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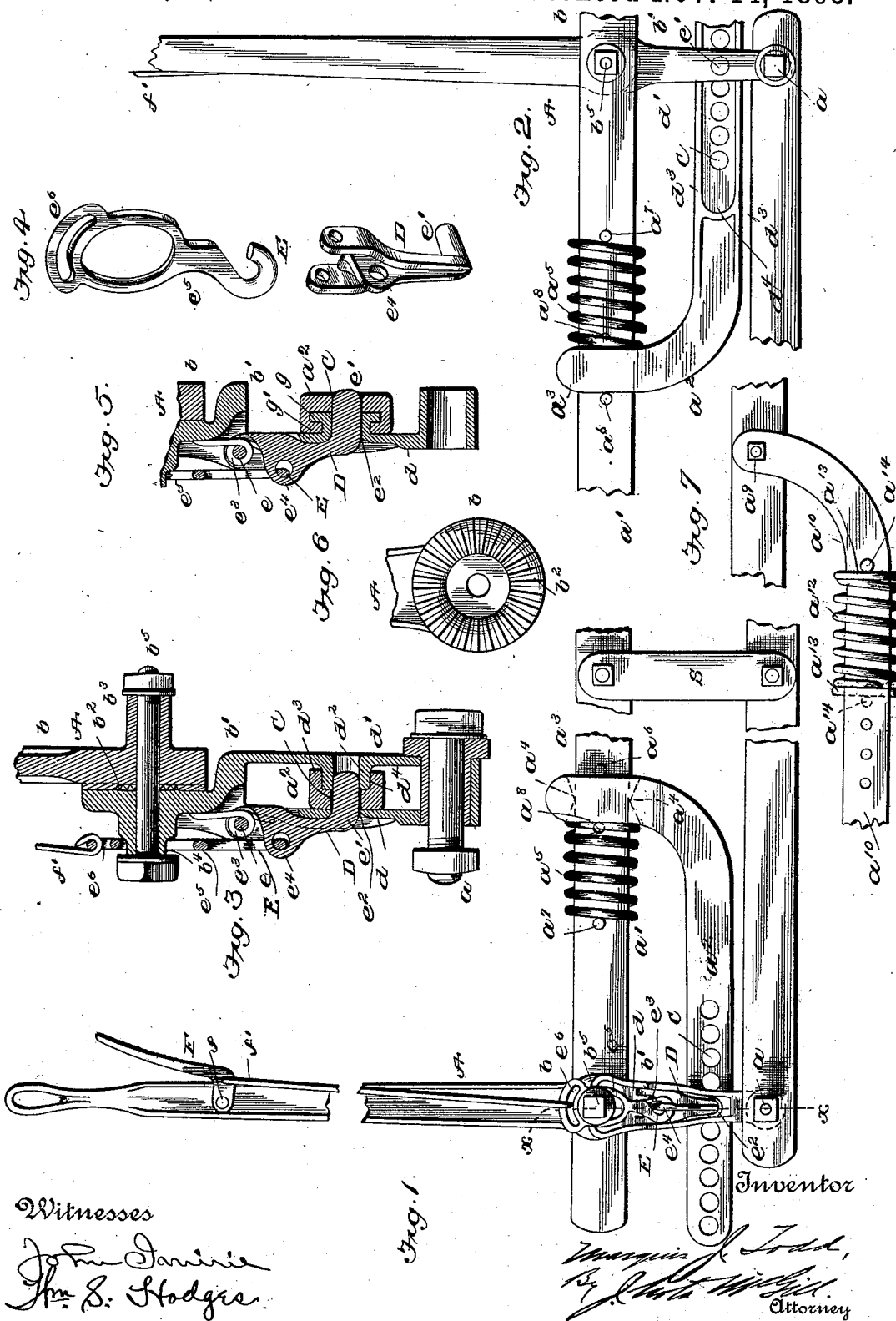
2 Sheets—Sheet 1.

M. J. TODD.

LEVER AND LOCKING MECHANISM THEREFOR.

No. 508,784.

Patented Nov. 14, 1893.



Witnesses

John Jamieson
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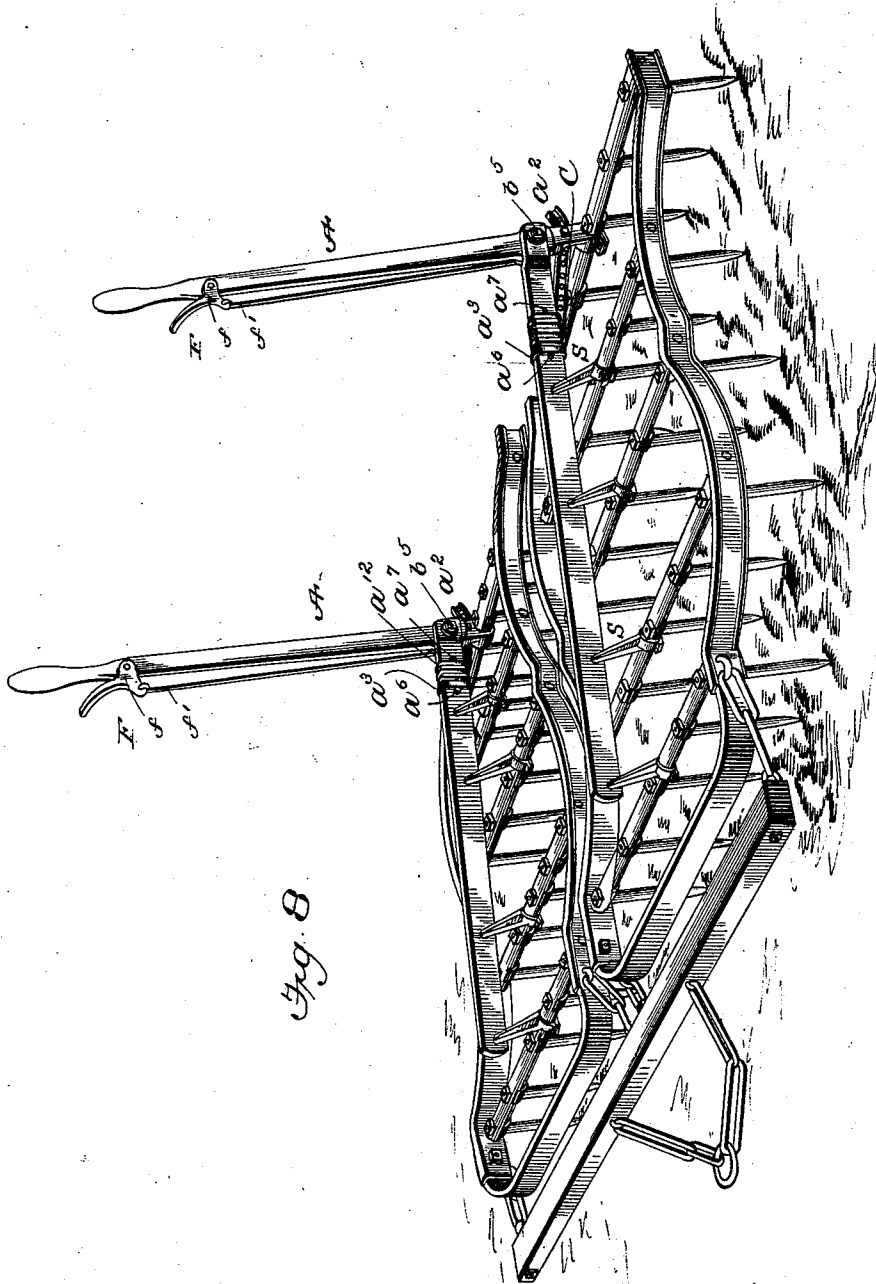
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

MARQUIS J. TODD, OF BUFFALO, NEW YORK.

LEVER AND LOCKING MECHANISM THEREFOR.

SPECIFICATION forming part of Letters Patent No. 508,784, dated November 14, 1893.

Application filed May 8, 1893. Serial No. 473,460. (No model.)

To all whom it may concern:

Be it known that I, MARQUIS J. TODD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Levers and Locking Mechanism Therefor; and I 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.

This invention contemplates certain new and useful improvements in levers and locking mechanism therefor.

The object of the invention is, first, to provide a lever so constructed that the operating handle portion can be turned down out of the way for shipping and the like, and secondly, to provide a simple and efficient lock for holding the lever at any point to which adjusted.

The invention consists of a lever formed in two parts or sections and means for firmly binding said parts or sections together at any angle, whereby one of said parts can be turned or moved independent of the other.

The invention further comprises a lever to which the connecting strap is attached, a locking arm connected to said strap and in engagement with said lever, a spring pressed pawl having lateral engagement with said locking arm and operated by a hand lever located, relatively, at right angles thereto, whereby by operating said hand lever said pawl will be disengaged and said connecting strap can be adjusted to the desired extent.

The invention also comprises the details of construction, combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figures 1 and 2 are opposite side views of my improved lever and locking mechanism. Fig. 3 is a vertical sectional view on the line $x-x$, Fig. 1. Fig. 4 is a detail. Fig. 5 is a view of a modification. Fig. 6 is a detail. Fig. 7 is a view of a modification. Fig. 8 is a view in perspective of a harrow provided with my improvements.

Referring to the drawings, A designates the lever, proper; a the fulcrum bolt at the lower end thereof; a' an approximately horizontal

connecting strap; and a^2 a locking arm connected at its forward end a^3 to strap a' . The strap a' , at some point in advance of the lever, is provided with a support, as S, allowing free movement thereof. The end a^3 of locking arm a^2 is in the form of a loop and has upper and lower V-shaped walls a^4 in contact with the upper and lower edges of the connecting strap. A spring a^5 encircles strap a' and normally holds the looped end of the locking arm against a stop a^6 , the outer end of said spring bearing against a removable stop a^7 . When the spring is not desired, it can be removed and the stop a^7 placed in hole a^8 holding end of the locking arm immovable. In lieu of thus forming a yielding connection between the connecting strap and the locking arm, the latter may be directly pivoted thereto, as at a^9 , Fig. 7, and said arm formed in two sections a^{10} having overlapping portions around which is coiled a spring a^{12} , engaging at its ends flanges a^{13} of said sections. Stops a^{14} limit the movement of the sections. It is obvious, however, that when a yielding connection is not desired, the locking arm may be formed in one continuous piece.

The lever A is composed of two parts or members b, b' , having each rounded portions provided with opposite serrated faces or teeth b^2 and central outwardly extended sleeves b^3, b^4 , through which a nutted bolt b^5 is passed for uniting said parts. The nut on this bolt holds connecting strap a' loose on hub b^3 of part b . By loosening this nutted bolt the serrated faces can be disengaged and the part b turned down out of the way for shipping purposes and the like, the position of part b' remaining unchanged. This lower part b' is preferably made in the form of a loop, that is, it has an intervening space between its two parallel sides d, d' . From the latter projects a hollow hub d^2 . The locking arm a^2 is passed between these sides and it is provided with holes or apertures C throughout its straight portion, and from one side project upper and lower flanges d^3 forming a recess d^4 in which hub d^2 snugly fits, thus forming a pivot and guide for said locking arm.

D is a pawl located in a recess in side d and pivoted by a rod e , its hooked end e' being normally extended through a hole e^2 in

said side and also into the hollow hub d^2 . A spring e^3 encircling rod e and having one end in engagement with said pawl keeps the same in its normal position. From this pawl projects an apertured arm or rib e^4 through which is passed a hook E from which latter extends a loop e^5 which encompasses a sleeve b^4 , and from this loop extends a curved or radial loop e^6 .

F is a hand lever fulcrumed at f near the outer end of lever A and to it is connected one end of a lifting rod f' , the other end of which is in engagement with curved loop e^6 of the sliding hook E. Hence by operating lever F the hook E will be drawn upward and the inwardly extended hooked end of pawl D will be withdrawn from the hole or opening in arm a^2 and hub d^2 .

In Fig. 5 is shown a slight modification of my invention, the same consisting in dispensing with the loop of the lower part or member and providing the hollow hub with a circular flange g designed to engage right angular flanges g' of the apertured arm or strap. Hence the same results are attained with but a slight change of construction.

It is obvious that the lifting rod can be connected directly to the spring held pawl, but by employing the sliding hook having a curved or radial loop, and holding the same on the sleeve of the lever, I always have a direct pull upon the pawl, the curved or radial loop permitting the lifting rod to conform to any angle of the upper part or member of the lever, the same relative distances being always maintained.

The operation of my improved lever and locking mechanism is obvious, and likewise the advantages are apparent to those skilled in the art to which it appertains. The connecting strap may be attached at its free end to any object which it is desired to keep under the control of a lever. To effect the desired adjustment the operator presses on the hand lever F withdrawing the pawl from the hole in locking arm a^2 when the operator by forcing the lever either forward or backward will effect the movement of the connecting strap a' and with it said locking arm. When the desired point of adjustment is reached pressure on the hand lever is released and the pawl will re-enter one of the holes in said locking arm and thus hold the parts locked. The locking arm is always guided in its movement by the hub fitting in its side recess. To lower the upper part or member of the lever it is only necessary to loosen bolt b^5 so as to disengage the interlocked toothed or serrated surfaces, the lower part with the locking mechanism remaining undisturbed. It will also be seen that the position of the upper part or member of the lever relative to the lower part or member can be readily and easily adjusted and said parts firmly united in whatever position they occupy.

Another and important advantage of my

invention arises from the fact that all the weight or strain on the locking mechanism is thrown onto the lever at or near its point of fulcrum.

The object of providing a yielding connection between the connecting strap and the locking arm, or a yielding connection between the sections of said arm, is that in the event of a sudden jar or pull upon the forward end of the connecting strap, as, for instance, when said strap controls the position of a sulky plow, or a series of harrow teeth, or is used to limit the movement of any rigid mechanism where sudden strain may be exerted thereon, said connecting strap will be free to give to a limited degree and thus avoid breakage of any of the parts.

I claim as my invention—

1. The combination of a lever, a connecting strap extended therefrom, a movable locking arm, a pawl pivoted on one side of said lever and movable at right angles thereto for engaging and holding said locking arm, and a hand lever fulcrumed on said former lever and connected with said pawl for operating the latter, substantially as set forth.

2. The combination with a lever having a hollow hub projecting therefrom, and a locking arm engaging said hub having a series of holes therein, a spring pressed pawl fulcrumed on the side of said lever and engaging said locking arm, a hand lever fulcrumed on said former lever, and connections between said hand lever and said pawl, substantially as set forth.

3. The combination with a lever having a hollow hub projecting therefrom, and a locking arm engaging said hub and having a series of holes therein, of a pawl pivoted on said lever and having a hooked end working in said hub, a sliding hook engaging said pawl, and a hand lever fulcrumed on said former lever and connected to said sliding hook, substantially as set forth.

4. The combination of a lever, a connecting strap extended therefrom, and a movable locking arm connected at its ends to said lever and strap, one of said ends being adjustably locked to said lever, as set forth, said locking arm having a yielding movement independent of the lever.

5. The combination of a lever having a hollow hub, a connecting strap attached to said lever and having a forward loose support, a locking arm or strap connected to said connecting strap and engaging said hub, a spring pressed pawl for holding said locking arm, and means for operating said pawl, substantially as set forth.

6. The combination of a lever having a hollow hub, a connecting strap attached to said lever and having a forward loose support, a locking arm or strap connected to said connecting strap and engaging said hub, a spring pressed pawl for holding said locking arm, a sliding hook engaging said pawl and having

a curved or radial loop, a hand lever fulcrumed on said former lever, and the lifting rod connecting said hand lever to said loop, substantially as set forth.

5 7. The combination of the lever having a lower loop provided with parallel sides, an inner hub extending from one of said sides, the connecting strap, the locking arm having a series of holes and a side recess in which said
10 hub fits, a spring pressed pawl pivoted to one of said sides and having a hooked end designed to enter said hub and a coincident hole in said locking arm and means for operating said pawl, substantially as set forth.

15 8. The combination of the lever composed of two parts or members, means for adjustably connecting said parts or members, the connecting strap loosely connected to one of said parts or members, and the locking arm
20 attached to said connecting strap and adjustably held to the other one of said parts or members, whereby said former part or member can be moved independent of the other part or member, substantially as set forth.

45 9. The combination of a lever, a connecting strap, connected thereto and a yielding lock-

ing arm also connecting said strap to said lever, as set forth.

10. The combination of a lever, a connecting strap, connected thereto a locking arm, 30 forming a yielding connection, between said strap and lever and mechanism for holding said locking arm to said lever, as set forth.

11. The combination with the lever, and the connecting strap, of the locking arm con- 35 nected at one end to said connecting strap, and a spring or yielding bearing for said end carried by said connecting strap, as set forth.

12. The combination with the lever, and the connecting strap, of the locking arm having 40 a looped end through which said strap is passed, forward and rearward stops and a spring on said strap between said looped end and one of said stops, substantially as set forth.

45 In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MARQUIS J. TODD.

Witnesses:

J. NOTA MCGILL,
WM. S. HODGES.