

E. SHOOK.
WHEEL PLOW.

No. 375,777.

Patented Jan. 3, 1888.

Fig 1.

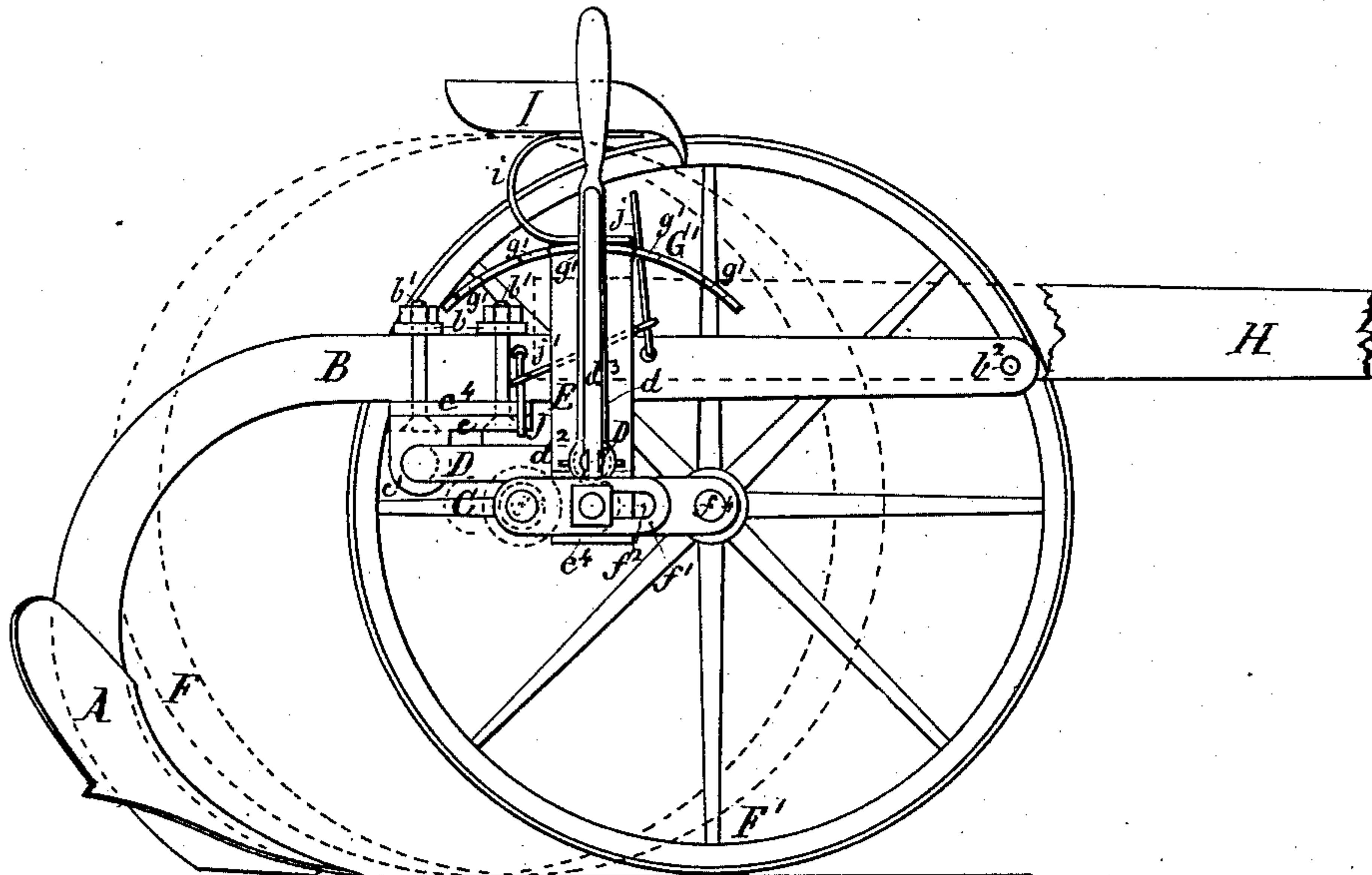
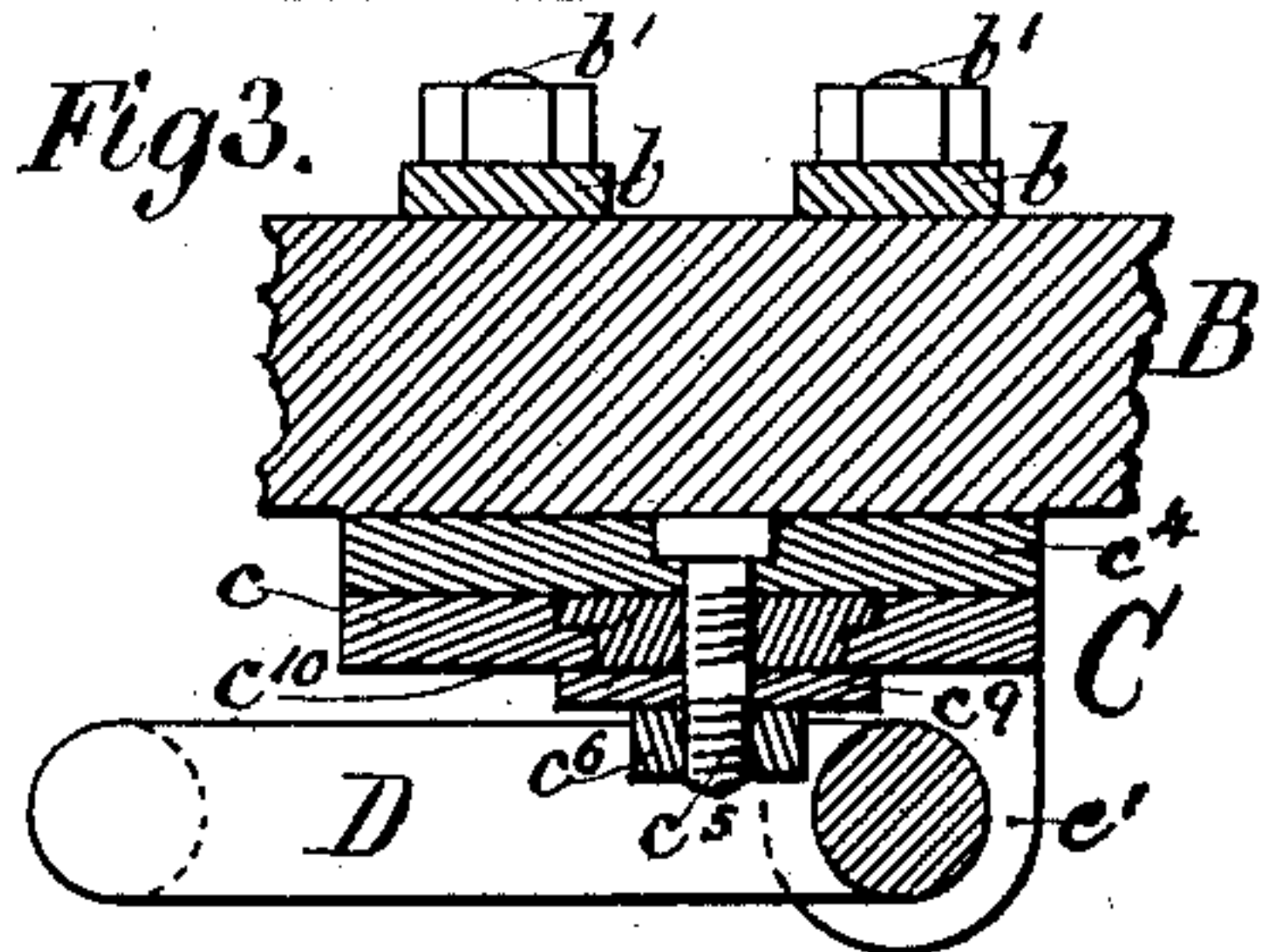
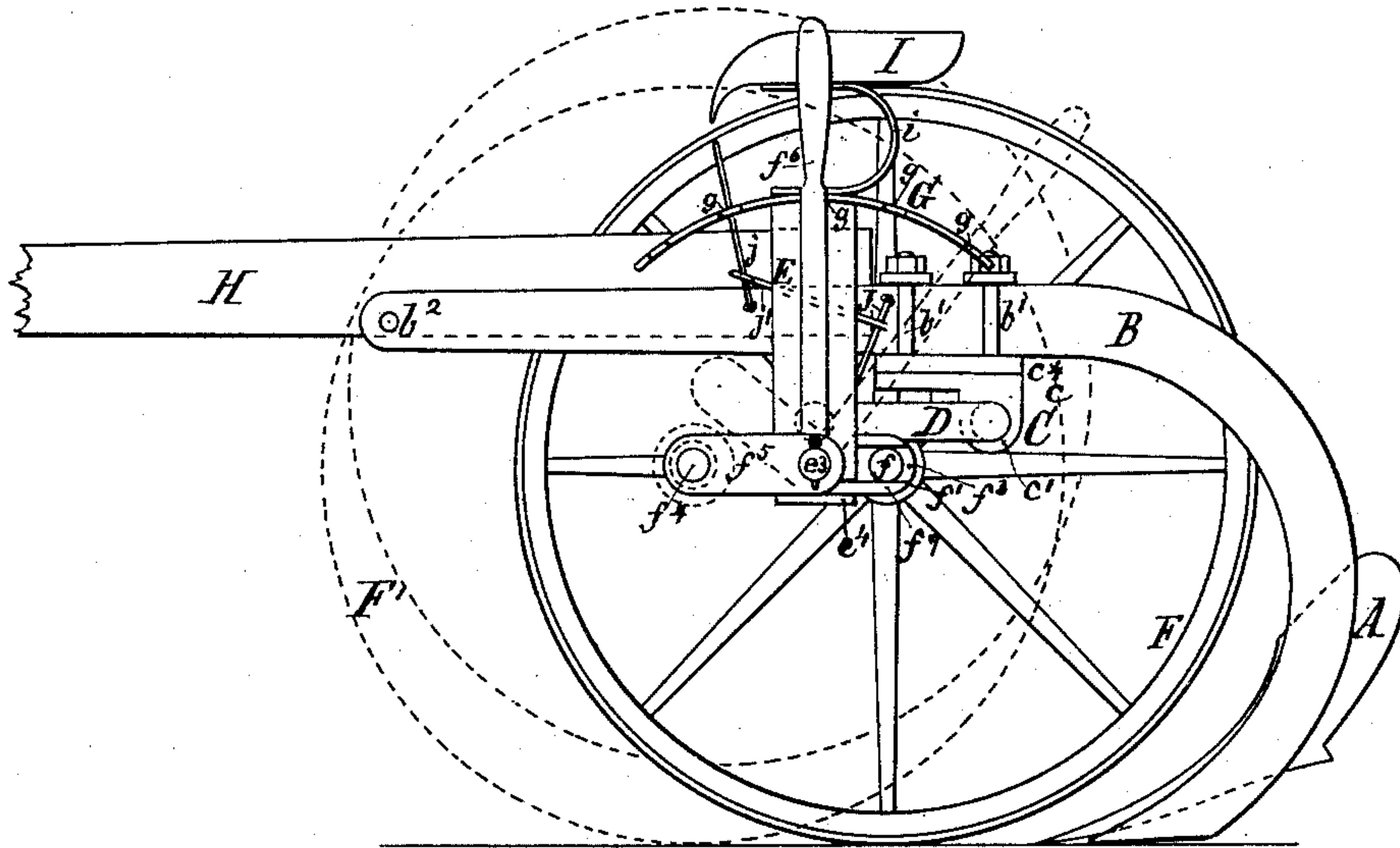


Fig 2.



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Edward J. Fenwick

Inventor:
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Mason, Fenwick & Lawrence

2 Sheets—Sheet 2.

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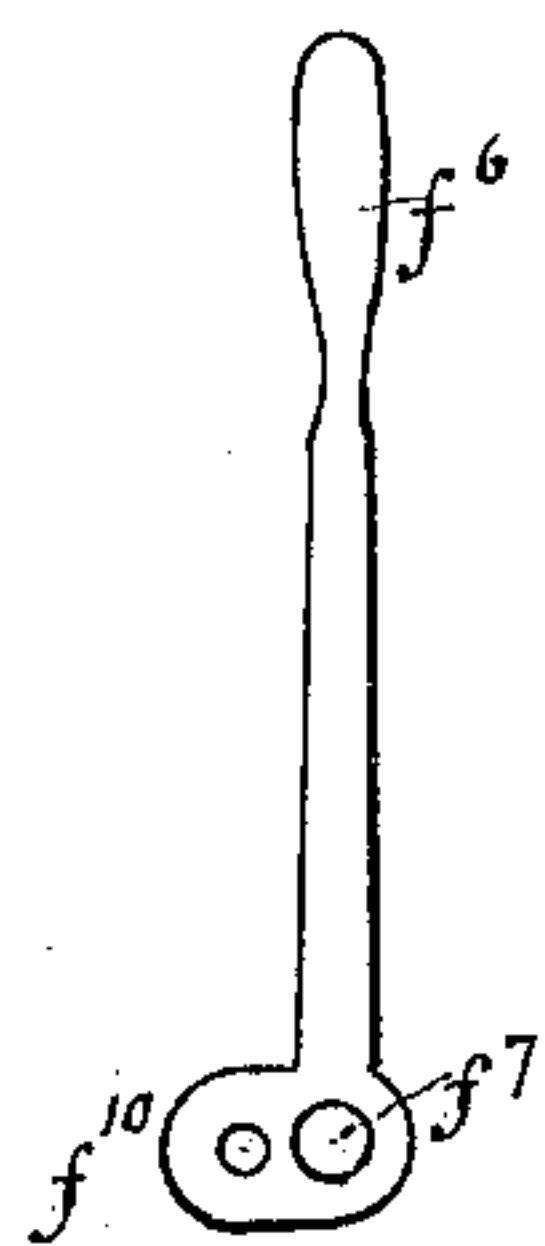


Fig 5.

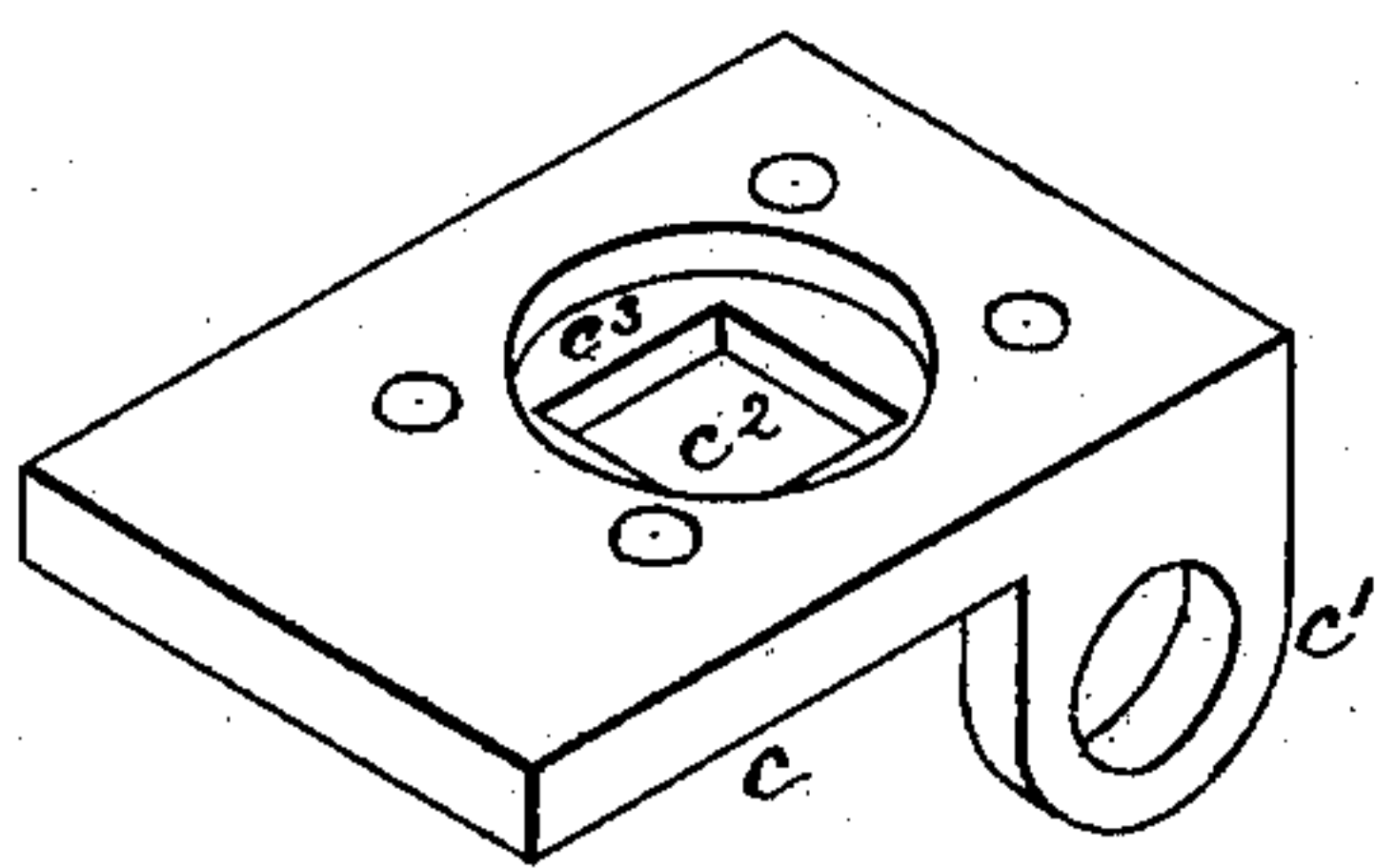


Fig 6.

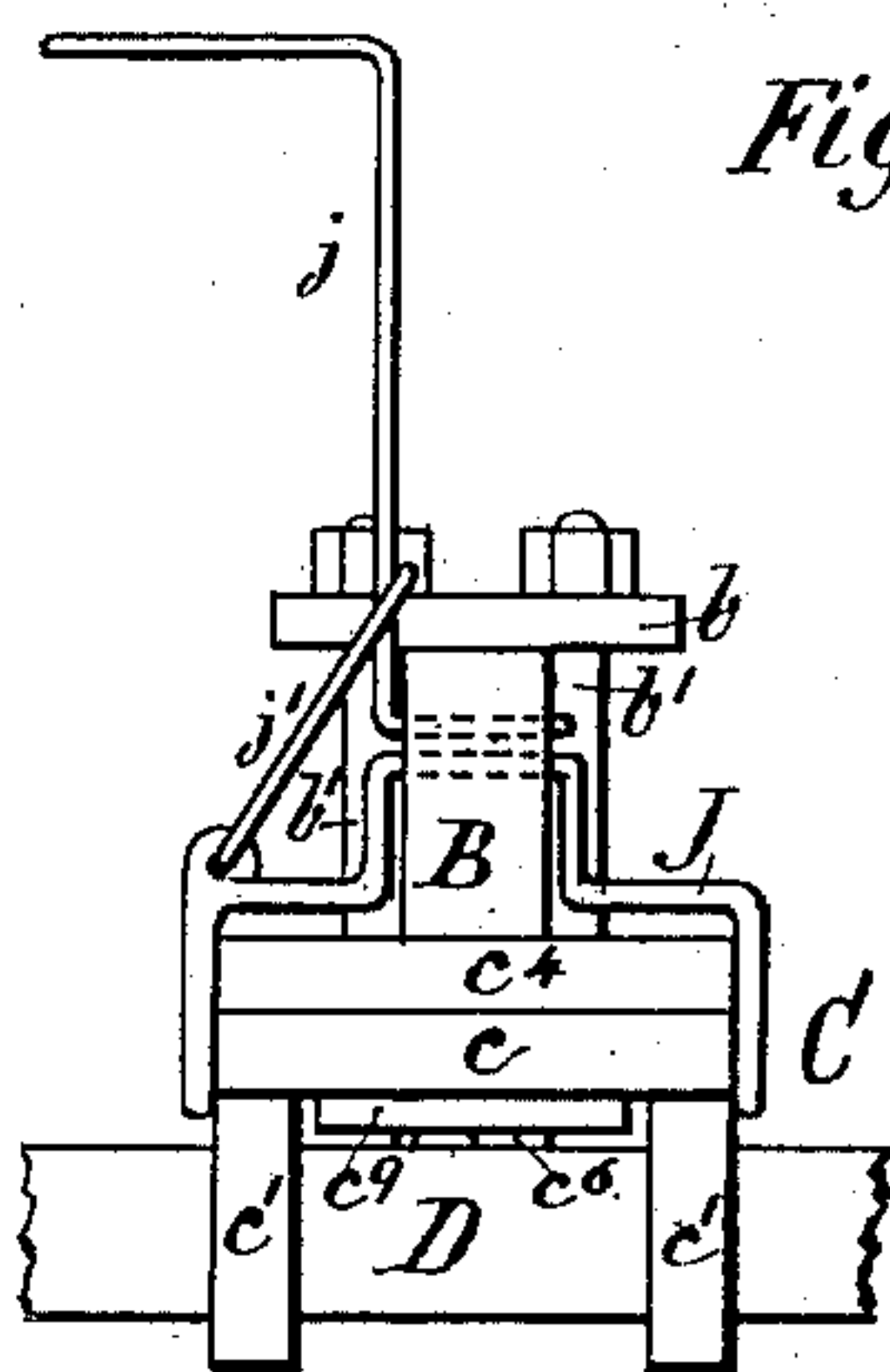
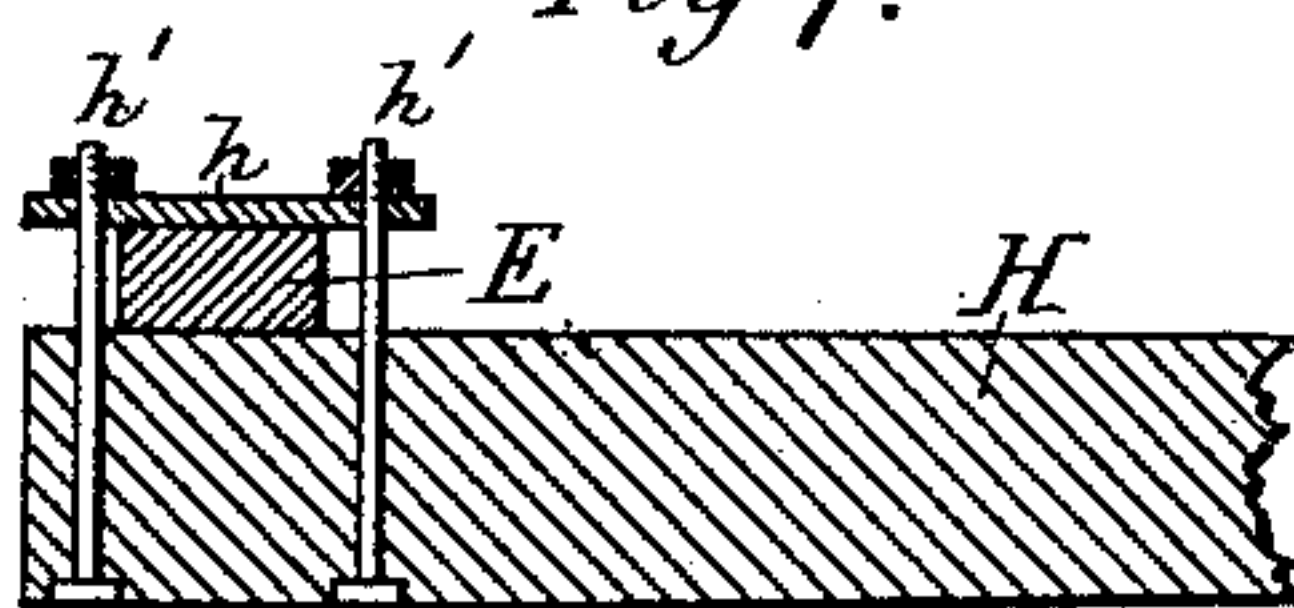


Fig 7.



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UNITED STATES PATENT OFFICE.

EDWARD SHOOK, OF ERIE, ILLINOIS.

WHEEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 375,777, dated January 3, 1888.

Application filed September 15, 1887. Serial No. 249,787. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SHOOK, a citizen of the United States, residing at Erie, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Wheeled or Riding 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 wheeled or riding plows; and it consists in certain constructions, arrangements, and combinations of parts, as will be hereinafter described, and pointed out in the claims, whereby certain useful and important advantages in plows of this class are secured.

In the accompanying drawings, Figure 1 is a side elevation of my invention, the wheel next to the observer being shown by dotted lines. Fig. 2 is an elevation of the same from the opposite side, the wheel next to the observer being shown by dotted lines. Fig. 3 is a detail longitudinal vertical section through the plow-coupling. Fig. 4 is a horizontal section in the line $x x$ of Fig. 1, showing by dotted lines the parts cut away. Fig. 5 is a perspective view of the lower plate of the coupling; and Fig. 6 is a detail front view of the plow-coupling, plow-beam, and a portion of the supporting crank-bar of the same. Fig. 7 is a longitudinal vertical section of the tongue and arched axle-tree, and Fig. 8 is a detail view in elevation of the spring lever-handle used in elevating the crank-frame D.

The letter A in the drawings represents a plowshare; B, a plow-beam; C, a plow-coupling; D, a plow-supporting crank-bar; E, arched axle-tree, and F F' wheels.

The wheel F revolves on a short axle-spindle, f , fastened at a right angle to an arm, f' , having a horizontal slot, f^2 , and on its rear side a horizontal longitudinal depression, f^3 , between two parallel flanges, f^1 . Into the depression f^3 the horizontal end portion, e , of the arched axle-tree is fitted, and through the slot f^2 a bolt-shaped projection, e' , of the end portion, e , is passed, which is, by means of a nut, e^2 , fastened to the arm f' . The lower flange f^1 bears against a transverse flange, e^4 , on the under side of the end portion, e , of the

arched axle-tree, and thus prevents lateral motion of the arm f' . The upper flange f^1 bears against a step or shoulder, e^5 , of the end portion, e , and prevents lateral and vertical deflection of the arm f' . This construction allows the arm f' to be moved horizontally on the end portion, e , when the nut is partly unscrewed, and thus the wheel F can be adjusted closer to or farther away from the center line of the arched axle-tree E.

The wheel F' revolves on a short axle-spindle, f^4 , fastened at a right angle to a crank-arm, f^5 , which swings around a journal end, e^3 , of the arched axle-tree E. A spring lever-handle, f^6 , is attached at a right angle to the arm f^5 , and is held in position by means of notches g in a sector, G, fastened to the arched axle-tree. This spring-handle at f^{10} is perforated and articulates on the journal end e^3 by said journal end being passed through the perforation f^{10} , while at f^8 the spring lever-handle is pivoted to the crank-arm f^5 , as shown, and thus the journal end e^3 not only serves as an axis of motion for the crank-arm f^5 , but as a fulcrum for the spring lever-handle f^6 , as well as an axis of articulation, in the act of raising and lowering the left side of the axle-tree. By means of this construction the left side of the arched axle-tree can be elevated or lowered at will, while the means employed are very compact and of neat construction.

A double crank-bar or plow-support, D, is suitably hung to the vertical portions of the arched axle-tree E by its short pivotal journals and is provided with a lever-handle, d , fastened to one end outside of the arched axle-tree by means of a transverse pin, d^2 , which lever-handle is held in position by means of notches g' in a sector, G', suitably fastened to the arched axle-tree. A spring, g^3 , fastened to the journal end portion of the bar D in front of the lever-handle d , holds the said handle in the notches g' , the handle being loosely fitted to the end portion of the bar D, so as to yield in an axial direction. By means of this construction the crank portion d' of the bar D can be, at will, elevated or lowered, and with it the plow, as will be seen. Upon the crank portion d' a coupling-plate, c , of the plow-coupling C is fitted by means of two lugs, c' , which are made to swing and also to slide on said crank

portion. The coupling-plate c is provided with a square opening, c^2 , at its bottom portion and a cylindrical depression, c^3 , above the same and concentric with it.

5 An upper coupling-plate, c^4 , rests upon plate c , and is united with it by means of a center bolt, c^5 , and nut c^6 . The bolt c^5 is provided with left-hand screw-threads c^7 below the plate c^4 , to which a nut, c^{10} , of a shape corresponding
10 to the formations c^2 c^3 , is tightly screwed. The end portion, c^8 , of the center bolt, c^5 , below the plate c^4 , is provided with right-hand threads, to which the nut c^6 is screwed. A stout washer, c^9 , is interposed between the nuts c^6 c^{10} and held
15 tight by them, and thus prevents the center bolt, c^5 , from rising from the plate c . The plate c^4 can in this construction turn freely around the center bolt, c^5 , without loosening the same from the plate c , and the said two plates can be
20 adjusted as closely together as desirable.

The plow-beam B is fastened to the plate c^4 by means of ordinary clamp-plates, b , and screw-bolts b' , as shown. For the purpose of preventing the plow from turning laterally a
25 forked swinging coupler, J , is used, which is suitably hung to the plow-beam and clasps both sides of the plates c c^4 , as shown. A lever-handle, j , suitably pivoted to the plow-beam and connected by means of a connecting-
30 rod, j' , with the coupler J , serves as a means by which the coupler J can be moved away from said plates, and the plate c^4 thereby allowed to swing laterally upon plate c , or turned down over the sides of said plates when they
35 stand in line and lock them together.

A pole, H , is fastened to the right corner of the arched axle-tree in such manner that it may be adjusted to a right or any other angle with the axle-tree, one mode of such fastening
40 being illustrated in Fig. 7 and consisting of a clamp-plate, h , across the arched axle-tree, and two bolts, h' , uniting the said clamp-plate with the pole H below. A driver's seat, I , is fastened to the center of said arched axle-tree by
45 means of a spring, i , as shown.

The wheel F' , which is the land-side wheel, is the one upon which the arched axle-tree is vertically adjusted, so that the plow will turn up sod or land at uniform desired depth. The
50 wheel F , which is the furrow-side wheel, can, by means of the slot f^2 in the spindle-arm f' , be moved forward or backward more or less, as desired, on the arched axle-tree E , and also forward of the land-side wheel F' by unscrew-
55 ing the nut e^2 and removing the arm f' and then replacing it in a reversed position end for end, and thus the turning of the wheeled frame can be facilitated to any desired degree and side draft of the plow obviated.

60 By means of the swinging plow-supporting crank-bar D and lever-handle d the plow can be easily and instantaneously lowered into or raised from the ground, or adjusted to its proper depth while plowing. If one or the
65 other wheel should, by reason of an obstruction—such as a stone or a hollow—be momentarily stopped or retarded in its progress, and

the wheeled frame thereby caused to change its position, the plow, by reason of its liberty to turn laterally on its support, as described, 70 will keep its proper position in relation to the furrow-line. If it should be necessary to lift the plow over an obstruction in the furrow-line, the driver upon the seat can immediately do so by turning the hand-lever d forward, and 75 immediately after having passed over the obstruction can let the plow down again to its proper depth by moving the hand-lever d into the same notch, g' , from which it had previously been moved. In turning a corner the plow 80 proper acts as a pivot to the supporting-carriage, and thus the starting-point for the adjoining furrow can be maintained without stopping and backing the team in order to locate the plow. If in so turning a corner the 85 wheels F F' should not turn precisely in concentric circles, the plow-supporting crank-bar D will slide through the lugs c' and right itself without strain and injury to the plow-share. If the nature of the land is such as to 90 create a lateral wavering of the plow sufficient to turn the plates c c^4 , these plates may be locked by the coupler J , as above described, in order to keep the plow steady.

With my invention the side draft of the plow 95 is diminished. The plow is held in the ground with very little difficulty, because it can be kept at such an angle that it will sustain its position below the surface by means of the resistance and weight of the turned-up soil, 100 and therefore there is no need of heavy weight upon the supporting-carriage. The structure being light and easily managed, the team can do comparatively heavy work with much less exertion than usual in plows of other con- 105 struction. A corner can be turned at will without dismounting from the seat and adjusting the plow by hand.

I would here state that when the coupling C is adjusted to any desired position upon the 110 plow-supporting crank-bar D it may be secured in such position by applying a set-screw in any proper manner, if it is not desirable to leave it unconfined, as above set forth.

What I claim as my invention is— 115

1. The elevating crank-arm f^5 , provided at one end with a spindle, f^4 , carrying land-side wheel F' , and having its opposite end pivoted upon the journal e^3 of the arched axle-tree E , in combination with the elbow spring-lever f^6 , 120 which has its fulcrum upon said journal e^3 and its short arm pivoted to said crank-arm f^5 some distance forward of the said journal e^3 , substantially as and for the purpose described.

2. The combination of the furrow-side wheel 125 F , with arm f' , slotted, as at f^2 , and its rear side provided with horizontal longitudinal depression f^3 and with upper and lower flanges f^7 , flange e^4 , and step or shoulder e^5 of the end portion, e , of the axle E , and bolt e' , having 130 nut e^2 , substantially as and for the purpose described.

3. In a two-wheeled riding-plow having arched axle-tree E , with adjustable wheels F

F' and plow-supporting crank-bar D, the combination of the plow-beam B, centrally-perforated plate *c*, having lateral lugs *c'*, plate *c'*, having clamp-plates *b* and bolts *b'*, left-threaded nut *c*¹⁰, and center bolt, *c*⁵, having washer *c*⁹ and right-threaded nut *c*⁶, substantially as and for the purpose described.

4. In the plow-coupling C, the combination of the plow-supporting plates *c* *c'*, crank-bar D, and the coupler J, substantially as and for the purpose described.

5. In a two-wheeled riding-plow which is horizontally adjustable upon its furrow-wheel, an arched axle-tree, E, plow-supporting crank-bar D, the land-side wheel F', having axle-spindle *f*⁴, crank-arm *f*⁵, lever-handle *f*⁶, fulcrumed upon the journal *e*³ and pivotally connected with the crank-arm, and the notched sector

G, substantially as and for the purpose described.

6. In a two-wheeled riding-plow which is vertically adjustable upon its land-side wheel, and which will permit its furrow side to be adjusted forward of its land-side wheel, a plow-supporting crank-bar, D, the furrow-wheel F, having axle-spindle *f*, slotted arm *f'*, having horizontal flanges *f'*, and the arched axle-tree E, having step *e*⁵, flange *e*⁴, and bolt end portion, *e'*, substantially as and for the purpose described.

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

EDWARD SHOOK.

Witnesses:

WM. C. ALLEN,
ROBT. T. JAMES.