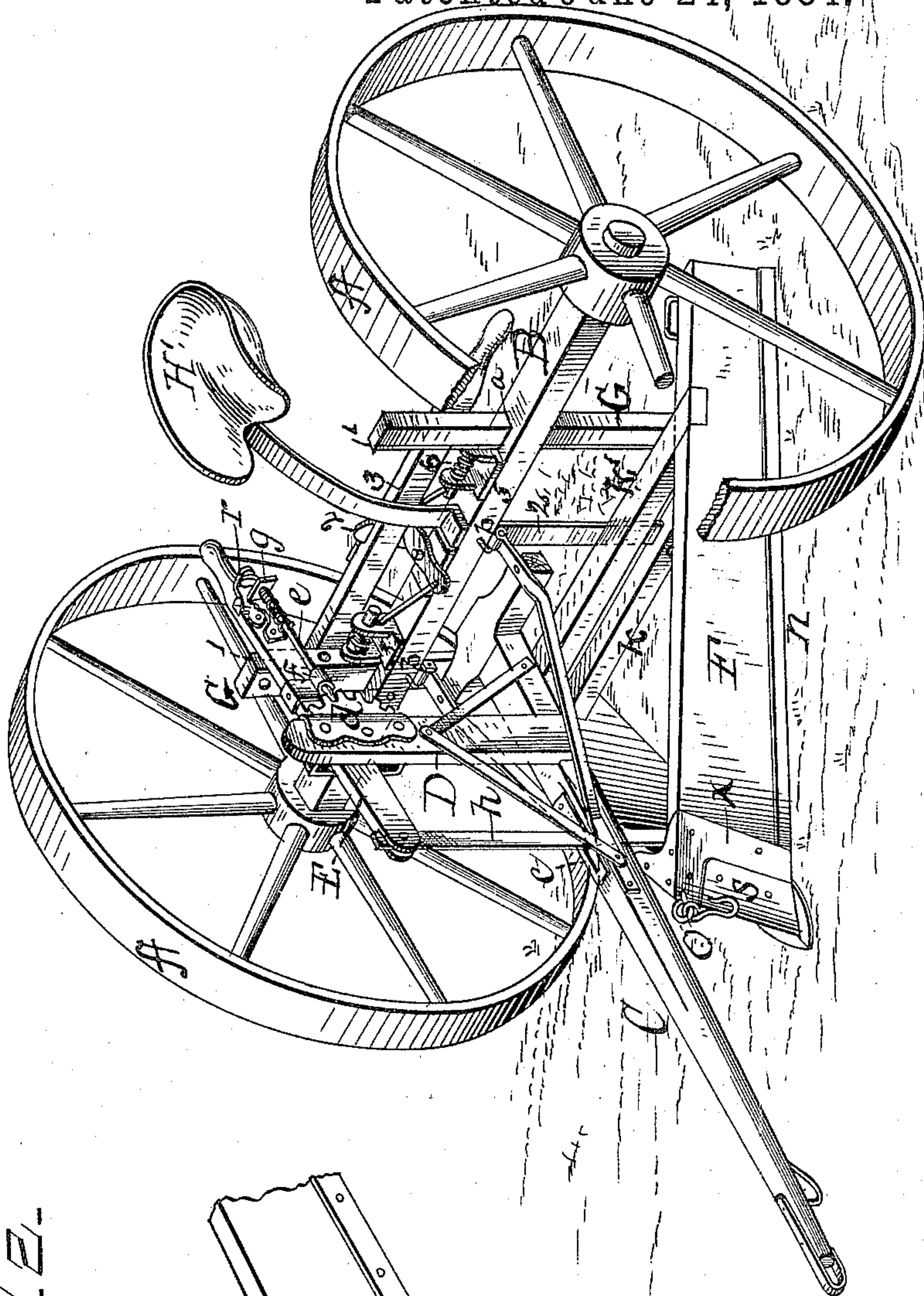
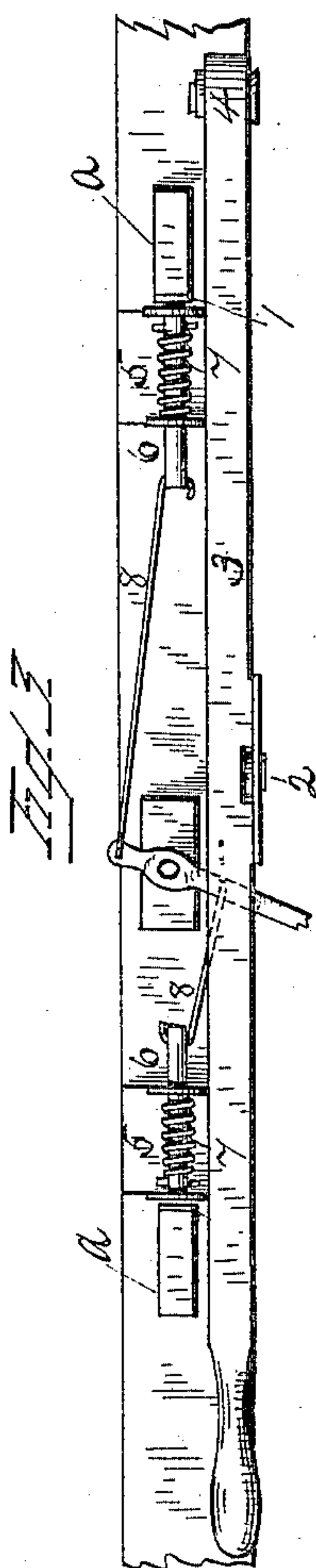


(No Model.)

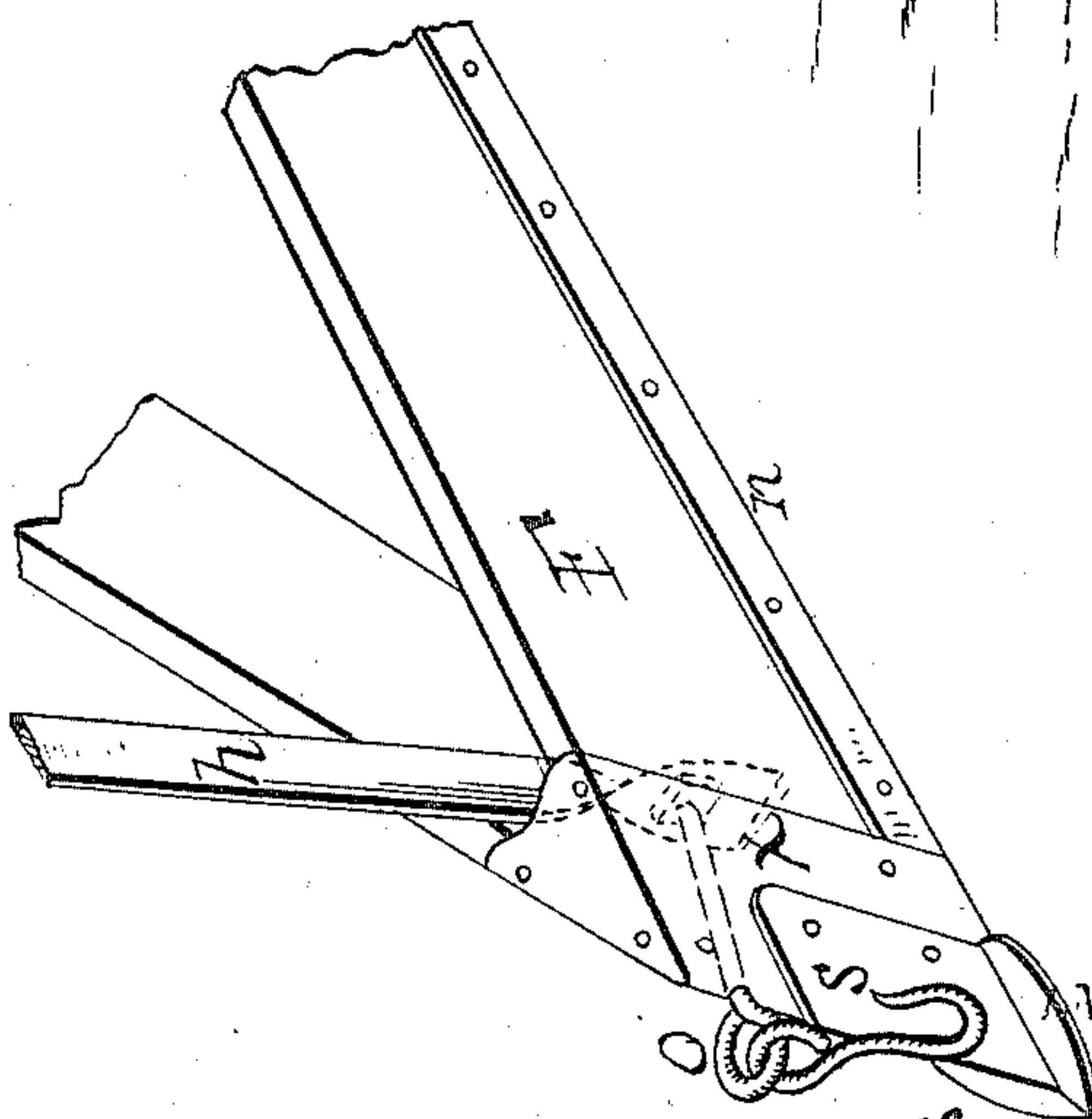
T. WILLSEA.
DITCHING MACHINE.

No. 301,034.

Patented June 24, 1884.



~~SECRET~~



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UNITED STATES PATENT OFFICE.

THEODORE WILLSEA, OF BROCKPORT, NEW YORK.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,034, dated June 24, 1884.

Application filed October 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, THEODORE WILLSEA, a citizen of the United States of America, and a resident of the town of Brockport, in the county of Monroe, in the State of New York, have invented a new and useful Ditching-Machine, of which the following is a specification.

My invention relates to improvements in ditching-machines or ditching-plows; and the object is to construct a machine of the class named to make and clean out ditches and dead-furrows in arable lands to any desired depth and width, either before or after sowing or planting.

My invention therefore consists in the novel construction and combination of parts, as will be hereinafter more fully set forth, and specifically pointed out in the claims. I attain the objects intended by means of the implement hereinafter described, and which is fully illustrated in the accompanying drawings, wherein are shown all of the operative parts.

Figure 1 is a perspective view of my improved ditcher. Fig. 2 is a view of the cutting-point, and Fig. 3 is a view showing the adjusting and retaining means for the end of the plow.

The letter A represents the wheels carrying the axle B, wherein are formed vertical slots *a*, made at a predetermined distance apart, and intended to receive the standards of the plow, as hereinafter stated. The axle is made of suitable strength to resist the strain thrown upon it under any conditions of the work to be done, and the tires of the wheels are preferably made broad, in order that they shall sink as little in the soil as possible.

The letter C represents the tongue, pivotally secured to the axle, substantially as shown at *b*, and formed with a longitudinal slot, *c*, disposed in relation to the point of the plow so that the suspension-bar may be suitably connected to the inner face of the angle-point in the plow, and permit a limited backward and forward movement of the plow without the rod striking the ends of the slot. To the rear portion of the tongue is secured a standard, D, firmly fixed thereto, and suitably braced. To the upper end of this standard is secured a segmental gear, *d*, and pivotally fulcrumed to the standard is a lever, E, carrying a spring stop-bar, *e*, passed through a sleeve, *f*, suitably

bly fixed to the lever, and the other end of this stop-bar is passed through an ear or lug, *g*, fixed to the lever, substantially as shown. Disposed about and properly secured to the spring stop-bar is a coil-spring, the office of which is to enforce engagement between the segmental gear and the stop-bar. The hand end of the stop-bar is turned up at right angle to the bar, as seen in the drawings, and this turned-up portion engages with a thumb-stop, *r*, also pivoted to the lever, and having a projecting lug so arranged that when the stop-bar is engaged with the segmental gear the contact is maintained by the lug setting against the end of the bar, and when the stop-bar is withdrawn from engagement with the segmental gear it is held so by the lug of the thumb-stop setting against the inner side of the turned-up part of the stop-bar. Secured to and suspended from the object end of the lever E is the bar *h*, which passes down through the slot in the tongue, and is secured to the inner end of the draft-bolt in the angle of the plow, substantially as seen in the drawings.

The letter F represents a double-mold-board ditching-plow, having the wings inclined from top to bottom outward, and secured at the point of intersection by means of an iron shield, *x*, bolted or otherwise fastened to the wood of the wings. To this shield is removably secured a steel cutting-point, S, formed with a stem, the side plates of which are diverging from the point and set at an angle to fit the angle-point of the plow, and with its bottom edges turned forward and out flat at about right angle to the stem, for the purpose of cutting the soil or through obstructions. The rear ends of the wings, being set to a proper width, are secured against breakage or displacement by cross-bars *k* and *k'*, the former of which is set in near the bottom, and the latter being set in at the top of the wings, substantially as seen.

In the cross-bar *k* are firmly fixed two upright standards, G, which are passed up through the slots in the axle. On the inner edge of each of these standards is fixed a metallic plate, 1, having a series of holes to receive the retaining-bolts, hereinafter described. To the center of the bottom cross-bar, *k*, is secured a bar, 2, which is passed up

through a slot in the axle, and secured to a lever, 3, running parallel with the axle, and having the end fulcrumed at 4, substantially as shown in the drawings in Fig. 3. On top of the axle, and having their outer faces aligned with the inner edge of the standard-slots in the axle, are secured two plates, 5, having struck-up ends, perforated to receive the bolts 6, which are passed through the perforations, and have applied to them the coil-springs 7, which are so arranged that their force continually directs the bolts in the direction of engagement with the holes in the plates fixed to the standards. In the center of the axle is pivoted the double-acting lever, to which the rods 8 are secured, as shown, and from thence extend and are fastened in the end of each bolt, by which means the bolts are withdrawn from engagement. By means of this lever and spring-bolts engaging the holes in the standards, in connection with the lifting-lever, I am enabled to raise or lower the rear end of the plow to any desired point and secure it in such position. Along the outside and lower edge of each wing is fitted and suitably fastened a strip of iron, *n*, intended to serve as strengthening and wearing strips, and as affording cutting-edges. The draft-bolt O is passed through the shield and front of the ditcher, and thence through a hole in the end of the suspension-bar and secured by a nut. A seat, H', is provided and fixed to a spring-bar, or otherwise applied to the axle. To the rear of each wing is fixed a hand-grasp for convenience in handling the plow.

By the arrangement of the parts as hereinbefore set forth I am enabled to adjust the ditcher to any reasonable grade or depth, and then by adjustment of the point or rear I am also enabled to adapt the implement to ditches or furrows of different widths by simply elevating the rear ends of the wings and setting the point to the desired depth. By inclining the wings outwardly from top to bottom the dirt is easily and readily moved to the outside of the ditch.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the carriage-axle formed with slots, and the tongue pivotally secured thereto and formed with a slot, and having an upright standard carrying an adjustable lever and suspension-rod, the ditching-plow, the point whereof is secured to the suspension-rod, and the rear portion having fixed upright standards passed through the slots in the axle and adjustably secured therein, substantially as described.

2. The ditching-plow herein described, formed with mold-boards or wings outwardly inclined from top to bottom, and joined at the point by a shield adapted to have fixed to it the plow-point, and at the rear secured by cross-bars, one of which is provided with two

fixed standards formed with a plurality of holes, and the front end provided with a draft-bolt adapted to be connected to a suspension means, substantially as described.

3. The ditching-plow point herein described, consisting of the stem formed with diverging side plates set at an angle from the point to fit the angle-point of a double-mold-board plow, and the point and lower side edges thereof turned forward and out flat at about right angles to the direction of the stem, substantially as and for the purpose set forth.

4. In combination with a double-mold-board ditching-plow, a plow-point the stem of which is formed with diverging side plates set at an angle from the point to fit the angle-point of the double mold-board, and the point and lower side edges thereof turned out flat at about right angles to the stem, substantially as described.

5. The tongue pivotally secured to the axle of a carriage of a ditching-plow, and having fixed thereto a standard carrying a segment-gear, a lever pivoted to the standard and having a stop-bar engaging the segmental gear, and provided with a suspension-bar depending through a slot in the tongue and adapted to be connected to the forward end of the plow, substantially as described.

6. The plow adjustably suspended at the point, and provided with fixed upright standards, and carriage-axle provided with slots to receive the standards of the plow, in combination with the lifting-lever running parallel with the axle and fulcrumed thereto, with central sustaining-rod connected to the cross-bar of the plow, substantially as described.

7. The plow adjustably suspended at the point, and provided with fixed upright standards having secured to their inner edges perforated plates, and the carriage-axle slotted to receive the standards of the plow, in combination with the spring-bolts 6, operatively fixed to the axle, and the lifting-lever 3, substantially as described, and for the purpose set forth.

8. The organized ditching-plow herein described, consisting, essentially, of the wheels A, axle B, having slots *a*, tongue C, pivotally secured to the axle, and having the standard D, with the segmental gear *d*, the lever E, with the stop-bar *e* and suspension-rod *h*, the plow F, with standards G, lifting-lever 3, spring-bolts 6, shield *x*, and cutting-point S, the whole arranged and combined substantially as and for the purpose set forth.

In witness whereof I have signed this specification and claims in the presence of two attesting witnesses.

THEODORE WILLSEA.

Attest:

GEO. BOXALL,
HENRY WM. SCHRAMM.