

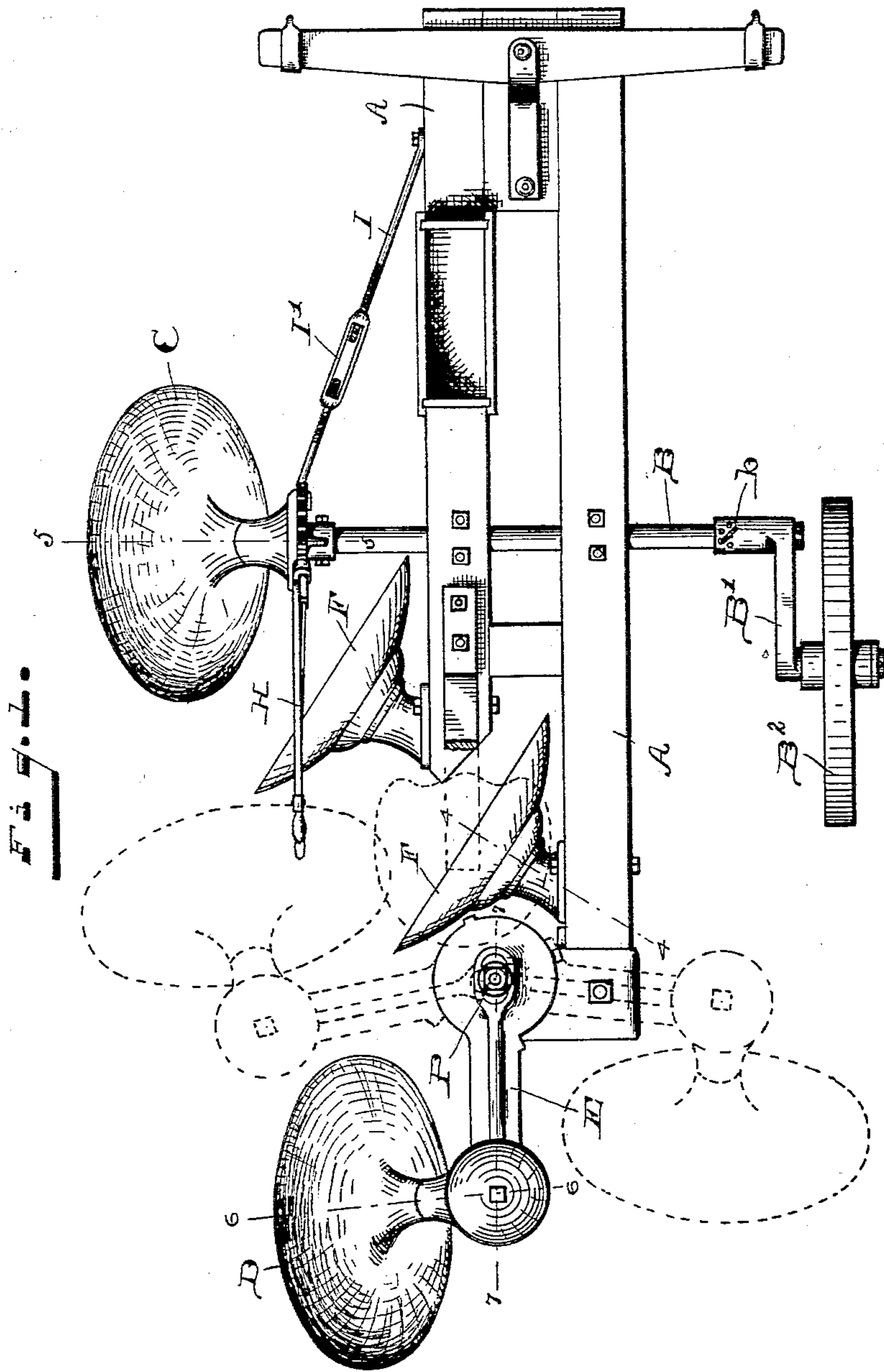
(No Model.)

3 Sheets—Sheet 1.

M. T. HANCOCK.
ROTARY PLOW.

No. 504,779.

Patented Sept. 12, 1893.



WITNESSES:

F. W. Warner,
J. A. Walsh-

per

Chester Bradford,
ATTORNEY.

INVENTOR:

Miller T. Hancock,

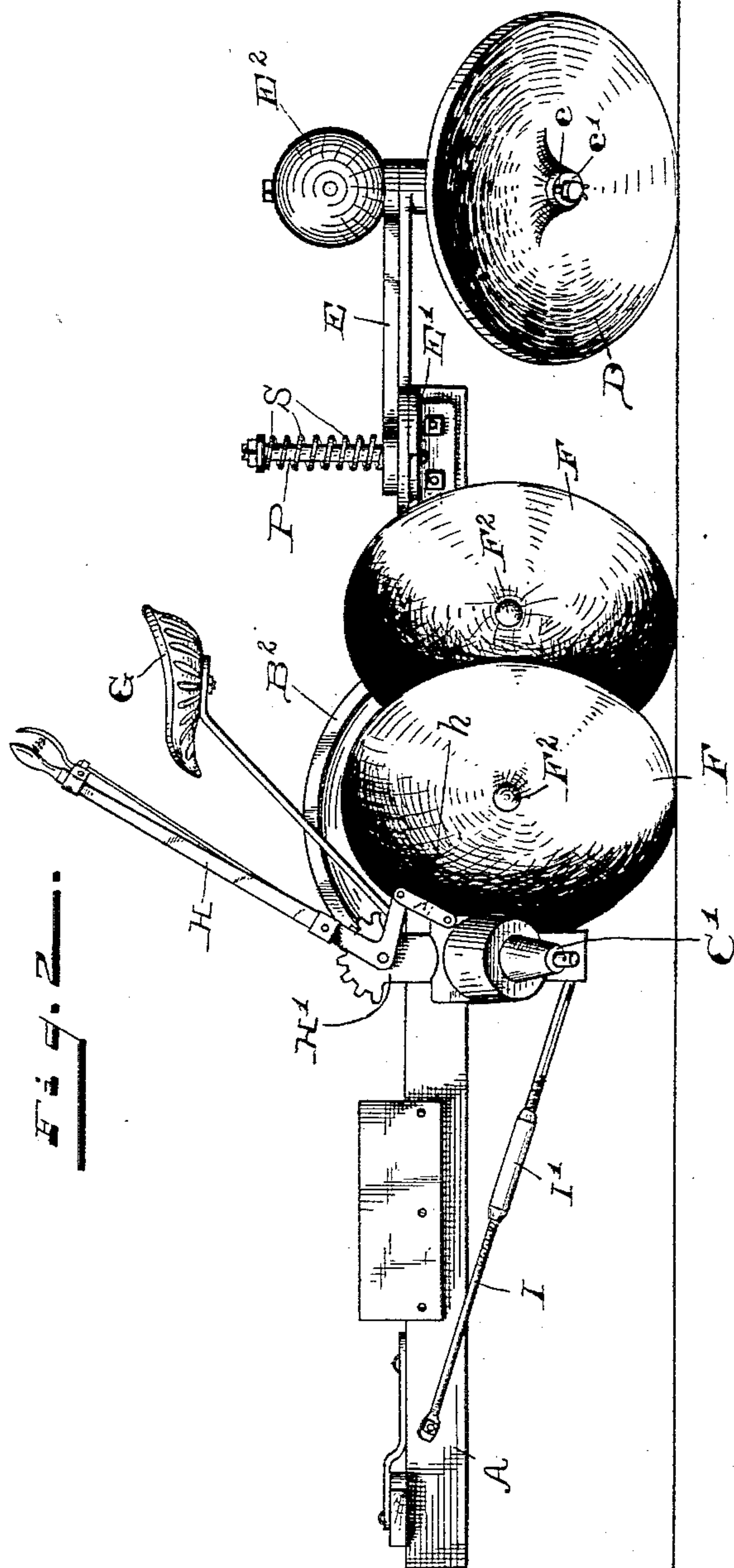
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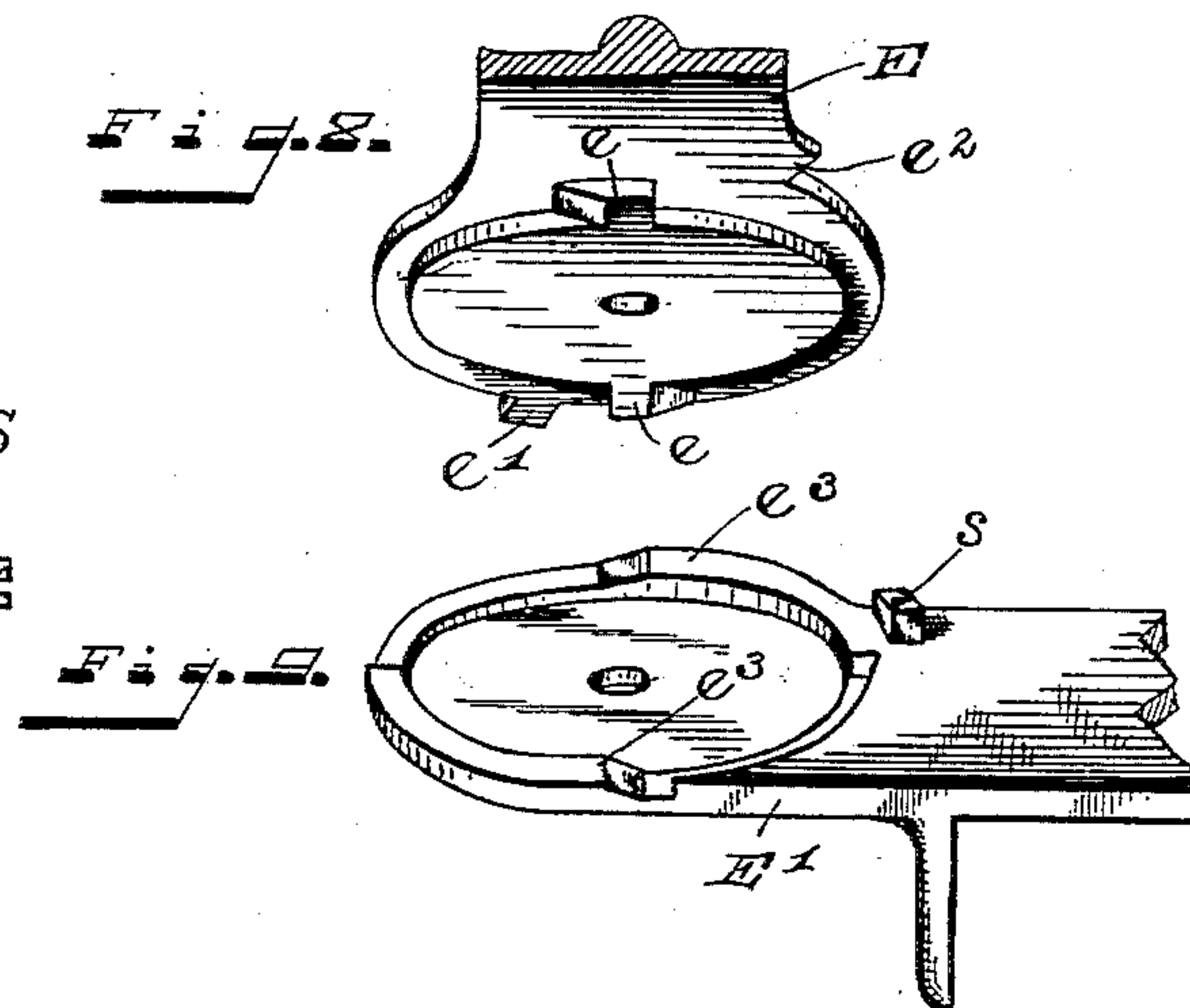
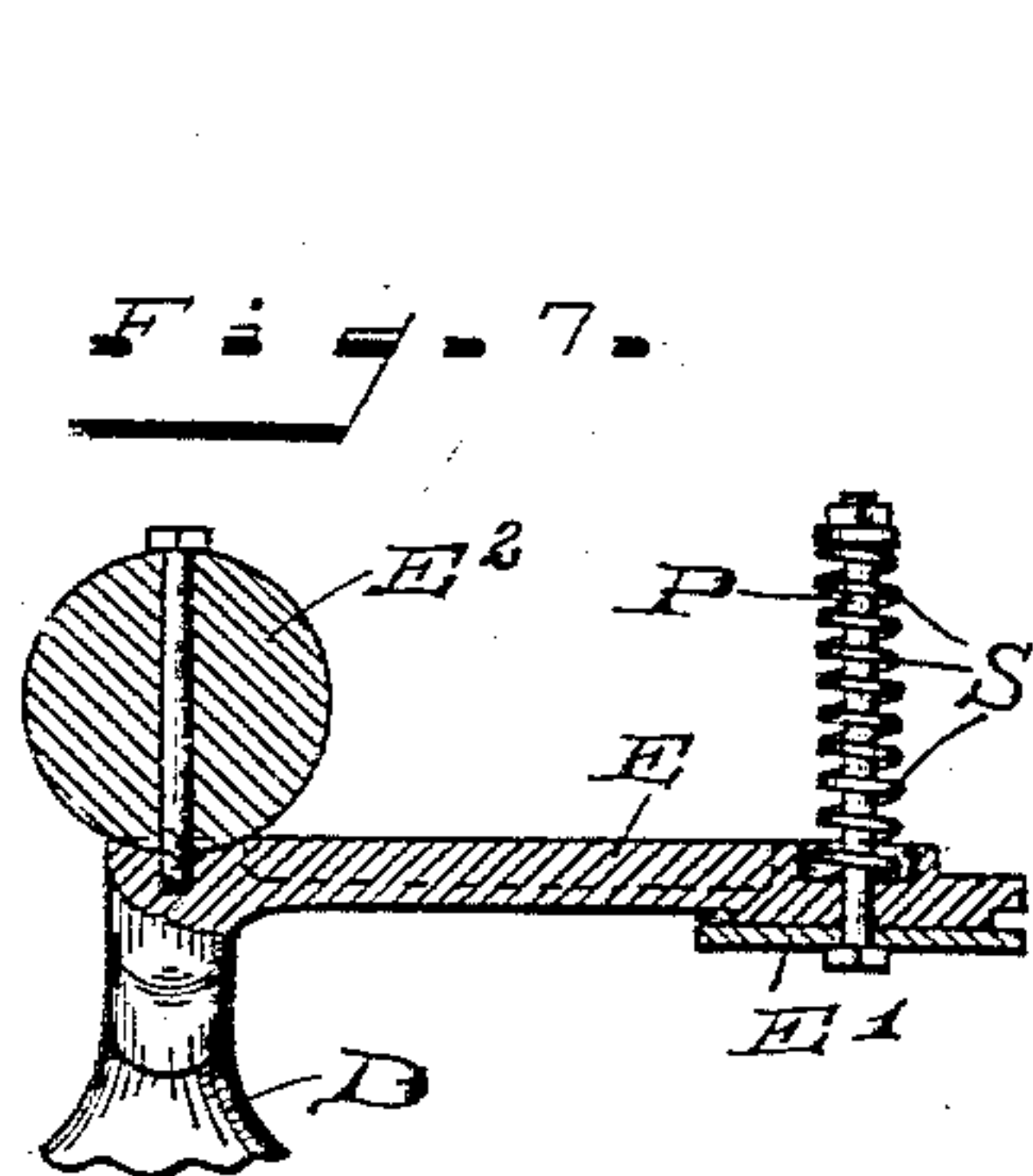
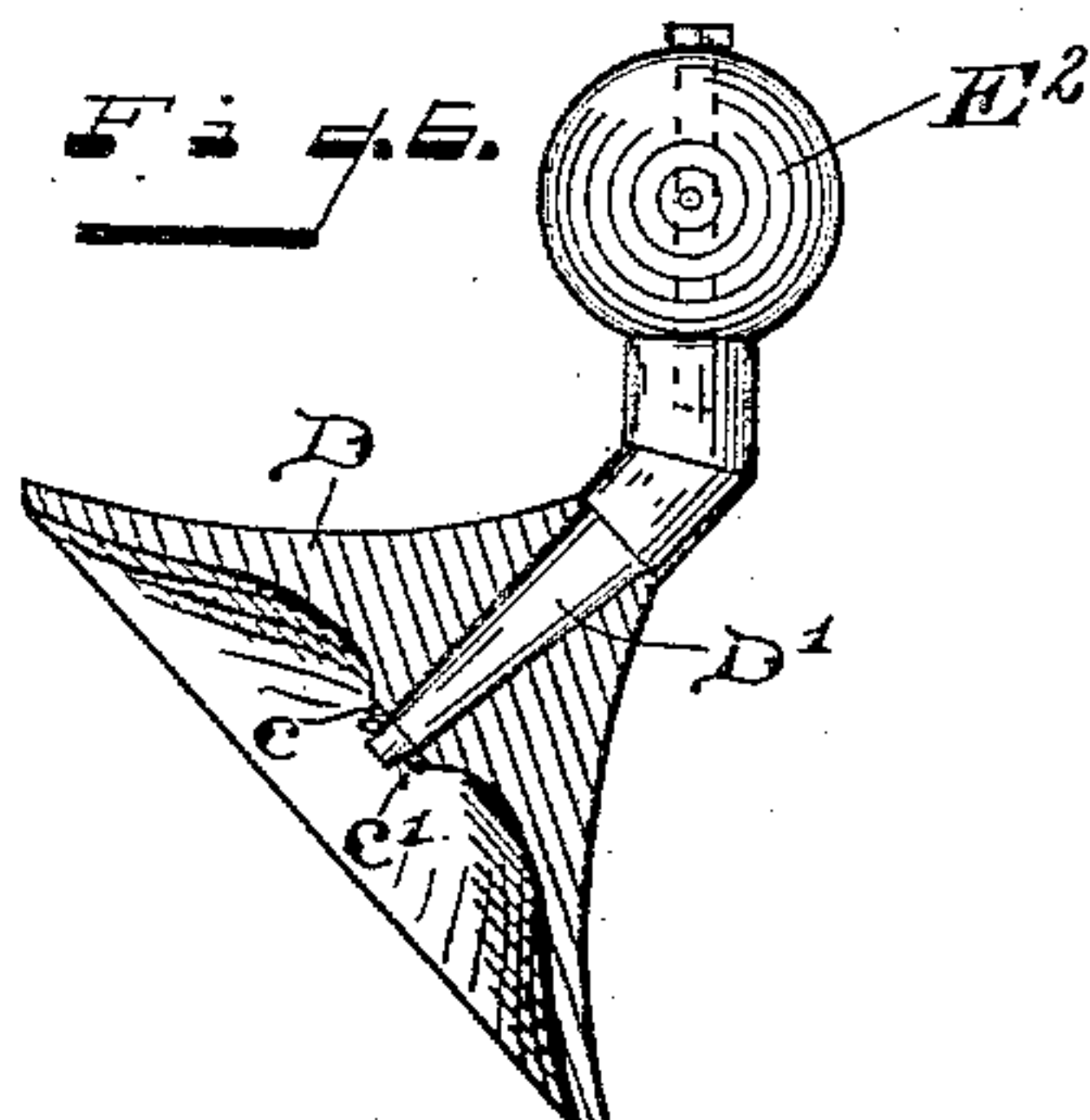
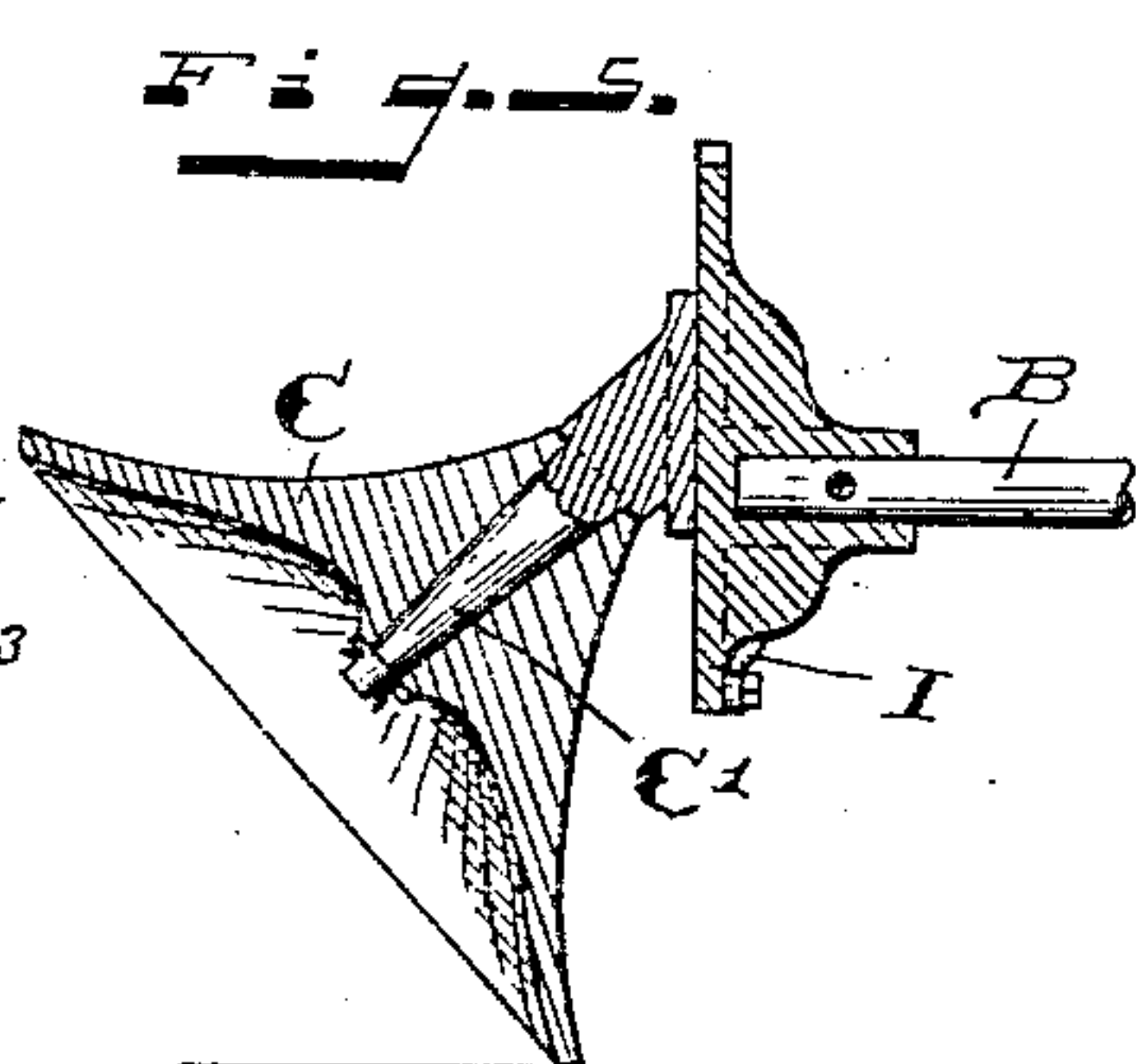
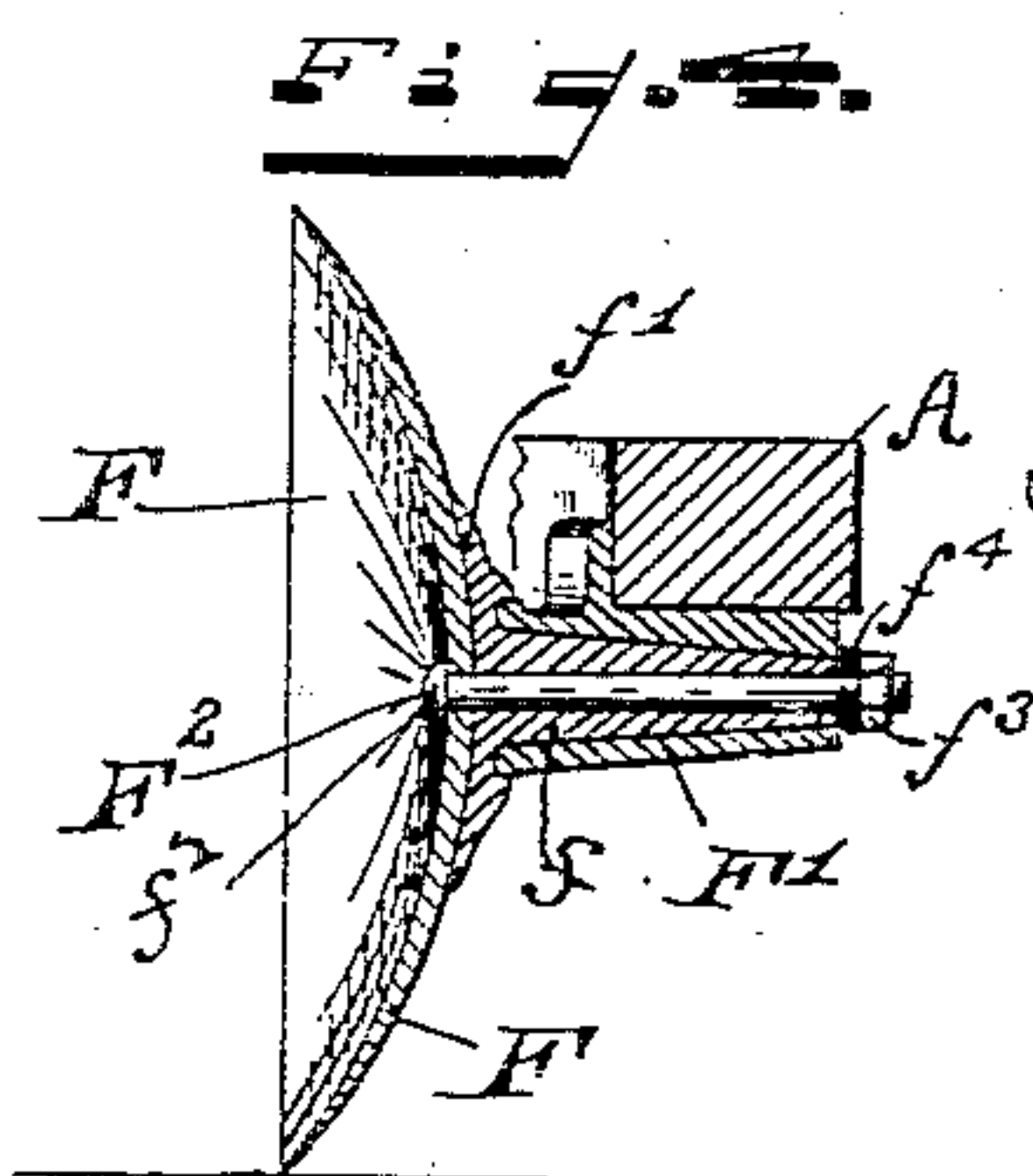
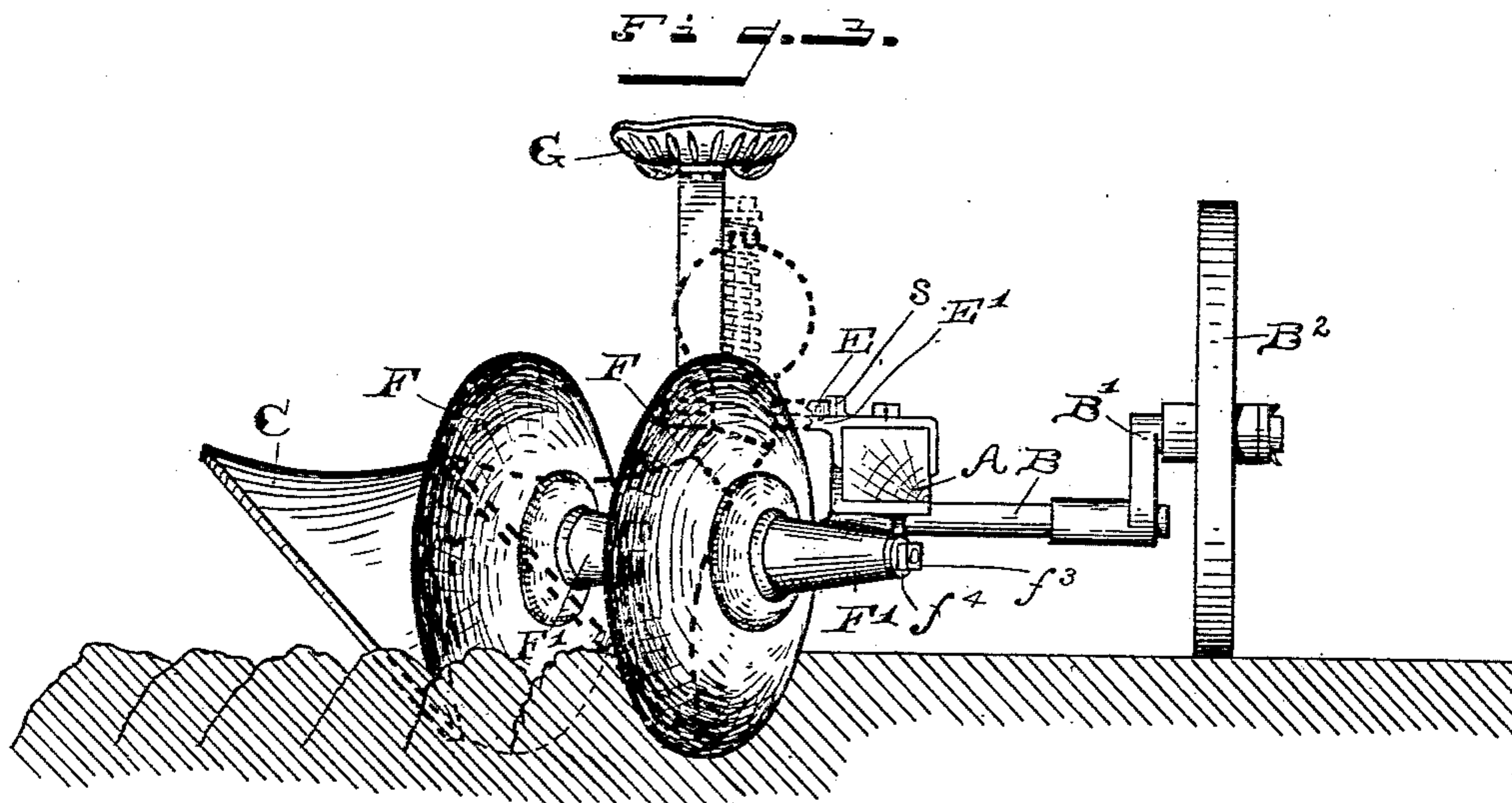
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UNITED STATES PATENT OFFICE.

MILTON T. HANCOCK, OF SHREVEPORT, LOUISIANA.

ROTARY PLOW.

SPECIFICATION forming part of Letters Patent No. 504,779, dated September 12, 1893.

Application filed October 20, 1892. Serial No. 449,489. (No model.)

To all whom it may concern:

Be it known that I, MILTON T. HANCOCK, a citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented certain new and useful Improvements in Rotary Plows, of which the following is a specification.

This invention consists in certain improvements upon that shown in Reissued Letters Patent No. 11,257, granted me August 9, 1892, whereby the plows are given greater capacity and efficiency, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of a plow embodying my said invention; Fig. 2 a side elevation of the same; Fig. 3 an end elevation, the parts being adjusted in that relation to each other which they occupy when the plow is in operation; Fig. 4 a sectional view through one of the plowing disks, on the dotted line 4 4 in Fig. 1; Fig. 5 a similar view through the front staggered wheel, on the dotted line 5 5; Fig. 6 a sectional view through the rear staggered wheel, on the dotted line 6 6; Fig. 7 a longitudinal sectional view of the swinging arm on which the rear guide-wheel is mounted, and adjacent parts, and Figs. 8 and 9 views of the adjacent faces of said arm and the bearing to which it is united.

In said drawings the portions marked A represent the frame of the plow; B the axle; C the guide-wheel thereon; D the rear guide-wheel; E the arm on which said rear guide-wheel is mounted; F the plowing disks; G a seat; H an adjusting lever by which the front guide-wheel is raised and lowered, and I a stay-rod connected to the base of the spindle on which said guide-wheel is mounted, and running forward to the frame.

The frame-work A is shown as a substantially rectangular frame, with one of the side-pieces projecting to the rear. It may be of any suitable form and size for the purpose, and it supports the bearings and attachments for the mechanism of the plow.

The axle B has a crank-arm B' upon one end, upon which the land-wheel B² is mounted. The crank-arm and the axle are united by means of a pin or bolt b which passes through

a sleeve forming a part of said crank-arm and said axle. The sleeve is provided with several holes, and the pin or bolt may be shifted from one to another, and thus the crank-arm set in varying relation to the axle, and by this means the land-wheel may be adjusted to higher or lower position relatively to the frame and plowing disks.

The staggered guide-wheel C is mounted in much the same manner as in the aforementioned Letters Patent, and is adapted to be raised or lowered in the same manner. The spindle C' thereto, however, is a tapered spindle, and the hole therefor in the hub of the wheel is correspondingly tapered, and both should be case-hardened or chilled. This construction admits of the parts being cast and put together with but little finishing, which cheapens the construction greatly, while providing a superior article. These staggered wheels are held onto their spindles by a linch-pin c, between which and the hub should be a washer c'.

The rear staggered guide-wheel D is similar in construction and arrangement to the guide-wheel C, except that it is set to run in the furrow last plowed, while the wheel C is set to run in the furrow plowed on the preceding passage of the plow, and except that its spindle is inclined slightly to the rear so that said guide-wheel shall have a slight lead toward the portion of the ground already plowed against the side pull of the plowing disk. This last feature is quite important, as otherwise the guide-wheel would be inclined to run out, under said side pull upon the unplowed ground. The inclination of the spindle of the front-guide-wheel is determined by the adjustable stay-rod I, as will be presently described.

The arm E is mounted, as will be presently described, on the bearing E' attached to the rear end of the frame-work, and extends rearwardly a sufficient distance, so that when it swings around, as in turning the plow in one direction, the guide-wheel will run around the plowing disk, where but one is used, or between them, where two are used, as shown; and in turning in the other direction will swing around as may be required, all as indicated by the dotted lines in Fig. 1.

In order that this wheel may serve its pur-

pose with the greatest certainty, I have found it desirable to mount thereon a heavy weight, which I have shown in the form of a cast ball, E^2 , which is mounted directly above the point from which the spindle to the wheel projects. The arm E has a projection or projections e upon its lower face, and other projections e' e^2 extending horizontally from its edge. The casting E' , which is bolted to the frame A, and upon which said arm is secured, has a raised portion or portions e^3 alongside the projection or projections e when the arm is in normal position (as shown in full lines in Fig. 1) and whereby it is ordinarily held to that position. When, however, any unusual force is applied, as when the plow is turned around a corner, it is sufficient to cause the projection e to travel up the inclined faces of the raised portions e^3 , after which the arm and the wheel thereon are free to swivel on the pivot bolt P and travel around to between the plows, or such portion of that travel as the angle of the turn calls for. The arm is prevented from traveling too far by one of its projections e' e^2 which comes in contact with the stop s on the casting E' , said projections being formed at such points as it is desired shall determine the extreme limit of said travel—preferably approximately ninety degrees from the working position. The arm is held into close contact with the casting E' by means of the spring S, which surrounds the pivot-bolt P which passes through them, said pivot-bolt being extended to a considerable height above said arm for this purpose. The upper end of said bolt is screw-threaded, and a nut and cap are placed thereon, by which the tension of the spring may be adjusted.

The plowing disks F are mounted on axles f which extend through them and castings F' , which latter are firmly bolted to the frame A. Said axles f have flanges f' on the ends which fit against the rear side of the plowing disks F, and serve as a seat or support therefor. The disks and the axles are secured together by bolts F^2 , which are provided with preferably round heads f^2 , which fit inside the disks F, and upon the other end with nuts f^3 . The axles are slightly longer than the distance through the castings F' , and washers f^4 which rest against the ends of said axles may thus be screwed up tightly against said ends and overlap said castings F' without clamping the axles in their bearings therein. The flanges f' are socketed somewhat to receive the adjacent ends of the castings F' , which are thus protected from dirt, all as shown in Fig. 4. When the bolt f^2 is removed, the disk and axle can be separated, and both removed from the bearing, as will be readily understood.

The seat G is an ordinary seat, mounted on the frame-work A, for the convenience of the driver or operator.

The construction and operation of the lever H is a common one, and is readily under-

stood. It is pivoted to the vertical bar H' on the end of the axle B, and the crank-arm on its lower end is connected by means of a link h with a slide mounted thereon which carries the spindle for the front staggered guide-wheel C. Said guide-wheel can thus be raised and lowered as desired.

The stay-rod I extends from the lower end of the vertical bar H' on the axle B, forward to a point near the front end of the frame A, and is firmly secured to both. Centrally, it has a turn-buckle I' by which its length and the position of that end of the axle B to which it is attached are varied, thus varying also the "lead" of the front staggered guide-wheel, as may be required by the varying sorts of work which the plow is required to do. The axle is capable of being rocked in its bearings on the frame-work, and, as the bar H' is generally secured fixedly thereto, the lengthening or shortening of the rod I by means of the turn-buckle I' has this effect.

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

1. The combination, with a rotary plow, of a guide-wheel mounted on an inclined shaft, secured to the rear end of the frame in position behind the plowing disk and running in the last furrow plowed, and arranged to resist the side strain of the plowing disks, substantially as shown and described.

2. The combination, with a rotary plow, of a guide-wheel mounted at the rear end, and mountings therefor secured to a pivot, whereby said guide-wheel is enabled to swivel, in turning, like a caster-wheel and provided with engaging devices whereby it is held in line in ordinary operation, substantially as set forth.

3. The combination, with a rotary plow, of a rear guide-wheel, a bearing on the frame-work having raised portions on its face, an arm carrying the guide-wheel and having raised portions on its face, said two faces being brought together when the parts are assembled, and whereby they are held to position in the usual operation of plowing, but are permitted to swivel on occasion, substantially as set forth.

4. The combination, with a rotary plow, of a rear guide-wheel, an arm on which it is mounted, and bearings on said arm and on said frame-work having corresponding raised portions or projections which fit between each other, a pivot-bolt securing the two together, and a spring surrounding said pivot-bolt whereby they are held in forcible but yielding contact, substantially as set forth.

5. The combination, with a rotary plow, of the rear guide-wheel, a swinging arm on which the same is mounted, means whereby said arm is connected to the frame-work, and a spring whereby said arm and the portion to which it is attached are held into forcible but yielding contact, substantially as set forth.

6. The combination, with a rotary plow, of

a guide-wheel secured to the rear end of the frame in position behind the plowing disk, the spindle of said guide-wheel being inclined slightly to the rear, whereby said guide-wheel
5 is given a "lead" opposite to the side pull of the plowing disk, substantially as shown and described.

7. The combination, in a rotary plow, of the frame A one beam whereof extends farther
10 to the rear than the other, the axle B having the land-wheel B² upon one end and the adjustable staggered guide-wheel upon the other end, two or more plowing disks separately mounted upon the two beams of the frame-
15 work, and a rear guide-wheel secured behind the whole, substantially as shown and described.

8. The combination, in a rotary plow, of an axle having a vertical bar H' upon one end
20 carrying a guide-wheel or a bearing therefor,

and a stay-rod I extending from said bar forward to the frame-work with a turn-buckle I' therein, whereby it may be adjusted, and the "lead" of the guide-wheel thus varied, substantially as set forth.

9. The combination, in a rotary plow, of a
25 guide-wheel mounted at a point to one side of the axis on the axle, and an adjustable stay-rod connecting the bearing or support upon which it is mounted to the framework, 30 whereby the "lead" may be varied as required, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 18th day of October, A. D. 1892.

MILTON T. HANCOCK. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.