

No. 694,672.

Patented Mar. 4, 1902.

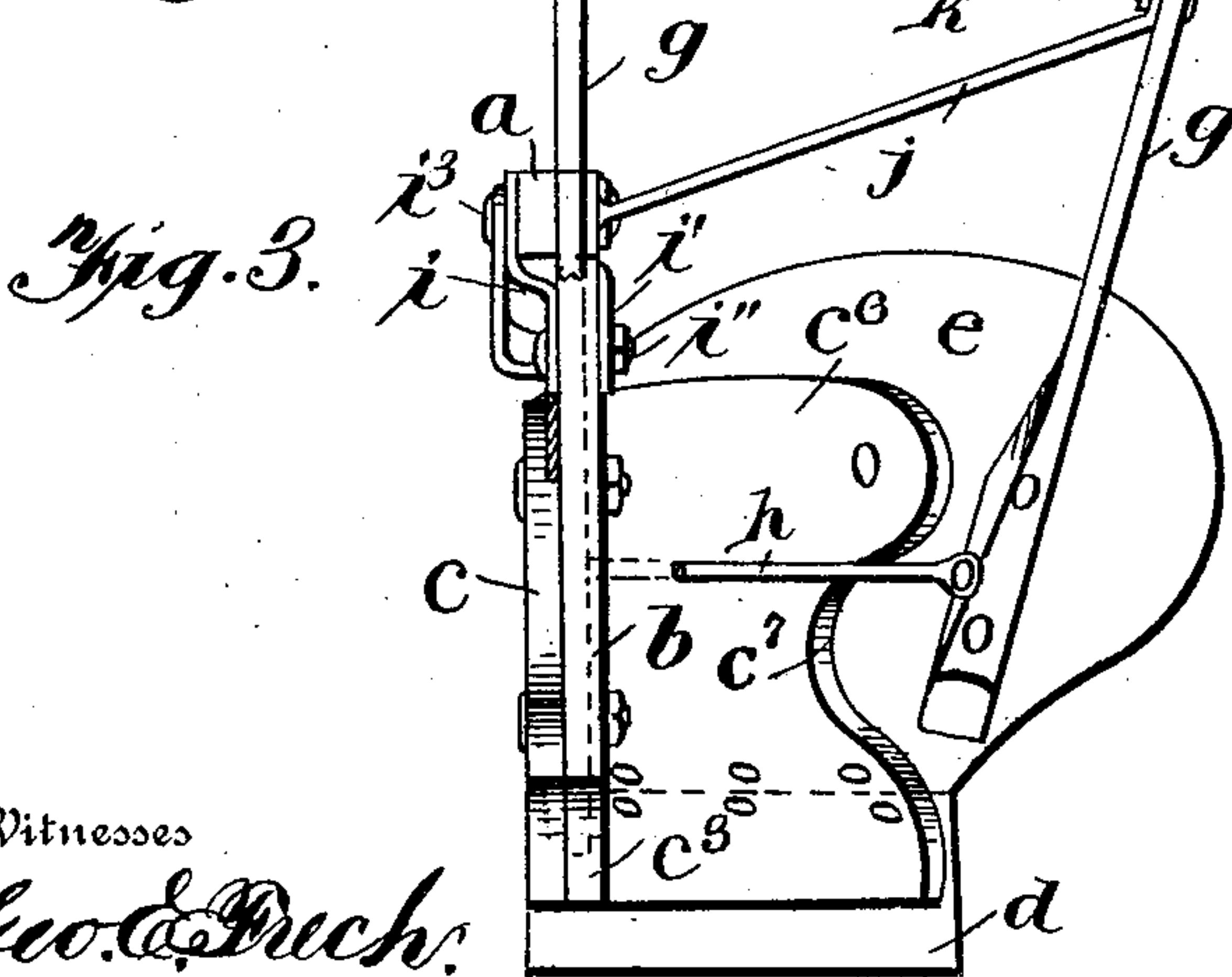
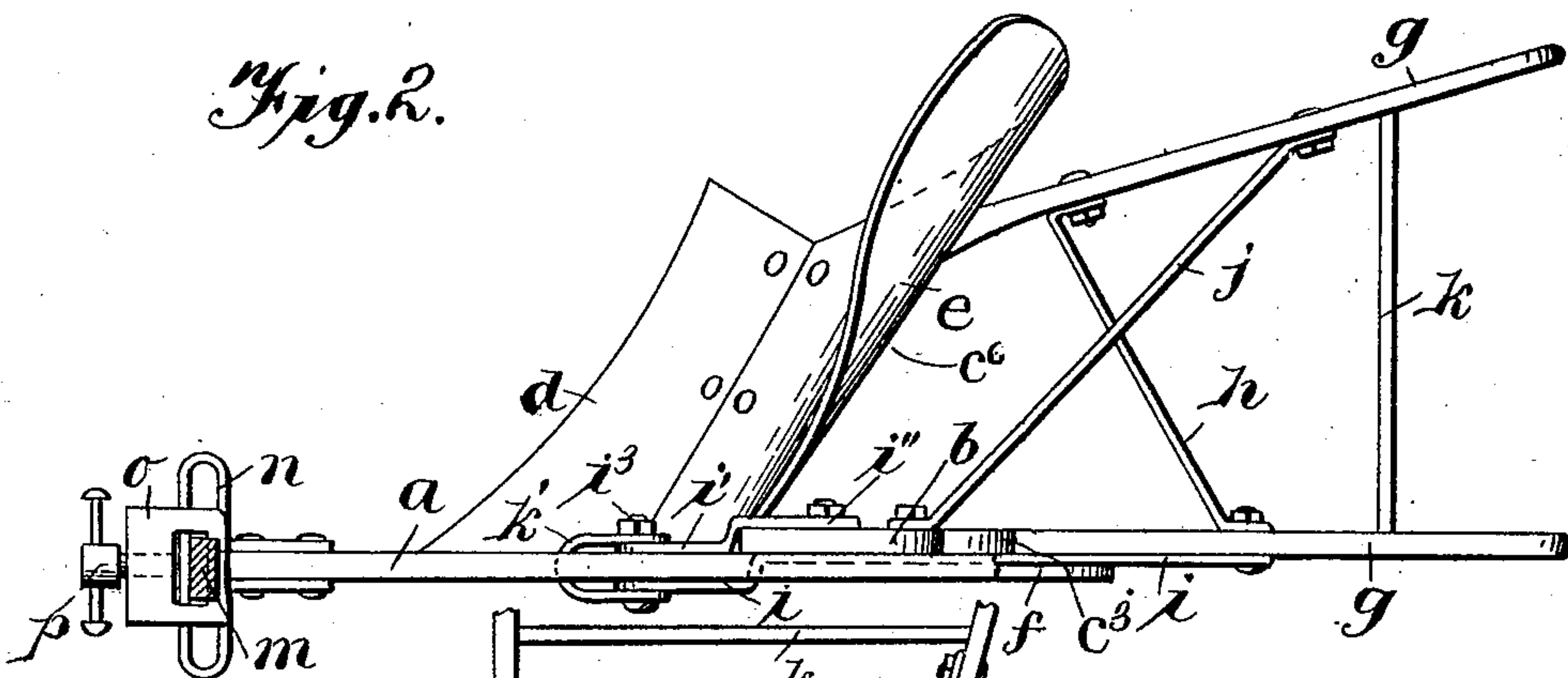
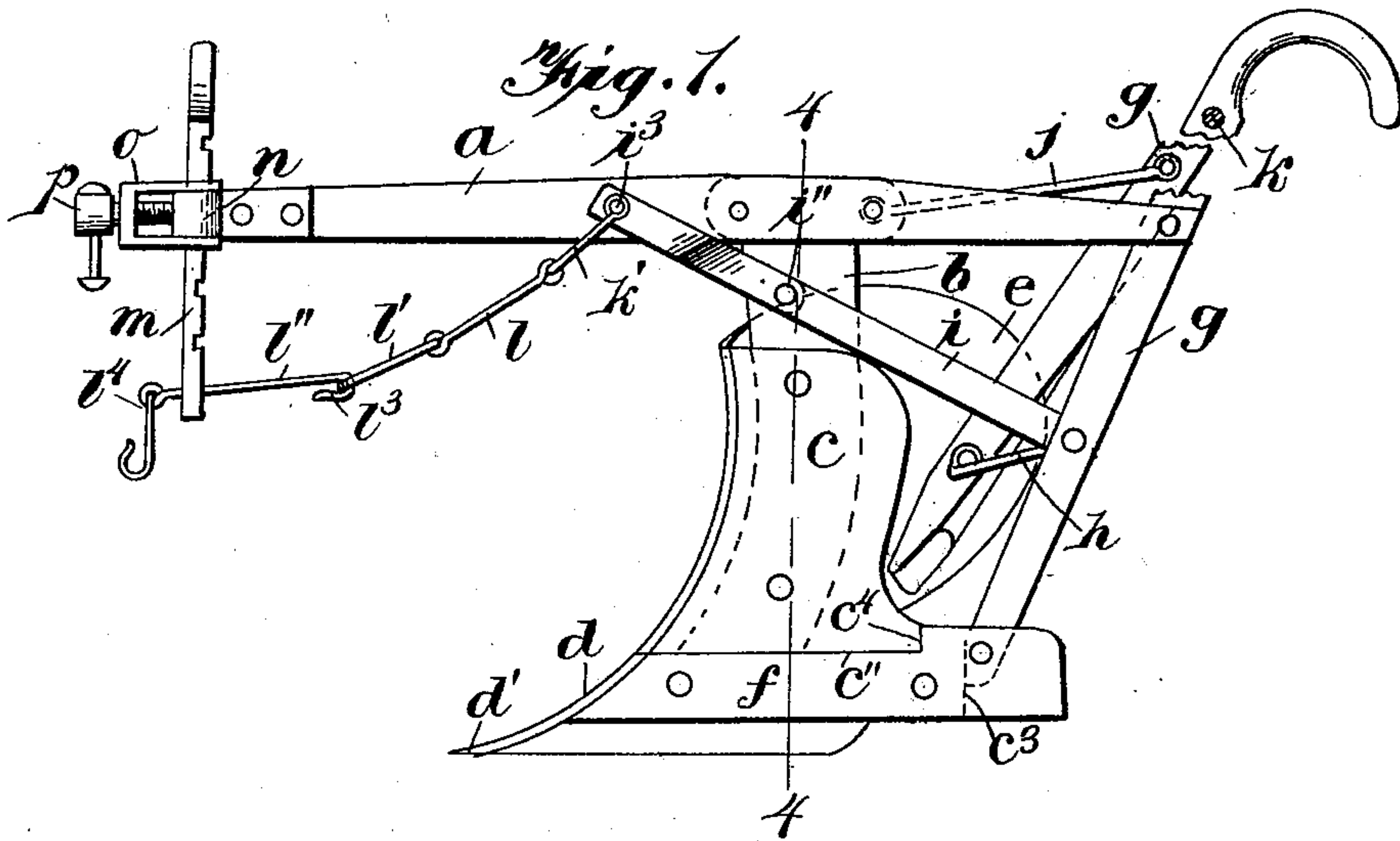
A. SCHULZ.

PLOW.

(Application filed Sept. 3, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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2 Sheets—Sheet 2.

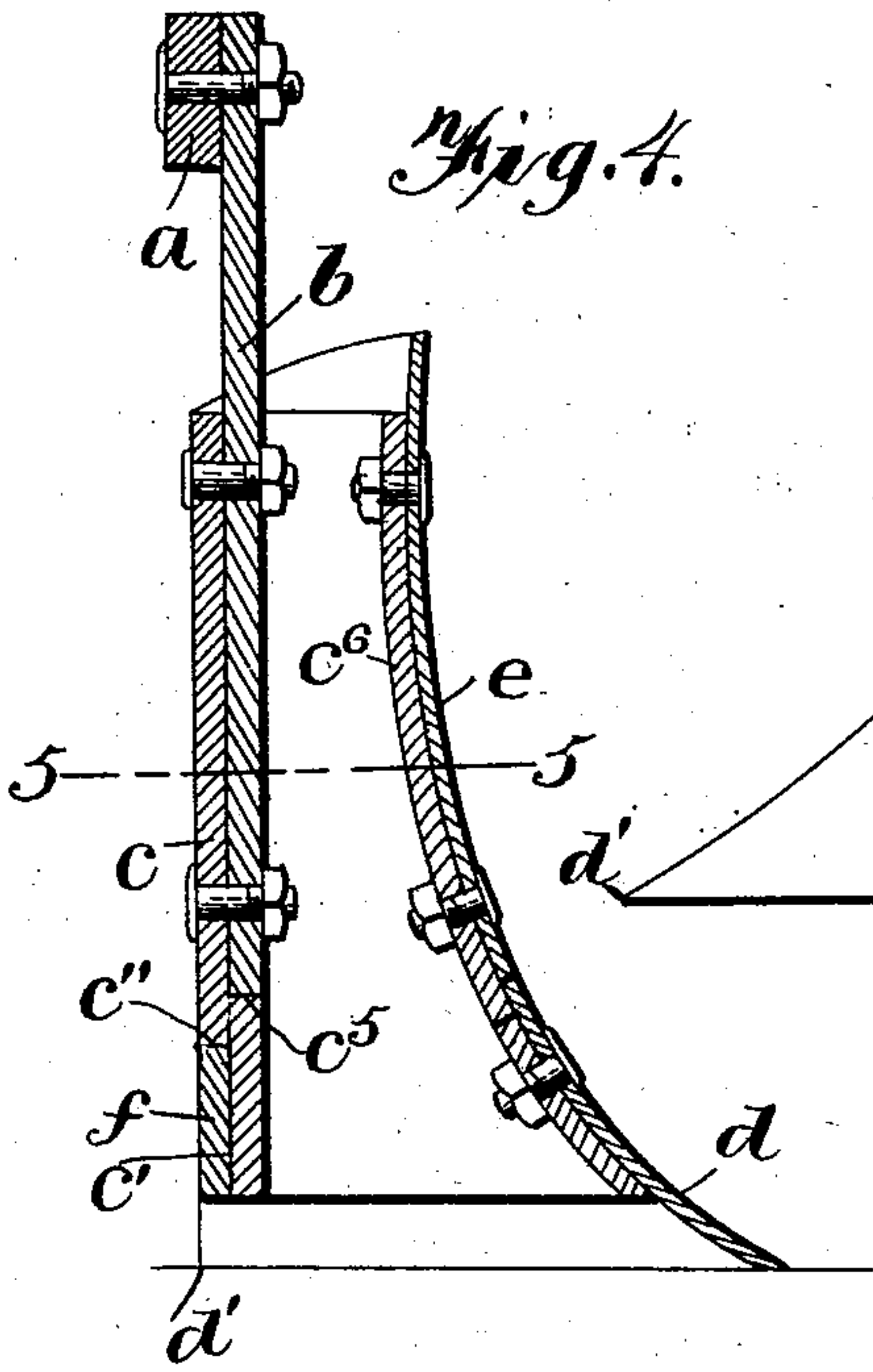


Fig. 5.

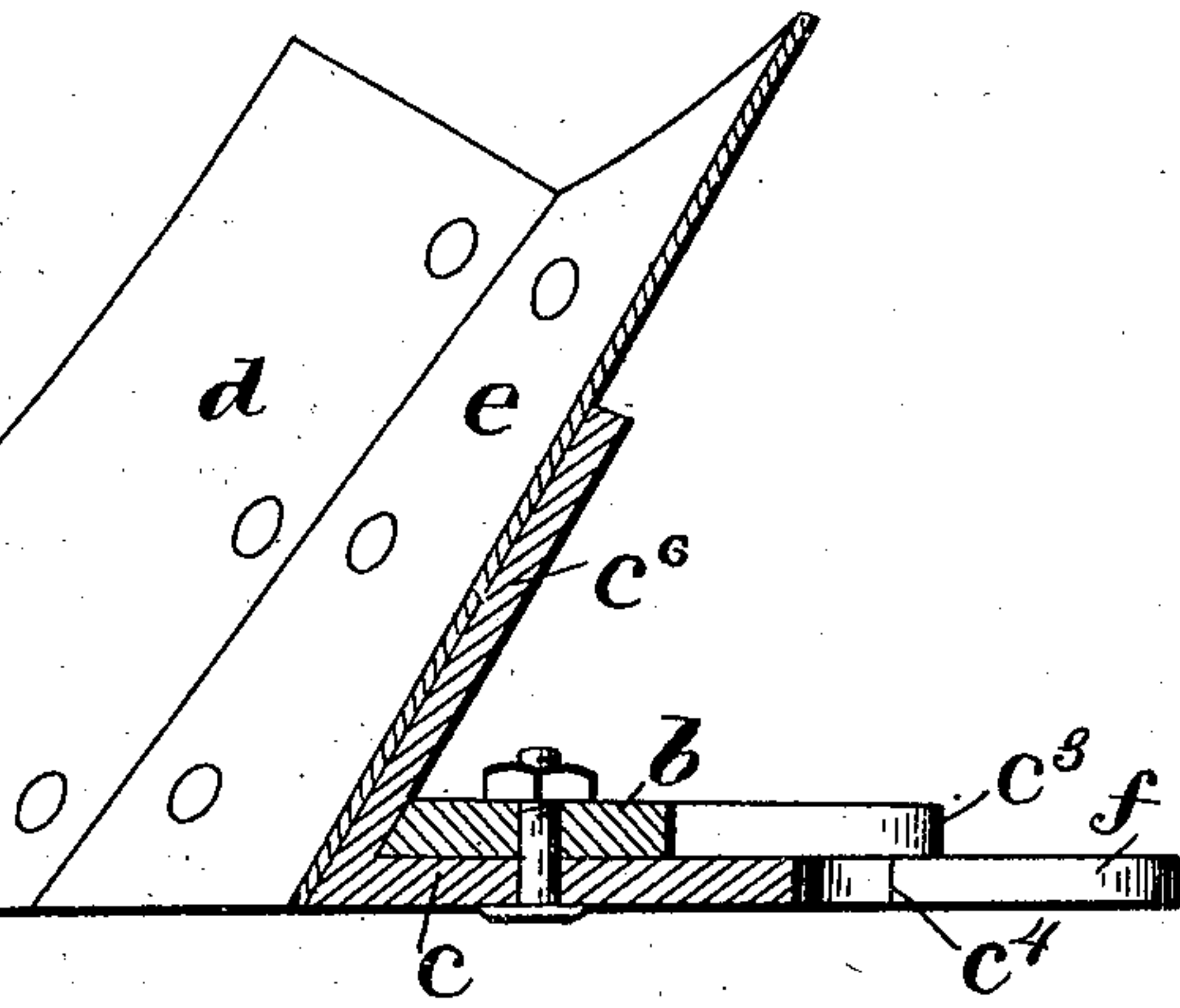


Fig. 8.

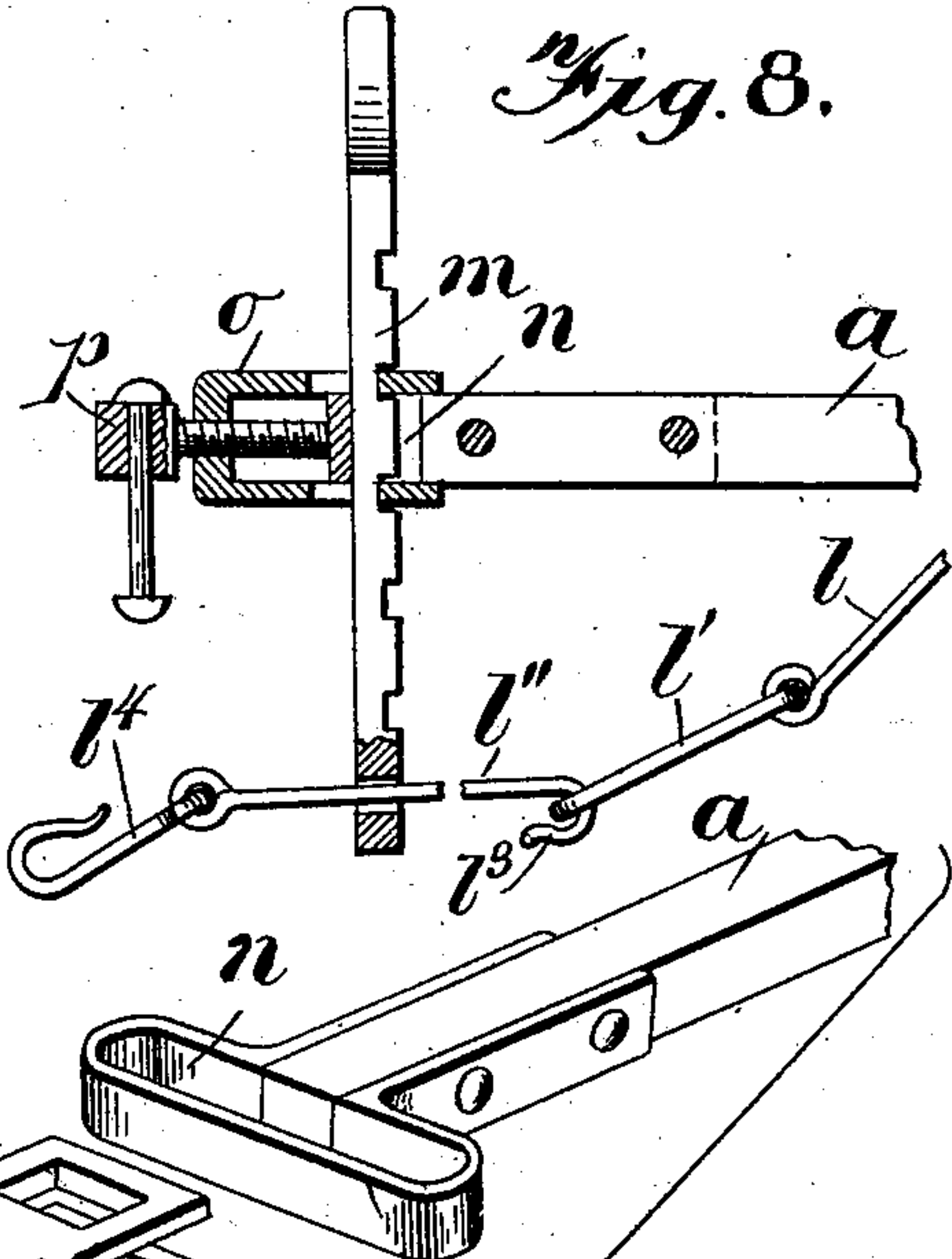


Fig. 6.

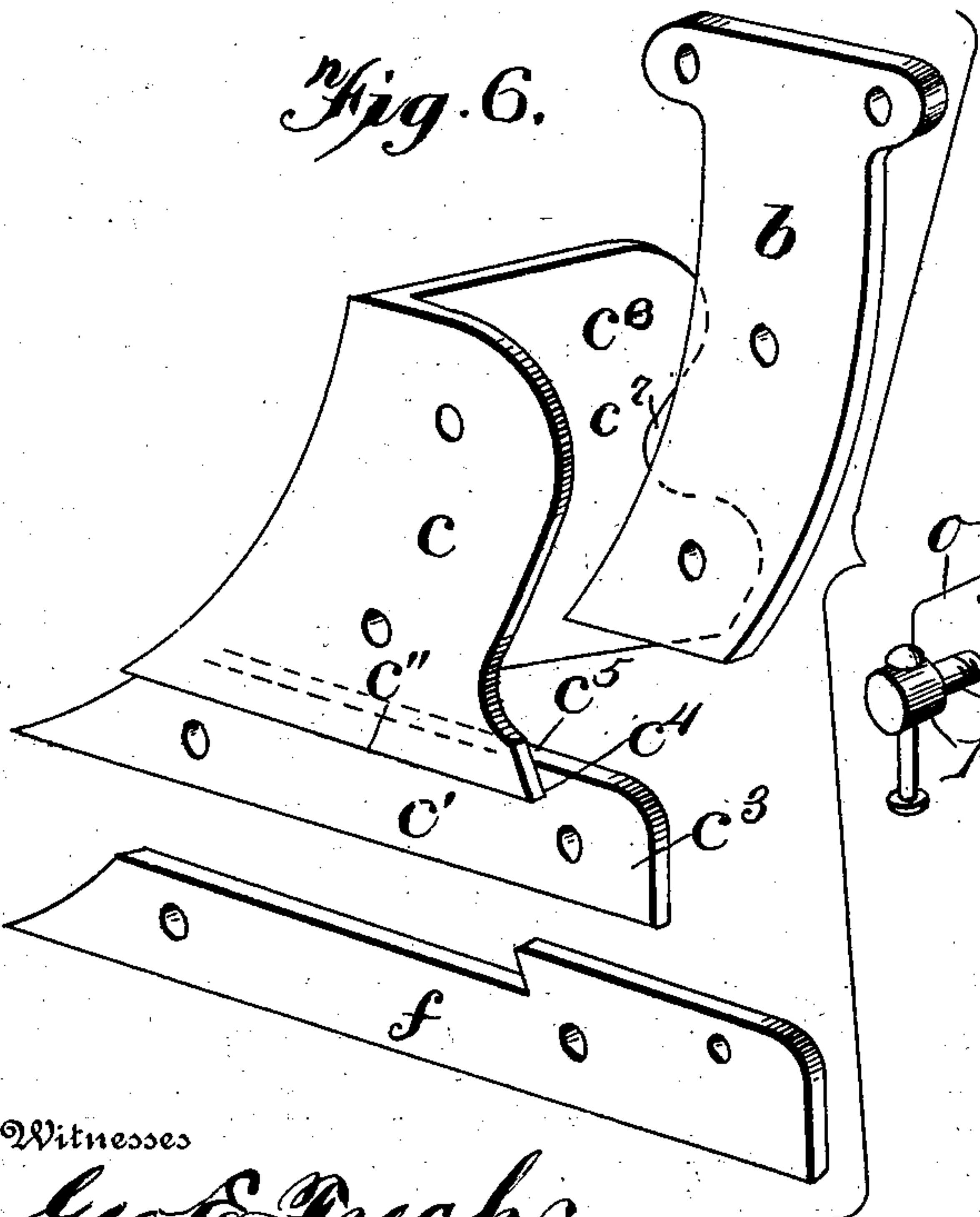
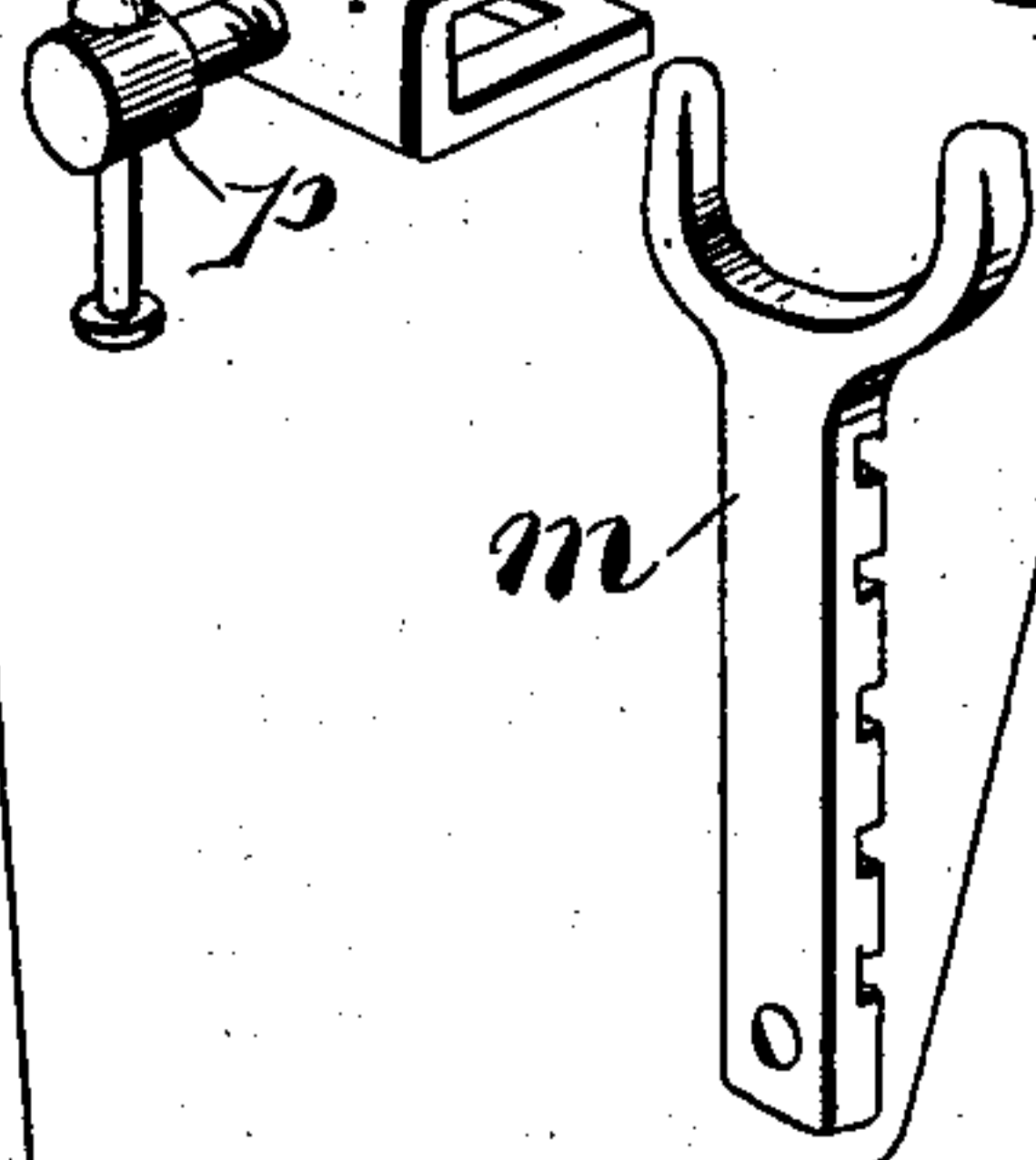


Fig. 7.



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ADOLPH SCHULZ, OF CHICAGO, ILLINOIS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 694,672, dated March 4, 1902.

Application filed September 3, 1901. Serial No. 74,208. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHULZ, a subject of the Emperor of Germany, residing at Chicago, Cook county, Illinois, 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.

This invention relates to certain improvements in plows; and the objects and nature of my invention will be readily understood by those skilled in the art in the light of the following explanations of the example shown in the accompanying drawings of one construction, among others, within the spirit and scope of my invention.

My invention consists in certain novel features in construction and in combinations or arrangements of parts, as more fully and particularly set forth hereinafter.

Referring to the accompanying drawings, Figure 1 is a side elevation of my plow from the landside. Fig. 2 is a top plan view, the rear portion of the plow-beam being broken away to show the brace secured to the plow-beam, standard, and one of the handles. Fig. 3 is a rear elevation of the plow, one of the handles being partially broken away to show the plow-standard. Fig. 4 is a detail cross-sectional view on the line 4 4, Fig. 1, to show the landside sole or shoe seated in the recess in the landside face of the plow-body or casting and also showing the lower portion of the plow-standard stepped or seated on the shoulder at the inner surface of the landside of said casting. Fig. 5 is a longitudinal sectional view on the line 5 5, Fig. 4, showing the plow-standard fitting in the inner vertical angle of the plow-body or casting and also showing the means for adjusting and locking the draft devices. Fig. 6 is a detail perspective view of the plow-body or casting, the plow-standard, and the landside sole or shoe, showing said parts separated from each other. Fig. 7 is a detail perspective view of the parts of the draft adjustment, said parts being shown separated to clearly bring out the structure of each element.

In the drawings, *a* is the plow-beam, which

is strong and durable in structure and is preferably formed of steel or other suitable metal.

b is the plow-standard, at its upper end rigidly secured to the plow-beam and depending therefrom at a point intermediate the length of said beam and some distance, as herein-after set forth, from the rear end of said plow-beam. This standard *b* is strong and durable in construction and is preferably flat and at its upper end overlaps and is bolted or otherwise secured rigidly to the plow-beam. The front edge of the standard is longitudinally concaved or curved downwardly and forwardly and if necessary transversely beveled to fit snugly and closely in the front inner angle of a cast or otherwise-formed metal body or frame. This body is usually cast in one piece and is strong and durable in construction, with the vertical landside face *c*, which is recessed across its lower end from the front edge of the casting to the rear thereof to form the horizontal bottom seat or socket *c'*, having the horizontal straight upper edge or downwardly-facing shoulder *c''*. The lower portion of the landside of said casting has the rearward extension *c³*, forming a rearward extension of the flat vertical wall or face of said depressed seat or socket *c'* and also forming the rearwardly-facing shoulder or edge *c⁴* at the rear end of and about at right angles with the horizontal edge *c''*. The inner face of the landside portion of said body or frame is preferably flat down to an upwardly-facing horizontal shoulder *c⁵*, extending rearwardly from the front inner angle of the body to or approximately to the rear edge of the landside of said body. *c⁶* is a wing extending rearwardly and outwardly at an angle from the front edge of said landside portion of said body. This wing is preferably of the same height as the landside of said body, and the lower edge of the wing is usually in the same horizontal plane as the lower edge of the landside of the body. The front edge of the cast body where the said wing and landside portion meet is preferably longitudinally concaved or extends downwardly and forwardly, and the wing is concaved to conform to the usual curvature of a plow-moldboard. The rear edge of the wing

is preferably recessed at c^7 , at a point between the top and bottom edges of the wing, for the purposes hereinafter set forth. The plow-standard fits snugly up into the front inner angle of said cast body or frame, and the front edge of the standard throughout its length conforms longitudinally to and abuts against said inner front angle of said body and extends throughout the length thereof down to the inner upwardly-facing shoulder c^7 , on which the lower end of the standard rests. The flat side face of the standard rests against and is parallel with the flat inner face of the landside portion of the cast body, and the body and standard are rigidly united by transverse bolts or other suitable fastenings passed through the standard and said landside portion of the body.

d is the plowshare, of the proper form and shape, which is rigidly bolted or otherwise secured to the lower portion of the wing of the cast frame or body, preferably so as to project forwardly and to a plane below the lower edge of said cast body, and also, if desired, the front end of said share can be extended forwardly to form the plow-point d' .

e is the moldboard, of any suitable and desirable construction, and which is fitted on and bolted or otherwise secured to said wing of the cast frame or body, so as to extend rearwardly therefrom and usually upwardly therefrom. The moldboard and share can be formed of sheet-steel or can be otherwise formed of suitable material and shape to be readily bolted or otherwise secured rigidly on the cast body, preferably so that said moldboard and share can be removed for repairs or replacement when desired. The securing-bolts or machine-screw are passed transversely through the moldboard, share, and wing of the cast body or frame, and if bolts are employed the nuts can be located on the inner ends of the bolts at the inner face of the wing of the cast body.

If desired, the front vertical edges of the share and moldboard can project slightly beyond the plane including the outer vertical face of the landside portion of the cast body and the shoe or sole, hereinafter referred to. However, I do not wish to limit my invention in this respect.

f is a shoe or sole formed in one piece of steel or other suitable hard rigid durable material. This shoe at its front end conforms to and abuts against the rear face of the front end of the share and from thence extends rearwardly along the outer face of the lower end of the landside portion of the cast body to a point in rear thereof. The shoe is formed long and flat to fit in the horizontal bottom depressed seat of the landside of the cast body and of such thickness that its outer face is approximately flush with or in the same vertical plane as the outer face of the landside portion of the cast body above the said shoe. The upper longitudinal edge of the shoe is formed to abut against the correspond-

ing top edge or shoulder of said horizontal depressed seat, while the lower edge of the shoe extends, preferably, below the plane of the lower edge of the cast body. The shoe projects rearwardly along to a point in rear of the rearward extension of the landside portion of the cast body. The upper edge of the rear portion of the shoe is extended upwardly and formed with a forwardly-facing shoulder, corresponding to and abutting against the shoulder c^4 of the cast body. The shoe is rigidly secured to the cast body by bolts, screws, or other fastening means preferably passed transversely through the shoe and landside portion of the cast body, and the fastening means are preferably of such character that the shoe can be removed for repair or replacement.

$g g$ are the handles, which are preferably formed of steel or other metal and are strong and durable in structure. The landside-handle is at its lower end arranged at the inner face of the rearwardly-extended end of the shoe and is rigidly secured to said shoe by bolts, screws, or other fastening means. The moldboard-handle is rigidly secured to the moldboard, preferably at the rear face thereof and in rear of the cast body. The recess c^7 is usually provided in the wing of the cast body to permit the moldboard-handle being secured to the moldboard at an advanced forward point.

h is a metal cross-brace rigidly secured to and uniting the lower portions of the two handles, said brace being located in rear of said cast body.

i is an upwardly and forwardly inclined strong metal strap or brace, at its lower rear end secured to the landside-handle and at an intermediate point crossing the landside-face of the standard and rigidly secured thereto at a point above the cast body and from thence crossing and rigidly secured to the plow-beam at a point in advance of the plow-standard. The plow-beam is extended rearwardly from the standard and at its rear end is rigidly secured to the landside plow-handle.

j is an inclined metal brace, at its forward end secured to the upper end of the plow-standard and from thence extending and secured to the moldboard-handle, usually below the upper cross-bar k between said handles.

i' is an inclined metal strap or brace corresponding to and usually parallel with brace i , but located on the moldboard side of the beam and standard and crossing and rigidly secured to only said beam and standard. If desired, the same bolt or bolts i'' can be employed to secure both straps to the standard by passing said bolt transversely through the standard and said straps. Also a single strong draft pin or bolt i^3 can be employed to secure the front ends of said two braces or straps $i i'$ to the beam by passing said bolt transversely through the straps and the beam.

If desired, I can hang the draft clevis or

loop k , on the pin or bolt i^3 , so that the clevis hangs or is located beneath the beam and in advance of the standard.

The draft is coupled through the medium of suitable connections to said clevis k' . For instance, I show a draft connection extending forwardly below the plow-beam and at its rear end coupled to said clevis, while means for adjusting said connection vertically and laterally independently of the beam is provided at the front of the beam and draft connection. I prefer to form this connection of several loosely-jointed rods with an intermediate connection, permitting disconnection of the rods. For instance, the rear rod l is loosely coupled to the clevis k' by a hook or eye, and the front end of the rod is loosely coupled to a loop, link, or ring l' by a hook or eye. The forward rod l'' is formed at its rear end with a hook l^3 , detachably receiving the said loop or link l' , so that said forward rod can be easily detached, when desired, from the remainder of the draft connection. The front end of rod l'' is provided with any suitable draft attachment to which the draft-animals can be hitched. For instance, I show a hook l^4 , loosely confined to the front end of said rod. The said front rod l'' passes loosely through an opening or eye in the lower end of a vertically-disposed supporting bar or plate m and is removable therefrom when released from link l' . This bar m is supported at the front end of the beam, and means are provided for adjusting said bar m vertically to raise and lower said draft connection and to adjust said bar m horizontally to shift the draft connection accordingly.

n is a horizontal metal loop or eye secured rigidly to the front end of the beam and located in advance of the front end of said beam and elongated transversely of the beam, so that the eye or loop is long and narrow, with a vertical opening.

o is a U-shaped metal clip or plate having the vertical front end in front of the front wall or ply of said loop and the two horizontal parallel rearwardly-extending plates or wings located, respectively, above and below said loop and preferably extending rearwardly beyond the rear wall or ply thereof, so that the clip is carried by the loop and can be moved thereon longitudinally of the loop, but transversely of the length of the plow-beam.

p is a clamping-screw provided with a suitable handle and passing rearwardly through a tapped hole in the front end of the clip, so that the rear end of the screw can engage the front wall of the loop. The said horizontal plates of the clip are formed with vertical openings in the vertical plane of the opening of the loop, and the draft-connection guide and supporting-bar m , passes vertically through the loop-opening and through said openings in the horizontal plates of the clip. The openings in said plates of the clip are so formed that when the screw p is loosened to

the necessary extent said bar m can be freely moved vertically through the clip and loop to raise or lower the draft connection. The rear vertical face of the vertical bar m is formed with a series of transverse equally-spaced notches so spaced as to receive the edges of plates of the clip located at the rear sides of the openings therethrough when the screw is tightened, and the clip is consequently drawn forward to tightly grip the bar m between the clip and front wall of the loop, and thus lock the bar m against vertical movement and the clip against horizontal movement. By providing the series of notches the bar m can be held in a fixed vertical adjustment when the screw has been loosened sufficiently to permit horizontal adjustment or sliding of the clip, carrying the bar longitudinally of the loop. Also the notches hold the bar against slipping down and disarranging the adjustment in the event of the screw becoming loose. In effecting vertical adjustment of the bar m it is necessary to loosen the screw to such an extent that the clip can be moved rearwardly a sufficient distance to allow the bar m to press forward and release its notches from the said edges forming the rear walls of the openings receiving the bar m .

The upper end of bar m can be enlarged, if so desired, to prevent the bar dropping down through the clips when the bars are loosened for adjustment.

If desired, the bar m can be lifted completely from the clip by releasing the draft connection from the lower end of said bar, which is possible by reason of the detachable joint or connection between the rods of said draft connection.

Material advantages are attained by employing the draft connection formed or jointed rods with an intermediate detachable connection between the rods.

The cast or metal body or frame forms a most strong, rigid, and durable support and backing for the moldboard, share, and shoe or landside and renders the plow most rigid and durable and also permits easy removal and replacement of these parts for repairs or where moldboards, shares, or landsides of different shapes or sizes are desired for different work. If need be, these working parts of the plow can be lighter in weight or construction, because of the strong rigid backing or support afforded by the cast body or frame.

By reason of the peculiar arrangement of the plow-standard and said metal body or frame and the way in which these two parts are fitted together and united the plow is rendered exceedingly stiff and strong. The strength, stiffness, and durability of the structure is also increased by the peculiar bracing from the beam to the standard and handles and by the attachment of the draft at or about the junction of said braces with the beam. Advantages are also attained by the peculiar manner in which the shoe or landside is fitted

to the body or frame and arranged with respect thereto and adjacent parts.

The draft appliances shown and described are not claimed herein, but form the subject-matter of my divisional application filed February 7, 1902, Serial No. 93,070.

It is evident that various changes and modifications might be made in the forms, arrangements, and constructions of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the structure exactly as shown and described, but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

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

1. In a plow, in combination, an angular metal body or frame formed in one piece with a landside portion and a wing to receive the moldboard and share, the landside portion having an upwardly-facing shoulder at the lower portion of its inner face, a shoe secured at the lower end of the outer face of said landside portion, and a plow-beam having a standard secured and fitted in the inner angle of said body with its vertical front edge vertically abutting said body at said angle and having its lower end seated on said shoulder, substantially as described.

2. In combination, in a plow, an angular body or frame formed of one piece of metal with a wing to receive the moldboard and share and a vertical flat landside having the bottom horizontal depressed seat with a horizontal downwardly-facing top shoulder at the rear terminating in a rearwardly-facing shoulder, and a flat horizontally-disposed shoe or landside fitted in said seat and secured to said body and having a rearwardly-extended portion with a shoulder corresponding to and abutting against said rearwardly-facing shoulder of said body, substantially as described.

3. In combination, in a plow, a body or frame formed of one piece of metal with a wing and a landside portion meeting at the front edge of said body, the lower part of the inner face of the landside portion having a shoulder, a plow-beam having a depending standard fitting in the inner angle of said body having its front edge longitudinally conforming to and abutting against said inner angle of the body and its lower end abutting against said shoulder, said standard having a flat face fitting against said landside portion of the body, means securing said standard to said body and a landside, moldboard, and share secured on said body, substantially as described.

4. In combination, in a plow, a metal body or frame formed of a wing and a landside meeting at an angle at the front edge of the body, said landside having the horizontal depressed seat extending across the outer face of its lower end and extended rearwardly, a flat shoe fitted in said seat and secured to said body with its outer face flush with the outer

face of said landside above the shoe, said shoe extended rearwardly beyond the body, a plow-beam having a standard secured and fitting vertically in the inner angle of the body, and plow-handles, one of which is secured to the rear portion of said shoe, substantially as described.

5. In combination, in a plow, the angular body or frame formed of one piece of metal with a wing and a landside a moldboard and share secured to said wing, a horizontal shoe secured to said landside and projected rearwardly beyond said body, plow-handles, one of said handles secured to the moldboard, the other handle secured to said projected end of said shoe, a plow-beam, and a standard secured in said body, substantially as described.

6. In combination, in a plow, a body or frame formed of one piece of metal and composed of a vertical flat landside and a wing, said landside and wing meeting at an angle at the front edge of the body, said landside having a depressed seat across the lower end of its outer face, a flat horizontal shoe fitted in said seat with its outer face flush with the outer face of the landside of the body and its lower edge projecting below the horizontal plane of the lower end of the body a moldboard removably secured on and projecting rearwardly beyond said wing, a share removably secured on and projecting below said wing and at its front end abutting against the front end of said shoe, a plow-beam, and a standard fitted in and secured to said body, substantially as described.

7. In combination, in a plow, an angular body or frame formed in one piece of metal with a vertical landside and wing extending rearwardly therefrom at an angle, the working faces of the plow secured on said body, a plow-beam, a standard rigid with said beam and fitting and secured in the inner angle of said body, the plow-handles and an inclined metal brace secured to the beam in advance of the standard and extended rearwardly and secured to said beam and to one of the plow-handles, substantially as described.

8. In combination, a cast body or frame, the moldboard, share and landside secured to said body, a plow-beam, a standard therefrom secured in said body, the plow-handles, the landside-handle secured to the rear end of said beam and at its lower end to said landside, metal braces secured to the beam and the standard, one of said braces secured to said landside-handle, the moldboard-handle at its lower end secured to the moldboard, a brace between said moldboard-handle and the beam, and a brace connecting said two handles, substantially as described.

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

ADOLPH SCHULZ.

Witnesses:

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JOHN S. GEIPEL.