No. 628,899.

Patented July 11, 1899.

M. J. SEIFRIED.

PLOW.

(Application filed Sept. 10, 1898.)

(No Model.)

4 Sheets—Sheet 1.

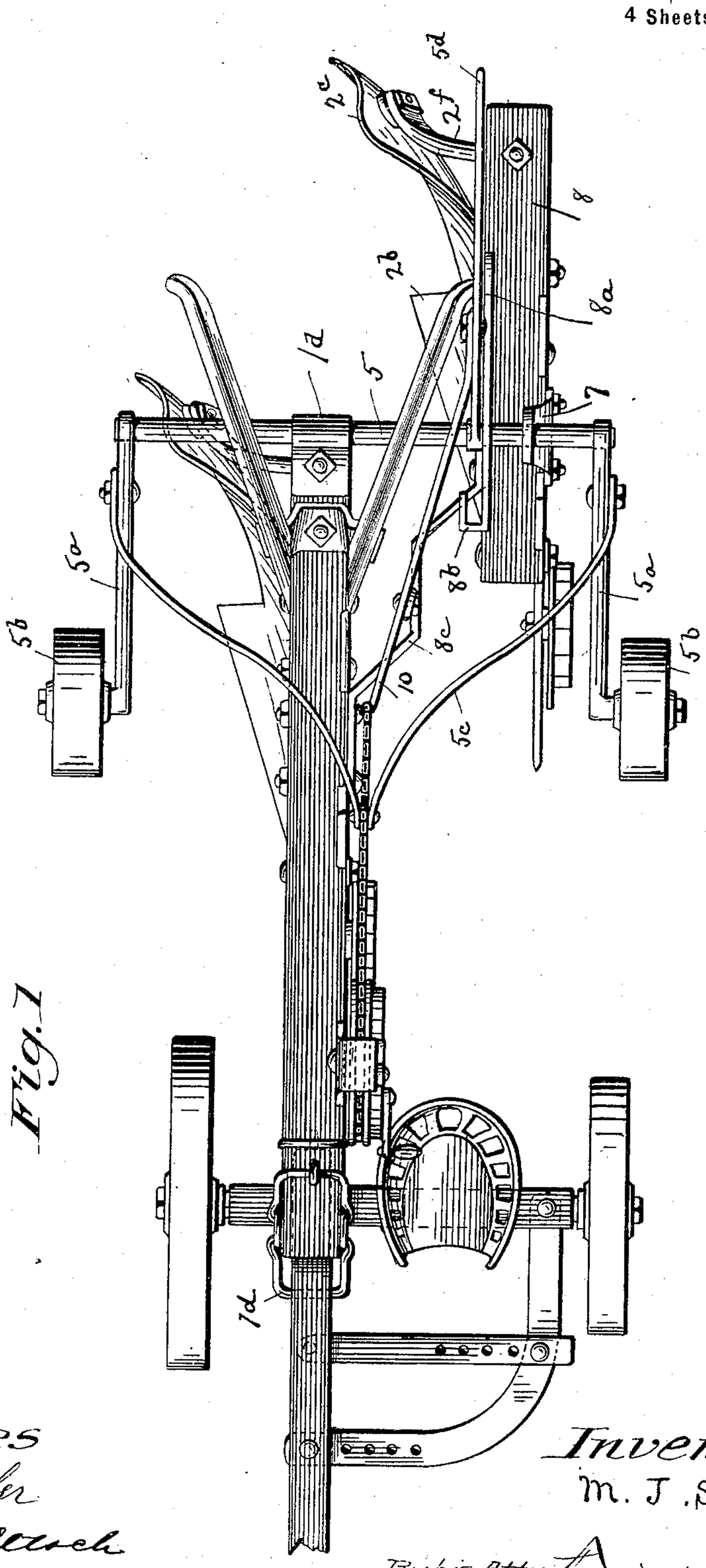

Fig. 1.

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4 Sheets—Sheet 2.

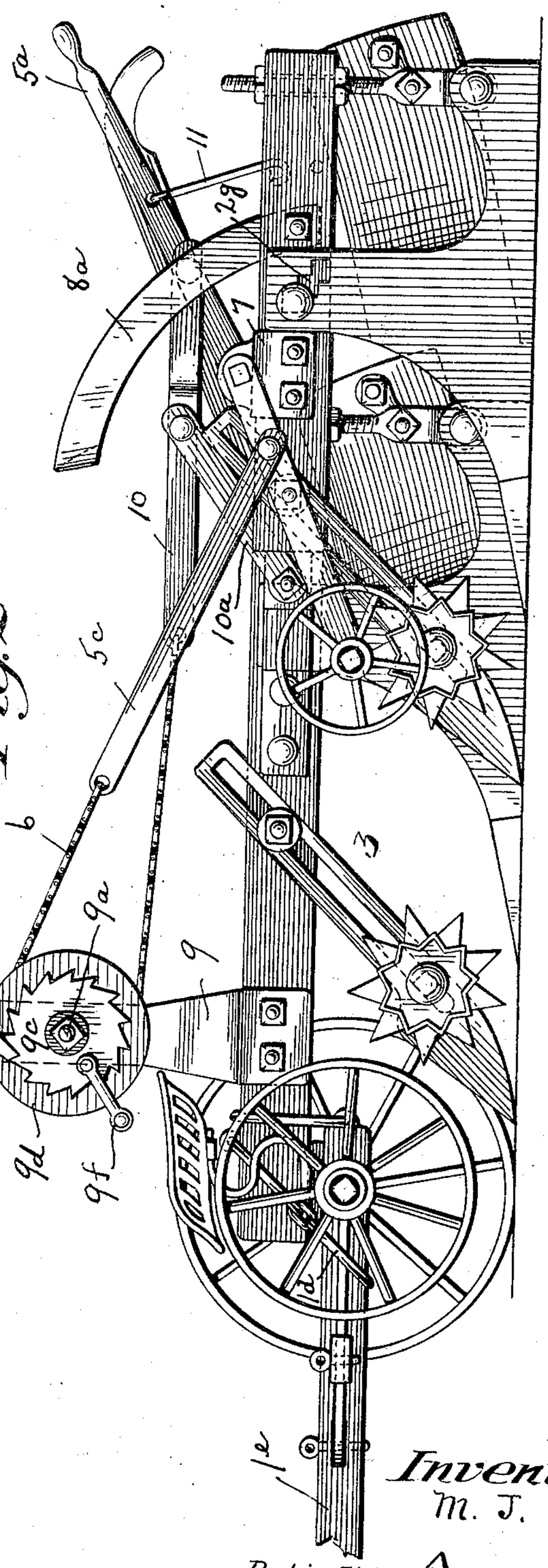

Fig. 2

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(No Model.) 4 Sheets—Sheet 3.

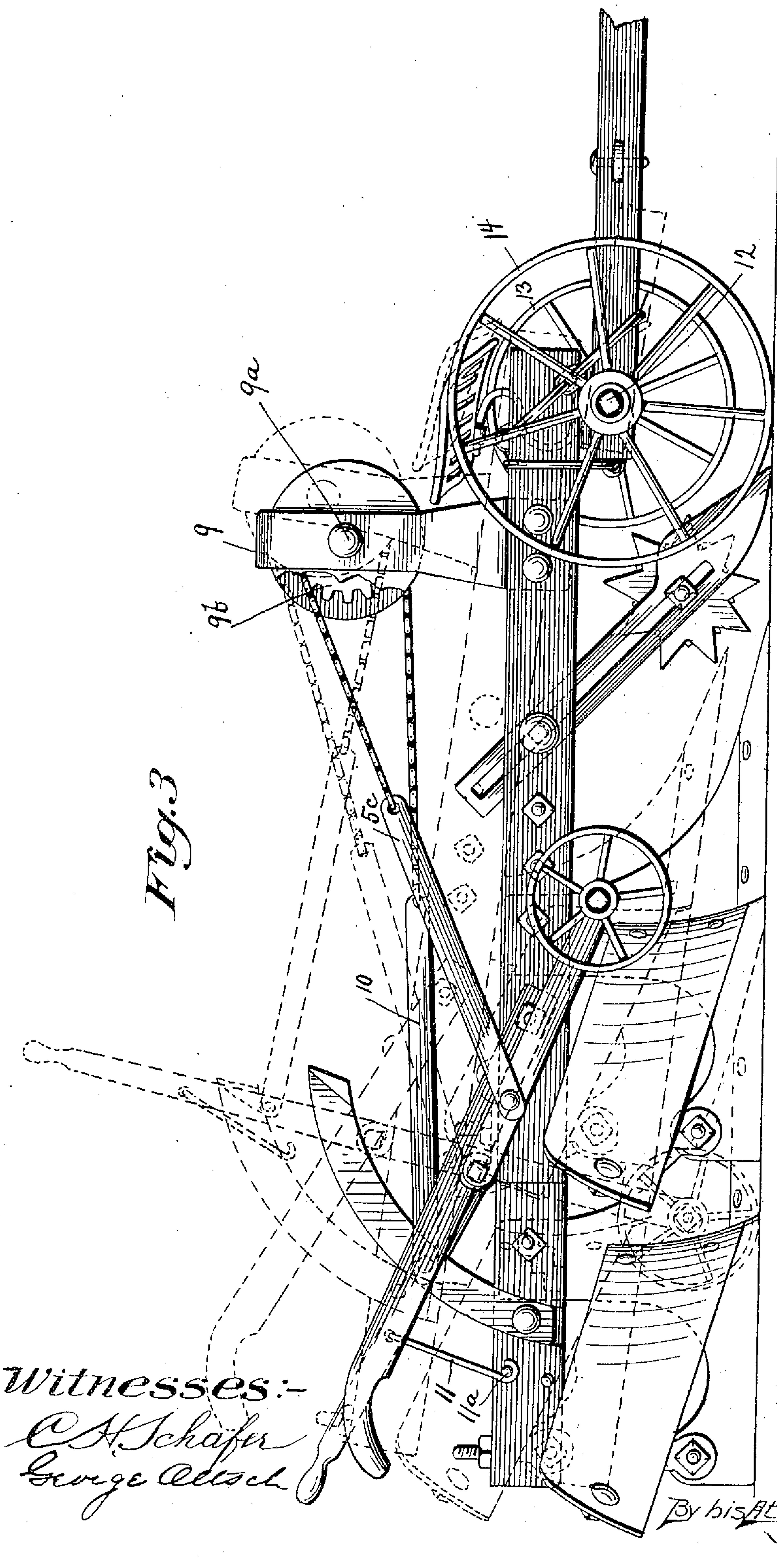

Fig. 3

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No. 628,899. Patented July 11, 1899.

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(No Model.) 4 Sheets—Sheet 4.

Fig. 4

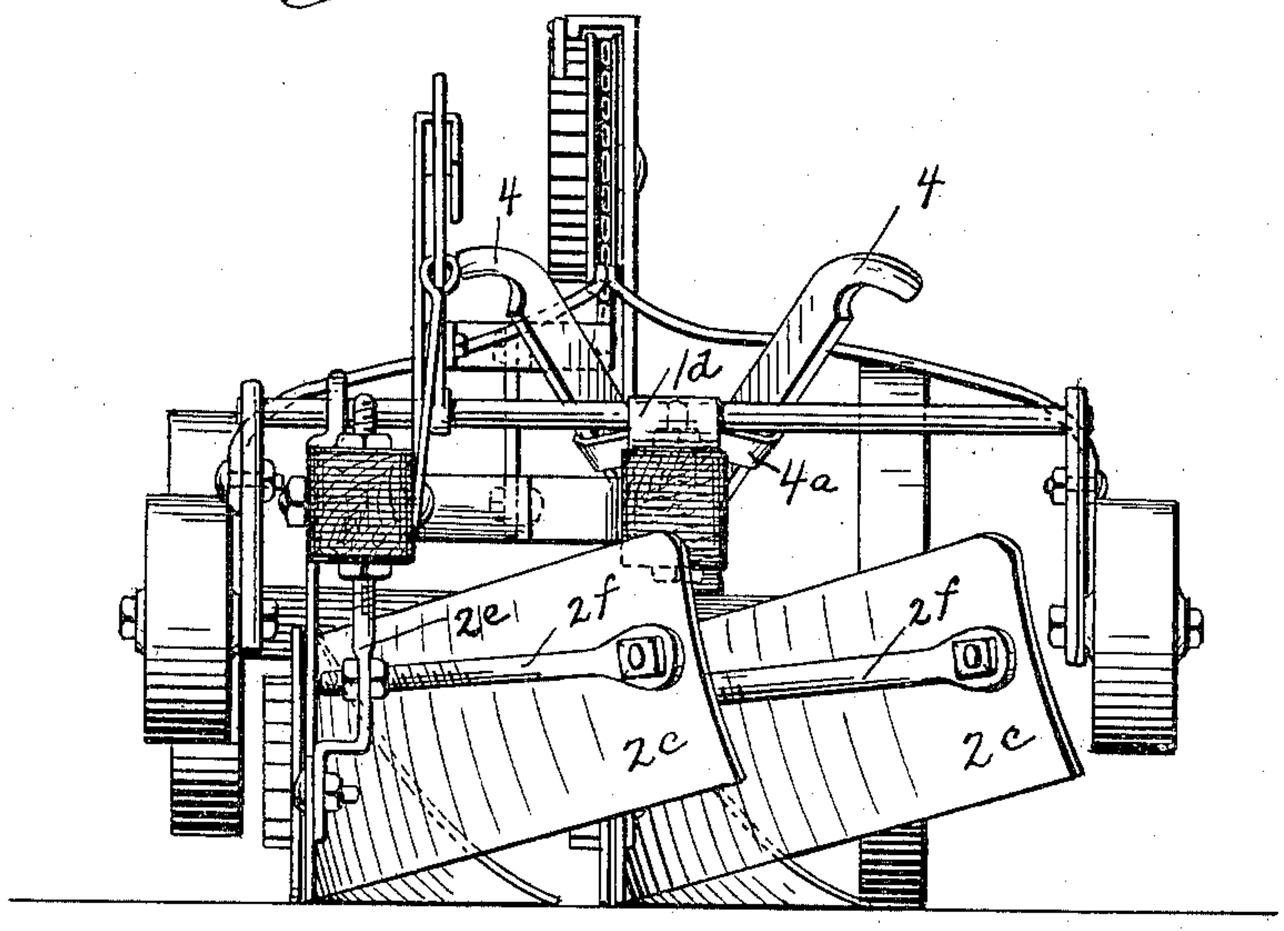
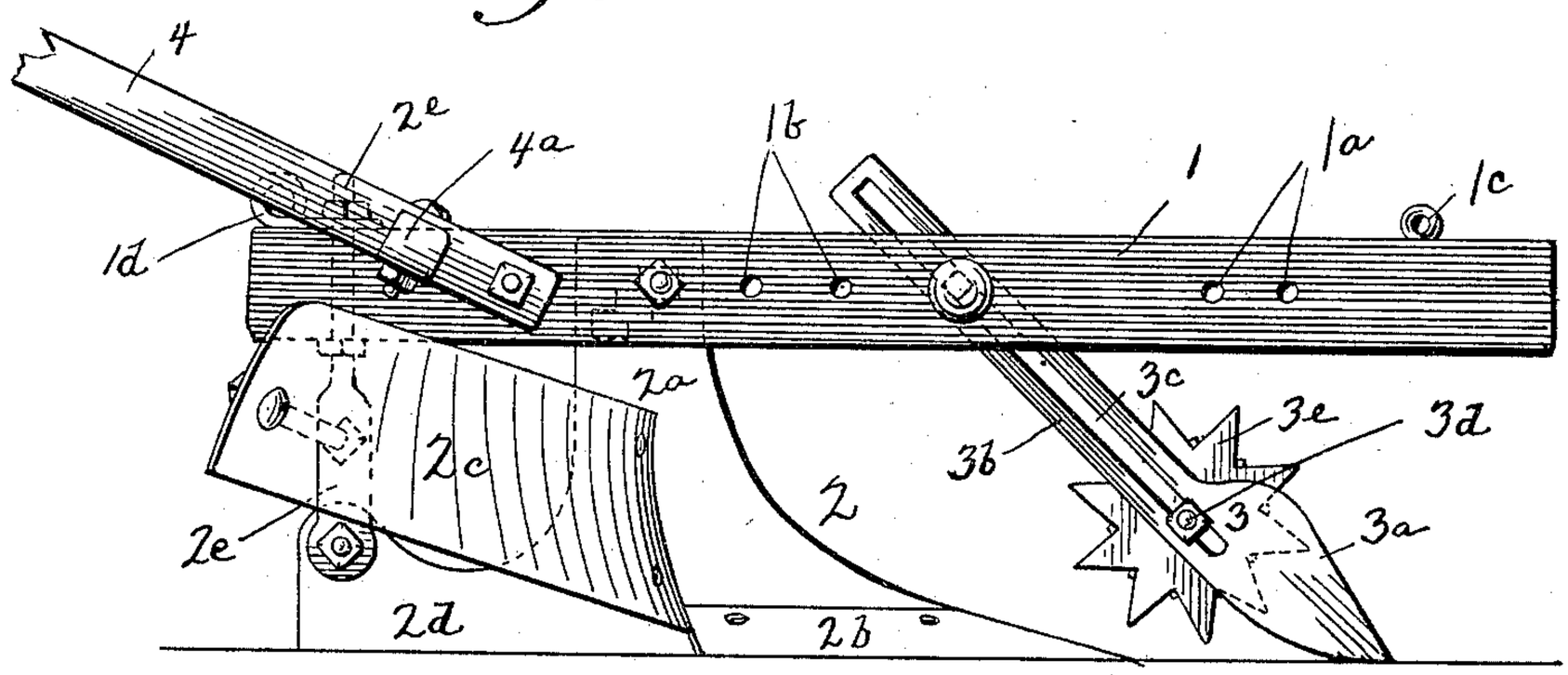


Fig. 5



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UNITED STATES PATENT OFFICE.

MATHIAS J. SEIFRIED, OF SOUTH BEND, INDIANA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 628,899, dated July 11, 1899.

Application filed September 10, 1898. Serial No. 690,644. (No model.)

To all whom it may concern:

Be it known that I, MATHIAS J. SEIFRIED, a citizen of the United States, residing at South Bend, in the county of St. Joseph 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 to improvements in plows, and more particularly to that class of plows in which a plurality of plows proper are employed to turn two or more furrows.

The object of my invention is to provide a plow of this class in which will be combined the advantages of strength, light draft, economy of manufacture, and facility of operation and which may be readily converted from a double-furrow to a single-furrow plow, and vice versa.

The important features of my invention are the means for raising the plows from the ground when they are not in use or for causing them to run shallow when it is desirable to do so, the arrangement for changing the plow from a single-furrow to a double-furrow plow, and the device for automatically clearing the colter of weeds and grass.

Heretofore in plows of this character it has been difficult to simplify their construction without sacrificing strength or efficiency. In my improved plow there are comparatively few parts, and each piece is of plain construction, combining strength with economy of manufacture and permitting quick and firm assembling. Another difficulty with gang or double-furrow plows of common construction is that the draft is increased out of proportion to the advantages secured by the extra work performed. In the perfect balancing and support of the plows in my invention, by which I obtain an equal distribution of the weight and the lines of draft, I am thereby enabled to avoid the disproportionate draft common to other plows of this character.

The objection which has heretofore attached to plows which could be converted from single into double furrow plows has grown out of the fact that the great number of parts, their complicated construction, and inaccessibility have rendered necessary the use of many tools and in some instances the employment of a skilled mechanic in order to effect the desired transformation. I overcome this objection by the simplicity of my invention, wherein by removing four plain bolts, all of which are readily accessible, I can change a complete double-furrow plow into a perfect single-furrow plow. A further and important advantage possessed by my improved plow is that it can be used either as a riding or a walking plow and be operated by one or two men.

My improved attachment for freeing the colter of weeds, grass, or other litter consists of a revolving disk having a serrated edge, which is turned by contact with the ground as the plow advances and is so arranged with reference to the colter that all grass or weeds catching on the colter are immediately thrown off, thus leaving the entire cutting edge of the colter free to act and avoiding the increased draft due to the accumulation of such matters on the colter of ordinary construction.

My invention further consists of other improvements in details, by means of which I accomplish greatly-improved results, as will be hereinafter fully set forth, and it is fully illustrated in the accompanying drawings, which form a part of this application for a patent, and in which—

Figure 1 is a top plan view of my improved plow when arranged to turn double furrows. Fig. 2 is an elevation of the left side of the same. Fig. 3 is an elevation of the right side of the same, the possible elevation of the plows proper being shown by dotted lines. Fig. 4 is a rear elevation, and Fig. 5 is a detail showing the arrangement as a single plow.

Like reference-numerals indicate like parts in the several views.

Reference being had to Fig. 5, it will be seen that 1 represents a plow-beam, which I have shown as made of wood, but which may as readily be made of iron, if desired. Through this beam are transverse holes 1^a in the forward part and 1^b near the central part, through which bolts may be inserted for attaching the plow-elevating mechanism and the second furrow-plow, respectively. Hung from the beam 1 by means of a suitable bolt passing transversely therethrough is the plow proper, 2, which consists of the standard 2^a, share 2^b, moldboard 2^c, and landside 2^d, the construc-

tion of which does not differ from similar parts in plows of ordinary construction. In the upper part of the standard 2^a is a stepped slot 2^g, through which passes the bolt by which the standard is secured to the beam 1^a, said slot permitting an adjustable connection between said beam and standard. Bolted to the heel of the landside 2^d is a hanger-rod 2^e, which is bent inwardly and passes upwardly through the beam 1 and is secured therein by a nut on the threaded end of said rod, the latter being made round where it passes through the beam and its lower portion flat. In addition to bracing and stiffening the rear portion of the landside 2^d this hanger-rod 2^e furnishes a bearing for one end of a brace 2^f, which has its opposite end bolted to the back of the moldboard 2^c, thus supporting the latter.

Forwardly of the plow 2 is a sod-shear or colter 3, having a cutting portion 3^a, from which extends a straight shank or stem 3^b, in which there is a longitudinal slot 3^c, by means of which the colter is adjustably bolted to the plow-beam 1, as clearly shown in Fig. 5. Through the lower portion of the slot 3^c extends a short bolt 3^d, to which is loosely secured a revolving disk 3^e, having a double series of radial points of different lengths and radii, the periphery of which extends above and beyond the cutting edge of the colter. Said disk is normally set so that its points contact with the ground sufficiently to revolve it as the plow moves forward, thus forcing off the weeds and grass that may catch on the colter.

Suitable handles 4 are bolted to the rear portion of the beam 1 in the usual manner, and a yoke 4^a, passing over the beam and under the lower portion of the handles, serves to brace and strengthen them against vertical and lateral strain. Secured in the upper portion and near the forward end of the beam 1 is an eyebolt 1^c, by means of which and a yoke 1^d, which passes through said eye, the tongue 1^e is coupled to the beam 1, said yoke passing around the tongue, as clearly shown in Figs. 1 and 2. If it be desired to use my plow to turn a single furrow, the eyebolt 1^c may be used as the point of attachment for the usual clevis or a doubletree, if a clevis be not required. At the rear end of the beam 1 and secured to the upper side thereof by the hanger-rod 2^e is an eyeplate 1^d, for a purpose to be hereinafter explained.

It will be seen that the construction above described covers a complete plow for turning one furrow. To convert this into a plow for turning two furrows and possessing the advantages hereinbefore set forth, I use the following means:

Through the eye of the plate 1^d is inserted a shaft or bar 5, on the ends of which are rigidly secured hangers 5^a, which carry small wheels 5^b on their outer ends. Bolted to the hangers 5^a near their points of attachment to the bar 5 are bent arms 5^c, which extend inwardly and forwardly and have their forward ends secured to one end of a sprocket-chain 6. Rigidly secured to the bar 5 is a lever 5^d, which extends rearwardly from said bar and is normally set at an angle of about forty-five degrees. The bar 5 passes through a plate 7, to which is bolted the short beam 8 of the second furrow-plow. The plow proper, which is secured to this beam, is in all respects, except the handle, a duplicate of the plow on the main beam—that is to say, there is secured to the beam in the usual manner a plow 2, having a standard 2^a, share 2^b, moldboard 2^c, landside 2^d, and hanger-rod 2^e, with the brace 2^f extending from the back of the moldboard to the rod 2^e. There is also bolted to the beam 8 an upwardly and forwardly extending arm 8^a, which terminates in a hook 8^b, which serves to check and hold the lever 5^d in its upward and forward movement. To secure a sufficiently-rigid connection between the beam 8 and the main beam 1, I provide an angular brace 8^c, which is bolted to said beams by bolts passing transversely therethrough, as shown in Fig. 1. It will be apparent that in order to remove the second furrow-plow it is only necessary to remove the bolts securing the brace 8^c to the beam 1, the plate 1^d, and the bolt securing the outer ends of the arms 5^c.

Bolted to the forward portion of the beam 1 is a standard 9, through which passes a shaft 9^a, on which are mounted a sprocket-wheel 9^b and a ratchet-wheel 9^c, a circular plate 9^d being interposed between said sprocket and ratchet wheels. Pivoted to the upper end of the standard 9 is a gravity-pawl 9^e, the free end of which engages the teeth of the ratchet-wheel 9^c, as illustrated in Fig. 2. Secured to the ratchet-wheel 9^c is a crank 9^f, by means of which the driver of the plow may cause the ratchet-wheel and the shaft to which it is secured to revolve and carry with it the sprocket-wheel 9^b, which is also secured on the shaft 9^a. Traveling over the sprocket-wheel 9^b is a sprocket-chain 6, one end of which is secured to the forward ends of the arms 5^c and the other end to the forward end of the bar 10, the rear end of which is pivoted to the lever 5^a. A link 10^a connects the bar 10 with the beam 1 and forms a fulcrum for said bar when the lever 5^a is depressed or raised.

In the operation of my improved plow for turning two furrows the parts are normally in the position shown in Fig. 2. In turning a sharp corner or at other times when it is desirable to raise the plows out of the ground the driver by turning the crank 9^f will draw the lever 5^a forward, which, being rigidly secured to the bar or shaft 5, will cause it to revolve and carry with it the hangers 5^a, lowering these until the wheels 5^b strike the ground, as shown by dotted lines in Fig. 3, the necessary effect of which will be to elevate the beam 1 and all the parts which are rigidly secured thereto. The same result may be obtained by raising the lever 5^a manually by the

plowman walking behind the plow. A hook 11, secured to the lever 5^a, may be used to lock the latter down by passing the lower end of said hook over a pin 11^a, secured in the beam 8. The forward end of the plow-beam 1 is supported by an axle 12, which carries on its left-hand end the land-wheel 13 and on its right-hand end the furrow-wheel 14, the diameters of said wheels being suited to the different levels of the ground over which they travel.

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

1. In an implement of the character described, a beam, a plow secured to the beam, a colter having a longitudinal slot therein, secured to the beam, and a disk having a double series of radial teeth of different lengths, adjustably secured to the colter and adapted to be rotated by the forward movement of the implement, for the purpose and in the manner described.

2. In an implement of the character described, a beam, a longitudinally-slotted colter secured to the beam, a disk having a double series of teeth of different lengths, adjustably secured to the colter, and adapted to be rotated by the forward movement of the implement, a second beam secured to the first-named beam and carrying a plow, and means for raising and lowering said plow from said first-named beam, substantially as set forth.

3. In an implement of the character described, a main beam and an auxiliary beam removably secured to the main beam, slotted colters secured to said beams, rotatable disks having teeth of different lengths and adjustably secured to said colters, and means for elevating said auxiliary beam consisting of a shaft carrying wheels adapted to rest on the ground, a lever secured to said shaft, a sprocket-wheel secured to the main beam, and chain-and-rod connections between said sprocket-wheel and said lever, substantially as set forth.

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

MATHIAS J. SEIFRIED.

Witnesses:

GEORGE OLTSCH,

HUGO OLTSCH.