a lateral deflection of the handles caused by a closer or wider separation of the pivoted ends of the cultivator-beams when adjusted to give the best results for any style of work.

In the machine described in my patent above referred to the clevises were so constructed as to be capable of lateral adjustment, and as the hand-levers controlling the cultivator-beams were pivotally connected to said beams a shifting of the clevises threw the ends of the hand-levers closer to or farther from the operator, according to the direction of adjustment.

It is the object of one part of my present invention to overcome this difficulty by rendering the pivotal point of connection between the cultivator-beams and the hand-levers capable of lateral adjustment, so as to enable the gripping ends of the levers to be maintained within easy access of the operator irrespective of the adjustment of the clevises.

To these ends my invention consists, first,

in providing a locking device to co-operate with the hand-levers, and, second, in making the hangers which support the lifting ends of the hand-levers laterally adjustable. 55

My invention also embodies certain features of structure with a view to the objects above recited, which will be hereinafter fully described in this specification, and then definitely indicated in the appended claims. 60

In the accompanying drawings, Figure 1 is a side elevation, partly broken away, of a machine. Fig. 2 is a perspective view of a portion of the machine, illustrating the handle-locking device. Fig. 3 is a partial view, in perspective, of an inside plow-beam with a hanger attached. 65

1 is the arched axle, on which the wheels of the cultivator are mounted. 70

2 3 4 is part of the frame-work, on which the several parts of the machine are supported.

As fully described in my prior patent, the clevis 5 6 is mounted on a horizontal arm of the support 3, so as to be capable of lateral adjustment, and is also capable of a lateral pivotal movement. Each cultivator-beam 7 is supported in a depending arm, 5, of the clevis, so as to be capable of movement in a vertical plane. It will thus be seen that each cultivator-beam is supported on a universal joint, so as to have both a vertical and a lateral movement. Such provisions are common in cultivators, and as the device by which the movement is permitted is fully described in my prior patent it need not further be referred to. 85

8 is a supporting-spring to partially counterbalance the weight of the cultivator-beams. On the arched axle 1, and at each side thereof, is pivotally supported a hand-lever, 9, the upper end of which is controllable by the operator from his seat 10, and the lower end of which is provided with a tongue or hook, 11, engaging a link, 12. This link is secured to a hanger, 13, bolted to the interior plow-beam. This plow-beam in cultivators as commonly constructed has one end, 14, secured to the main cultivator-beam and is bent so as to extend in a lateral direction away from the cultivator-beam, and carries at its other end, 16, a plow or cultivator tooth. On the inclined portion 15 the hanger is mounted, as shown in the drawings. It embodies a 100

casting, 17, provided with an upwardly-extending ear, 18, and is recessed at 19 to straddle the plow-beam. The ear 18 is drilled to receive a bolt, on which a link or other suitable device can be fastened to hang over the tongue 11 of the hand-lever. Through suitable holes in the casting are passed bolts, as shown in Fig. 3, passing through a plate, 20, at the bottom of the beam. The bolts are provided with nuts, as shown, so that the device can be locked in any position of adjustment along the inclined portion 15 of the plow-beam. It will now be clear that if the clevises be shifted laterally, and in consequence thereof the hand-lever 9 should swing too close to or too far away from the operator, it may be brought back to its normal position at a point that gives the operator easy control of the machine by loosening the nuts on the hanger and shifting it and the hand-lever with it until the gripping end of the hand-lever stands at the desired position.

On the horizontal part of the arch 1 is secured a folding arm or hook, 21, pivoted at 22 to a slotted support, 23. The support is so fixed on the arch that the hook will lie in about the same vertical plane with the pivotal point 24 of the hand-lever 9, and on the hand-lever rearwardly from its pivotal point is secured in any suitable way—as, for example, in the manner shown in Fig. 2—an upright fork, 25. As will be seen by an inspection of Fig. 2, the arm or hook 21 can be folded back upon the arch, and when in this position the hand-lever can be shifted to the right or left; but when the arm 21 is swung away from the arch it will lie in the lateral path of the upright fork 25. If, when so swung, it rests on the right side of the fork, an inward deflection of the cultivator-beam will be counteracted, while it will still be free to swing outwardly. If, on the other hand, the arm 21 rests on the left side of the fork 25, the cultivator-beam will be held against outward movement, while it will be free to swing inwardly. It will therefore be evident that when plowing or cultivating a hillside the downward drag of the cultivator-beam can be readily prevented whether this drag tends to throw the cultivator-beam toward or away from the center of the machine.

If the arm 21 be placed between the tines of the fork 25, the cultivator-beam will be held immovable, since the hand-lever which controls its lateral movement is secured against deflection to either side. If, therefore, it be desired to use the machine for any work in which the beams should be held at a uniform distance apart—as, for example, as a corn-marker or for cultivating plowed ground—it is only necessary to swing the arm 21 into the fork 25.

The slot in the support 23 permits a lateral adjustment of the support, and consequently of the folding arm attached to it, to enable it to be set in such a lateral position that when the arm 21 holds the hand-lever against de-

flexion said hand-lever will be within easy reach of the operator. This adjustment of the support may be made when the clevis supporting the cultivator-beam is laterally shifted. The lateral adjustability given the hanger 17 obviates any absolute necessity of making this support adjustable, since the hand-lever can be held within proper range of the operator by shifting this hanger. Another and more important function of the slotted support is, however, that it may be shifted so that the folding arm may hold the cultivator-beams at any desired distance apart when it is desired to so hold them, thus enabling the machine to be used as a corn-marker to mark rows lying at different distances apart.

In the drawings but one cultivator-beam and its co-operating hand-lever are shown. It will of course be understood, however, that there is a hand-lever for each beam, as shown in my original patent. My invention is, however, not limited to a machine in which the beams are independently controllable, as it may be applied with advantage to a machine in which the beams are controlled by a single hand-lever. I desire to have it understood also that it is not absolutely essential that all of the features herein described need be combined in the same machine, as some parts may be used without the others with good results.

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

1. The combination, with a pivoted cultivator-beam capable of vertical and lateral movement, of a pivoted hand-lever capable of vertical and lateral movement for shifting the beam, and a lock for holding said hand-lever against lateral deflection when desired.

2. In a cultivator, the combination of a pivoted cultivator beam or beams, a pivoted hand-lever for controlling its lateral movement, a vertical projection on said hand-lever, and a folding arm secured to the frame of the machine, adapted to be interposed in the lateral path of the projection, as and for the purpose described.

3. In a cultivator, the combination of a pivoted cultivator-beam, a pivoted hand-lever for controlling its lateral movement, a forked vertical projection on said hand-lever, and a folding arm secured to the frame of the machine and adapted to be thrown into the fork or to either side of the same, as and for the purpose set forth.

4. In a cultivator, the combination of a pivoted cultivator-beam, a pivoted hand-lever for controlling its lateral movement, a vertical projection secured to said hand-lever, and a folding arm secured to the frame of the machine and adapted to be interposed into the lateral path of the projection, the support of said arm being laterally adjustable, as and for the purpose set forth.

5. In a sulky-cultivator, the combination

of a laterally-adjustable clevis, a cultivator-
beam pivotally connected thereto, a pivoted
hand-lever for controlling the lateral move-
ment of the cultivator-beam, a laterally-ad-
5 justable hanger connecting the hand-lever
and the cultivator-beam, a vertical projection
on the hand-lever, a folding arm adapted to be
interposed in the lateral path of said projec-
tion, said arm being within reach of the oper-

ator from his seat, and a laterally-adjustable 10
support for said arm secured to the frame of
the machine.

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

JOSEPH C. BIRD.

Witnesses:

PHILIP BROWN,
W. W. WILEY.