(No Model.)

A. M. FITCH.

PLOW.

No. 464,015. Patented Dec. 1, 1891.

Fig. 1.

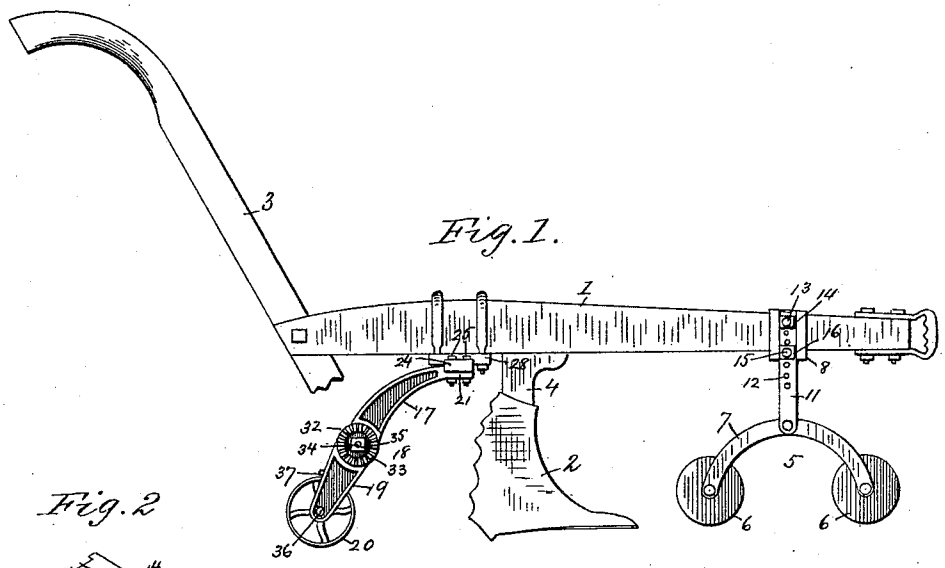


Fig. 2

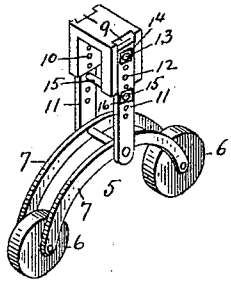


Fig. 3.

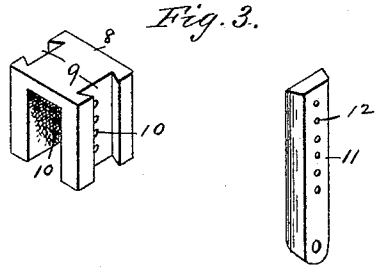


Fig. 4.

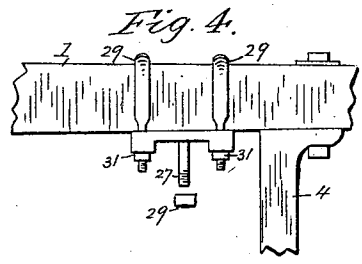


Fig. 5.

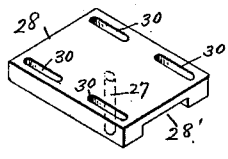
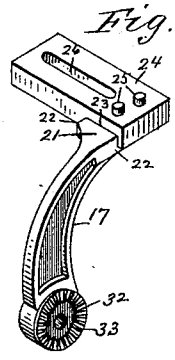


Fig. 6.



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UNITED STATES PATENT OFFICE.

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PLOW.

SPECIFICATION forming part of Letters Patent No. 464,015, dated December 1, 1891.

Application filed October 31, 1889. Serial No. 328,785. (No model.)

To all whom it may concern:

Be it known that I, ASA M. FITCH, a citizen of the United States, residing at Seymour, in the county of Jackson and State of Indiana, have invented certain new and useful Improvements in Plows; 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.

My invention relates, generally, to plows, and particularly to that class thereof in which an adjustable pivoted truck is employed at the forward portion of the plow-beam for permitting its wheels to pass over the ordinary obstacles encountered in plowing without altering the depth of the penetration of the plow proper or straining the parts of the same or its frame, and, consequently, for plowing with equal ease and accuracy in rough and smooth lands, and in which a wheel is employed in rear of the plow proper for running in the bottom of the furrow and steadying the same, for supporting said plow while being upon the surface of the land and moved from place to place, for forming a fulcrum for raising the plow from the surface of the land by pressing upon the handles, and for forcing said plow a greater or lesser depth into the ground by adjusting its support; and my invention is especially designed as an improvement upon the one disclosed in Letters Patent granted to me May 12, 1885, No. 317,754, although it is equally applicable to any plow whereon its employment is desired.

The objects of my invention are, first, to provide improvements in the construction of the truck for the forward portion of the plow-beam and in the devices for adjustably securing said truck to said beam; second, to provide novel and improved means for attaching the rear or furrow wheel and its standard to plow-beams of varying widths; third, to provide novel and improved means for raising and lowering the plow proper and for transferring the furrow-wheel and the lower arm of its standard to a point on a line to the right or left of the upper arm of its standard, as desired, and fourth, to provide novel and improved devices for vertically adjusting the plow proper and the truck, so as to bring them into proper horizontal alignment when it is desired to plow deep or shallow furrows; and it consists in the peculiarities of construction and arrangement or combination of parts hereinafter disclosed in the description, drawings, and claims.

In the accompanying drawings, forming part of this specification, and in which the same reference-numerals indicate the same parts, Figure 1 represents a partly broken side elevation of a plow with my improvements attached; Fig. 2, a detail perspective view of the two-wheeled truck and its attachments; Fig. 3, a detached perspective view of one side of the clip-band and of one of the vertical bars which fits and is adapted to slide therein; Fig. 4, a broken side elevation of the plow-beam and plow-standard, showing also the upper fish-plate, its screw-bolt and nut, and the clips for securing the same to said beam just in rear of said standard; Fig. 5, a detached perspective view of said upper fish-plate; and Fig. 6, a detail perspective view of the lower fish-plate and the upper arm of the two-part standard for supporting the furrow-wheel, secured to one end thereof, showing also the lower end of said upper arm of the standard as provided with an annular series of teeth or cogs upon each side thereof.

In the drawings, the numeral 1 designates the plow-beam, 2 the plow proper, 3 the handles, and 4 the plow-standard, to which and said handles the plow is secured in any suitable manner, all being of any ordinary or preferred construction.

The truck 5, consisting of the two wheels 6 and the two yokes 7, in the ends of which said wheels are journaled, is applied to the forward portion of the plow-beam 1 and suspended therefrom by the clip-band 8, which is formed with the vertical dovetailed grooves 9 in its sides and with the series of vertical holes 10 in its inner walls by the two vertical bars 11, which are pivoted at their lower ends to the centers of said yokes, and which are formed to fit and slide within said dovetailed recesses in the clip-band and are provided with the vertical series of holes 12, which are adapted to register with the holes 10 in said clip-band, and by the screw-threaded bolt 13, which passes through said holes and the plow-beam and is held in place by the nut 14. For the purpose of further firmly connecting

these parts to and bracing them upon the plow-beam, another screw-threaded bolt 15 is passed through the registering holes 10 and 12, and just beneath the under side of and against said plow-beam, where it is held in place by the nut 16. By the removal of these bolts and nuts and their adjustment to suitable registering holes in the bars 11 and the clip-band 8, the truck will be also vertically adjusted, and thus caused to coincide in horizontal alignment with the plow proper when it is vertically adjusted for plowing to greater or lesser depth. This truck attachment is also applicable to plow-beams of various forms and sizes, either by shaping or cutting the latter to fit the clip-band or by forming the latter to fit the beam.

At a point just in rear of the plow-standard 4 is secured the upper arm 17 of the two-part jointed standard 18, to the lower end of the lower arm 19 of which is journaled the furrow-wheel 20, as shown in Fig. 1. The upper portion of the arm 17 is curved slightly forward and formed at its front end with a horizontal portion 21, which is preferably provided with outwardly-projecting flanges 22 along its upper edges and is fitted within a correspondingly-shaped recess 23, formed in the under surface of the lower fish-plate 24, near the inner end thereof, as shown in Fig. 6. These ends of the fish-plate and of the upper arm 17 of the standard are arranged at right angles to each other, and are additionally or more rigidly held together by means of the nutted bolts 25 passed therethrough. The lower fish-plate 24 is formed with a central elongated opening or slot 26, which extends lengthwise thereof and is adapted to receive the screw-bolt 27, which projects downward therethrough from the center of the upper fish-plate 28, and is provided with the nut 29 for rigidly holding said fish-plates together in whatever position they may be adjusted. The upper fish-plate 28 is formed in its under surface with the recess 28′, which is of a width corresponding to that of the lower fish-plate, but is not as long, and within which said fish-plate is fitted and adapted to slide. Also, this upper fish-plate rests against the under side of the plow-beam 1, and is firmly secured thereto by the clips 29, which pass over the same and down through the preferably elongated openings 30, which are formed in the sides of said fish-plates, their lower ends being screw-threaded for receiving the nuts 31, by which said plate may be tightened against, loosened for adjustment upon, or removed from said plow-beam. These adjustable fish-plates as constructed and the adjacent parts not only afford a firm connection between the plow-beam and the furrow-wheel and its two-part jointed standard, but render it possible, by means of their adjustability, to apply them to plow-beams of varying sizes. At the lower and upper ends, respectively, of the two arms 17 and 19 of the furrow-wheel standard 18 is formed or provided an adjustable double connection or joint 32, which consists of the annularly-arranged teeth or cogs 33 on the sides of the ends of the arms named, which engage each other and are clamped firmly together by the screw-bolt 34 and the nut 35. The faces or sides of these cogs are preferably vertical and radiate from a common center, whereby, when engaged, they snugly intermesh and permit of no play or movement whatever, but by removing said nut and bolt they can be disconnected. Then the lower arm of the furrow-wheel standard can be moved into more or less vertical position, which, when its teeth or cogs are again engaged with and secured to the opposite teeth or cogs, will have the effect of correspondingly raising or lowering the plow for forming shallow or deep furrows; also, by disconnecting these cogs the lower arm of the furrow-wheel standard having the double set of annular cogs thereon can be transferred to the correspondingly-cogged opposite side—to the right or left—of the upper arm of said standard, and thereby effect the transposition of the furrow-wheel to the right or left of a line passing through the plow-standard or the point of the plow proper, as may be desired, or necessary in forming the furrows in plowing. The lower end of the lower arm 19 of the furrow-wheel standard is provided with a laterally-projecting axle 36, upon which the furrow-wheel is journaled. Also, at a point just above said wheel, this arm is provided with a laterally-projecting scraper 37, which readily removes all adhering dirt from the periphery of said wheel.

Having thus fully described the construction and arrangement or combination of the several parts of my invention, its advantages and operation, what I claim as new is—

1. In a plow, the combination, with a beam and a two-wheeled truck, of a single clip-band formed with a vertical series of openings in its sides and secured upon said beam, two vertical arms pivoted to said truck at their lower ends and formed with a series of openings which register with those in said clip-band, an upper nutted screw-bolt passing through said beam and adjustably connecting said arms and clip-band, and a lower nutted screw-bolt passing through said registering openings and resting against the under side of said beam, substantially as and for the purpose described.

2. In a plow, the combination, with a beam and a two-wheeled truck, of a single clip-band secured upon said beam and formed with the vertical dovetailed grooves in its sides and with the series of vertical openings in its walls, two vertical arms pivoted at their lower ends to said truck and formed with a series of openings which register with those in said clip-band, and a nutted screw-bolt for adjustably connecting said arms and clip-band to said beam, substantially as described.

3. In a plow, the combination, with a beam, a plow, a plow-standard, a furrow-wheel, and

a furrow-wheel standard, of two adjustably-connected fish-plates between the upper end of said furrow-wheel standard and said beam, which are attached to said beam and standard and which are arranged in rear of said plow-standard, and means for securing them to beams of varying sizes, substantially as described.

4. In a plow, the combination, with a beam, a plow, a plow-standard, a furrow-wheel, and a furrow-wheel standard, of two adjustably-connected fish-plates between the upper end of said furrow-wheel standard and said beam, which are attached to said beam and standard and which are arranged in rear of said plow-standard, and two clips provided with nuts for securing said fish-plates to beams of varying sizes, substantially as described.

5. In a plow, the combination, with a beam, a plow, a plow-standard, a furrow-wheel, and a furrow-wheel standard, of the lower and upper fish-plates 24 and 28 between the upper end of said furrow-wheel standard and said beam, which are attached to said beam and standard and which are arranged in rear of said plow-standard, said lower fish-plate being formed with the slot 26 and said upper fish-plate being formed with the recess 28′ in its under surface and with the openings 30 in its sides and provided with the central nutted screw-bolt 27, and the clips and nuts 29 and 31, substantially as and for the purpose described.

6. In a plow, the combination, with a beam, a pivoted two-wheeled truck, a single clip-band secured upon said beam, and means for vertically adjusting said truck, of a plow proper, a plow-standard, a furrow-wheel, a two-part furrow-wheel standard connected to said beam just in rear of said plow-standard, and devices for vertically adjusting said furrow-wheel and the lower part of its standard, substantially as and for the purpose described.

7. In a plow, the combination, with a beam, a pivoted two-wheeled truck, a single clip-band secured upon said beam, and means for vertically adjusting said truck, of a plow proper, a plow-standard, a furrow-wheel, a two-part furrow-wheel standard connected to said beam just in rear of said plow-standard, and devices for vertically adjusting said furrow-wheel and the lower part of its standard, said devices consisting of annularly-arranged teeth or cogs on the sides of the upper and lower ends of said two-part standard, and a screw-bolt and nut for holding them in their intermeshed adjusted positions, substantially as and for the purpose described.

8. In a plow, the combination, with a beam, of a furrow-wheel and a standard therefor, which consists of an upper and a lower arm provided on the sides of their lower and upper ends with annularly-arranged teeth or cogs, means for holding them in variable intermeshed positions, adjustably-connected fish-plates, and a single clip for securing the upper arm of said standard to said beam, substantially as described.

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

ASA M. FITCH.

Witnesses:
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