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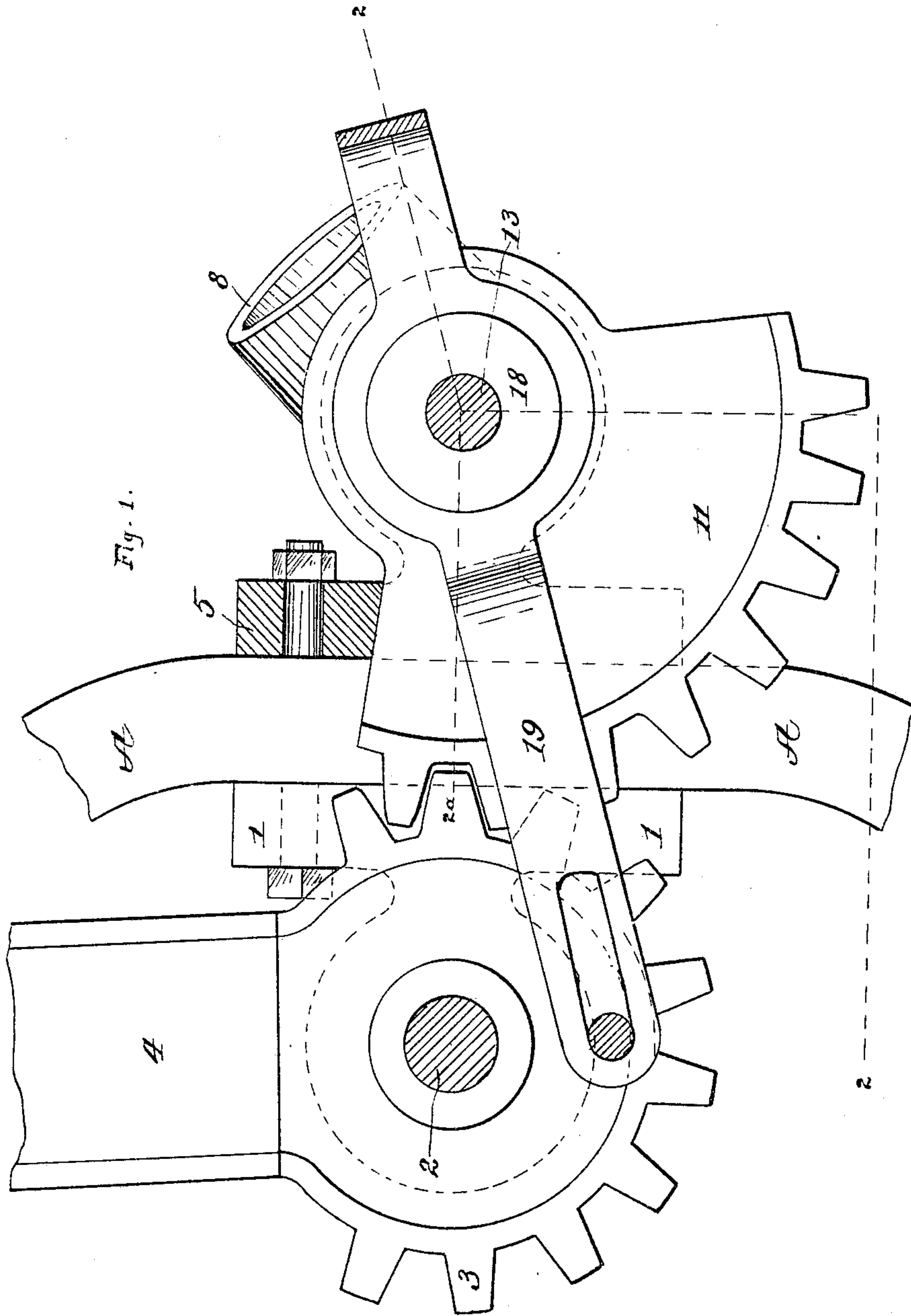
No. 819,038.

PATENTED MAY 1, 1906.

J. BUCHANAN,  
PLOW.

APPLICATION FILED NOV. 13, 1905

2 SHEETS—SHEET 1.



Witnesses

Carrie G. Ivey;  
M. E. Parmelee

Inventor

Judson Buchanan

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Fig. 3.

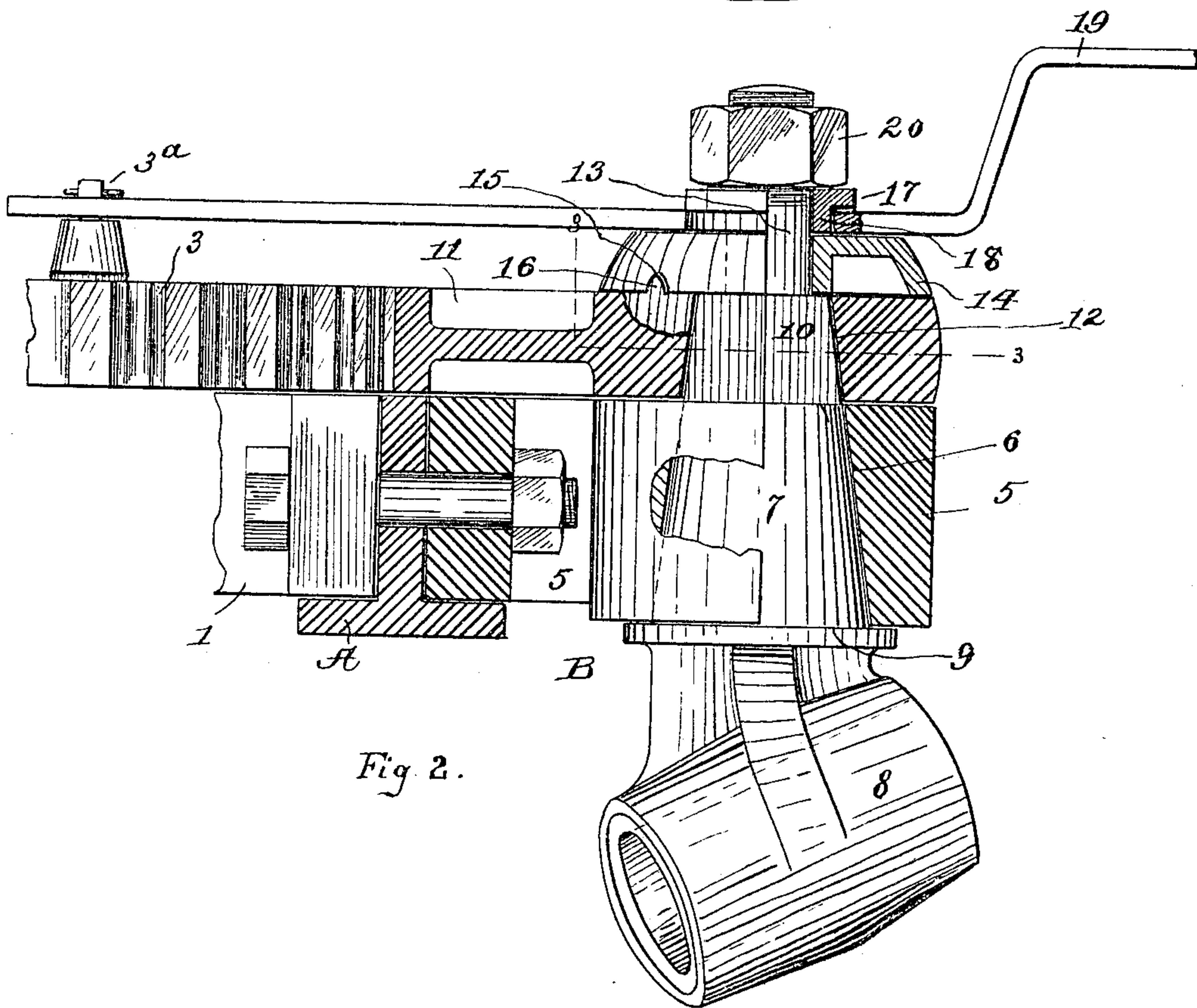
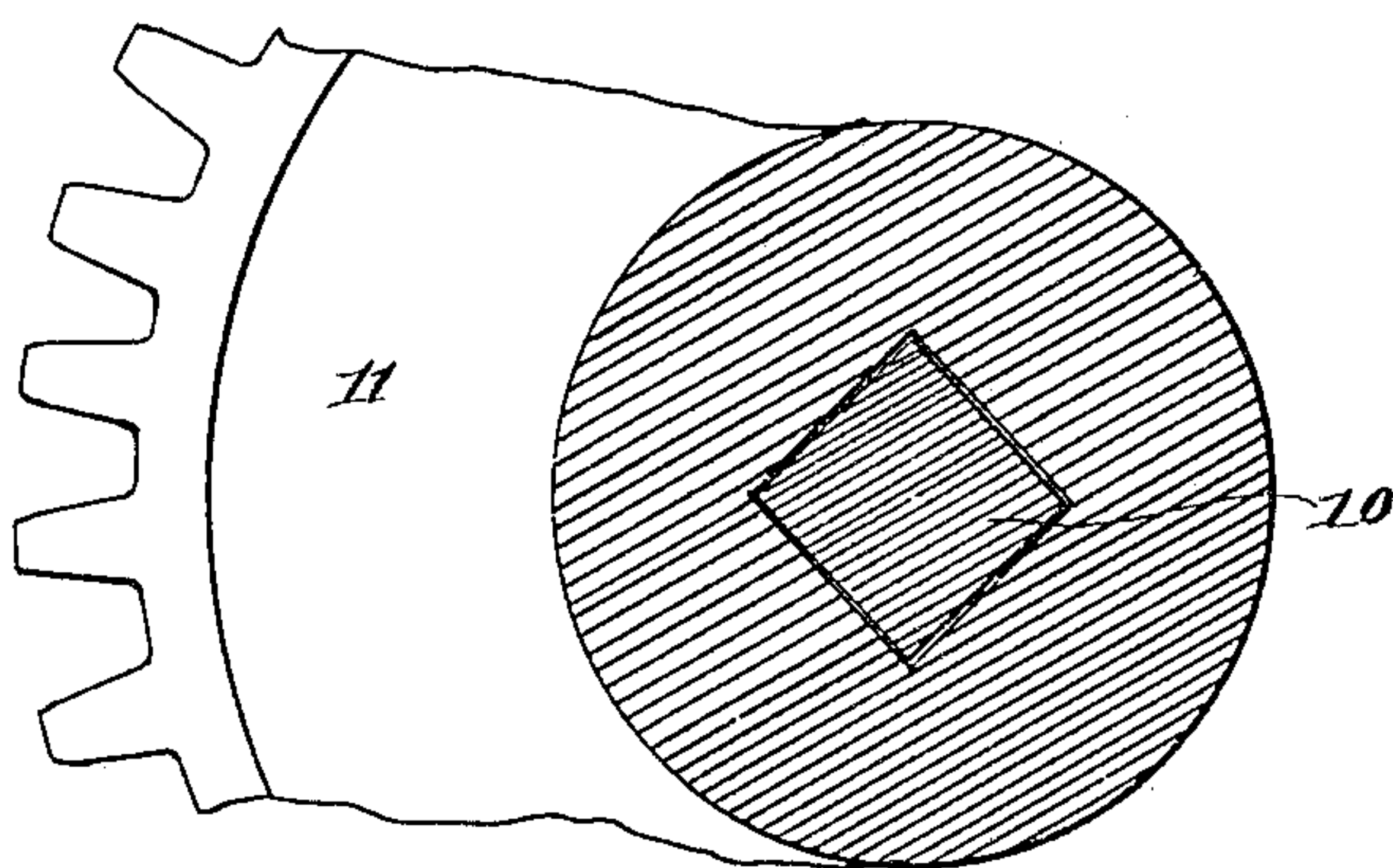


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

JUDSON BUCHANAN, OF CHATTANOOGA, TENNESSEE, ASSIGNOR TO  
REVERSIBLE DISC PLOW & IMPLEMENT COMPANY, OF CHATTA-  
NOOGA, TENNESSEE, A CORPORATION OF TENNESSEE.

## PLOW.

No. 819,038.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed November 13, 1905. Serial No. 287,078.

*To all whom it may concern:*

Be it known that I, JUDSON BUCHANAN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Improvement in Plows, of which the following is a specification, reference being had to the accompanying drawings.

My improvement relates particularly to reversible moldboard-plows of the type described in Letters Patent of the United States, No. 676,005, granted to E. Manes June 11, 1901; No. 693,042, granted to W. B. Michael February 11, 1902, and No. 710,987, granted to W. B. Michael October 14, 1902. My improvement relates to the manner of joining the moldboard-hub, the segment-gear through which said hub is controlled, and the pivoted scraper-bar, as will herein-  
after appear. The end in view has been to adapt the mechanism to permit free movement of a portion of the parts and at the same time avoid the accidental loosening of the parts from each other. As the general features of this plow are well known, it is deemed unnecessary to illustrate and describe the entire plow.

In the accompanying drawings, Figure 1 is a plan. Fig. 2 is an upright section on the line 2 2 and on the line 2 2<sup>a</sup> of Fig. 1, the section on the line 2 2<sup>a</sup> including all of the right-hand segment-gear. Fig. 3 is a section on the line 3 3 of Fig. 2.

Referring to said drawings, A is the plow-beam, and 1 is a bracket-block applied to the left-hand side of said beam, and from said block rises a journal 2, which extends through the bearing of the segment-gear 3. From said gear the tongue 4 extends forward approximately parallel to the beam, and said tongue may be swung horizontally away from the beam through a half-circle until it is again approximately parallel to said beam. Opposite the block 1 a bearing-block 5 is applied to the beam A. Said block is penetrated by an upright bearing 6, and in said bearing rests the journal 7 of an upright rotary member B, said member extending above and below said block. Below said block said member is formed to constitute an approximately horizontal hub 8 to receive the journal of the rotary moldboard or disk. (Not shown.) A shoulder 9 on said member

B bears against the lower face of said bearing-block 5. Immediately above said bearing-block and above said journal 7 said member A is non-cylindrical or in the form of a truncated pyramid 10. Surrounding said non-cylindrical or pyramidal portion of said member is the segment-gear 11, having an axial aperture 12, conforming to said pyramid. This construction makes possible a firm engagement between said member B and said segment-gear by applying downward pressure to said gear with reference to said member B, whereby said segment-gear is rendered immovable upon said member B. Such pressure is applied by means of a nut and washers to be next described. Extending upward from said pyramid 10 is a cylindrical neck 13, the upper portion of which is screw-threaded. Surrounding the lower portion of said neck and resting upon the upper face of said segment is a washer 14. To render said washer non-rotatable upon said neck and said segment, said segment and said washer may be provided, respectively, at their meeting faces with a notch 15 and a lug 16, extending into said notch. Upon the washer 14 and surrounding said neck is another washer 17, comprising a neck 18, a little higher than the thickness of the scraper-bar 19. Said bar surrounds said neck loosely and is rotatable upon said neck. Above said washer a nut 20 is threaded upon said neck 13 and bears upon the upper face of said washer 17 and bears said washer upon the washer 14, but not upon the bar 19, for, as already stated, said neck 18 is higher than the thickness of said bar. Thus said bar is not bound at all. By tightening said nut said washers are forced downward upon the upper face of said segment and said segment is driven with greater and greater force downward upon said truncated pyramid, whereby said washers and said segment are immovably bound to the member B. The journal 7 on said member B is made a little longer than the bearing 6 in the bearing-block 5, so that said segment-gear and the shoulder 9 will bear loosely against the horizontal faces of said bearing-block. Thus the member B is free to rotate in said bearing, while said segment-gear is rigidly secured to said member, so that the two must rotate in unison, and the bar 19 is free to rotate independently



of said member B. One end of said bar is coupled to a wrist-pin 3<sup>a</sup>, seated eccentrically upon the segment-gear 3, so that when the tongue 4 is turned from one position to the other said end of said bar is carried half-way around the axis of said segment, whereby said bar is oscillated through a limited arc on the axis of the member B, and it will be observed that while the parts sustain to each other the relation just described there is nothing in the operation tending to loosen said nut from the neck 13 or to permit the segment-gear 11 to free itself from the member B. No moving part makes contact with

said nut.

I claim—

1. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, a washer having a neck, a nut surrounding said cylindrical neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck, and joined eccentrically to said second segment-gear, substantially as described.

2. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, one of said washers having a neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck and joined eccentrically to said second segment-gear, substantially as described.

3. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cy-

lindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the lower of said washers and said segment-gear being provided with means for engaging each other and one of said washers being provided with a neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck and joined eccentrically to said second segment-gear, substantially as described.

4. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the upper of said washers having a neck resting on the lower of said washers, and a scraper-bar loosely surrounding said washer-neck, substantially as described.

5. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the lower of said washers and said segment-gear being provided with means for engaging each other and the upper of said washers having a neck resting on the lower of said washers, and a scraper-bar loosely surrounding said washer-neck, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 8th day of November, in the year 1905.

JUDSON BUCHANAN.

Witnesses:

C. F. MINTURN,  
C. E. LANDIS.