

(No Model.)

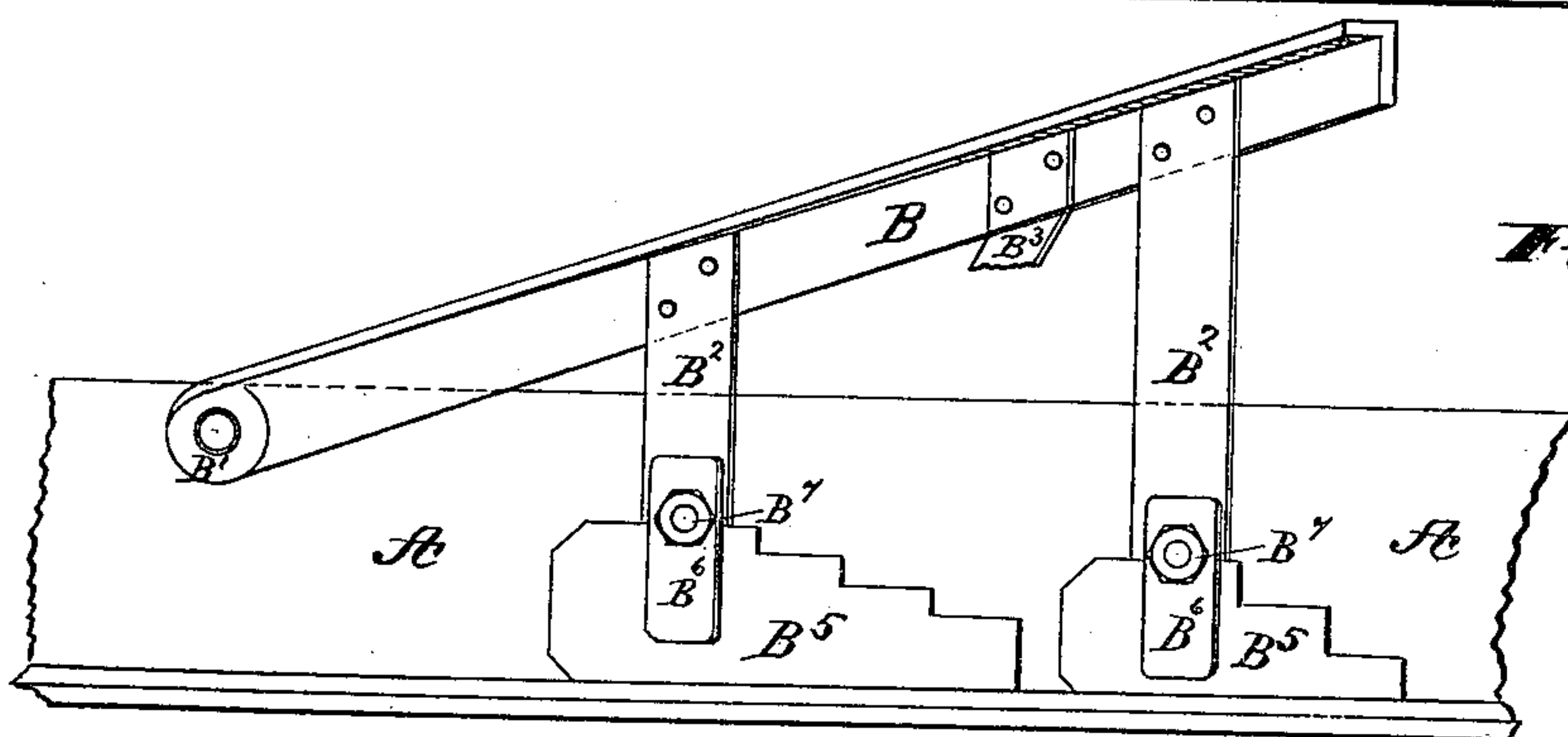
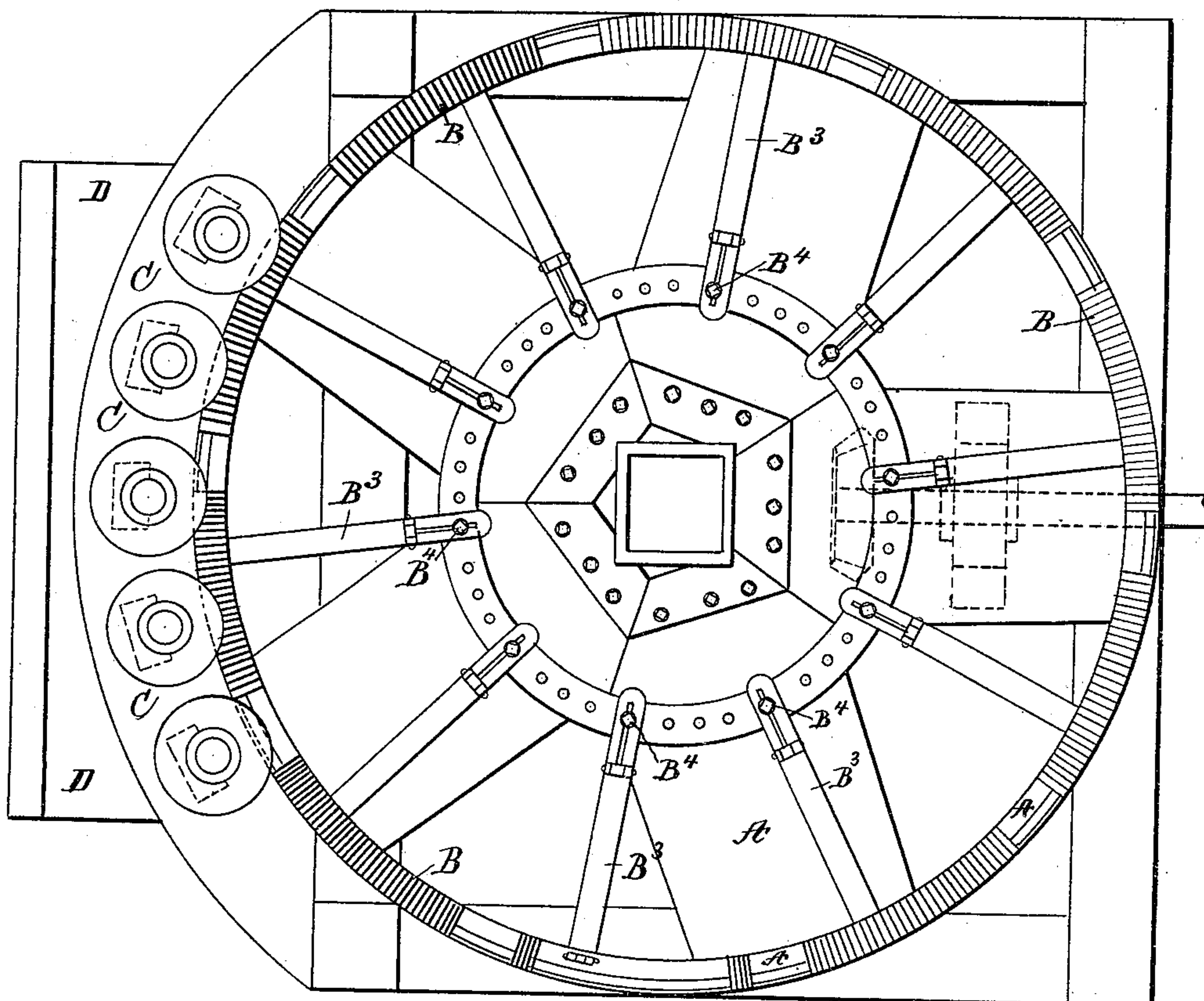
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W. McLEAN.  
ORE PULVERIZER.

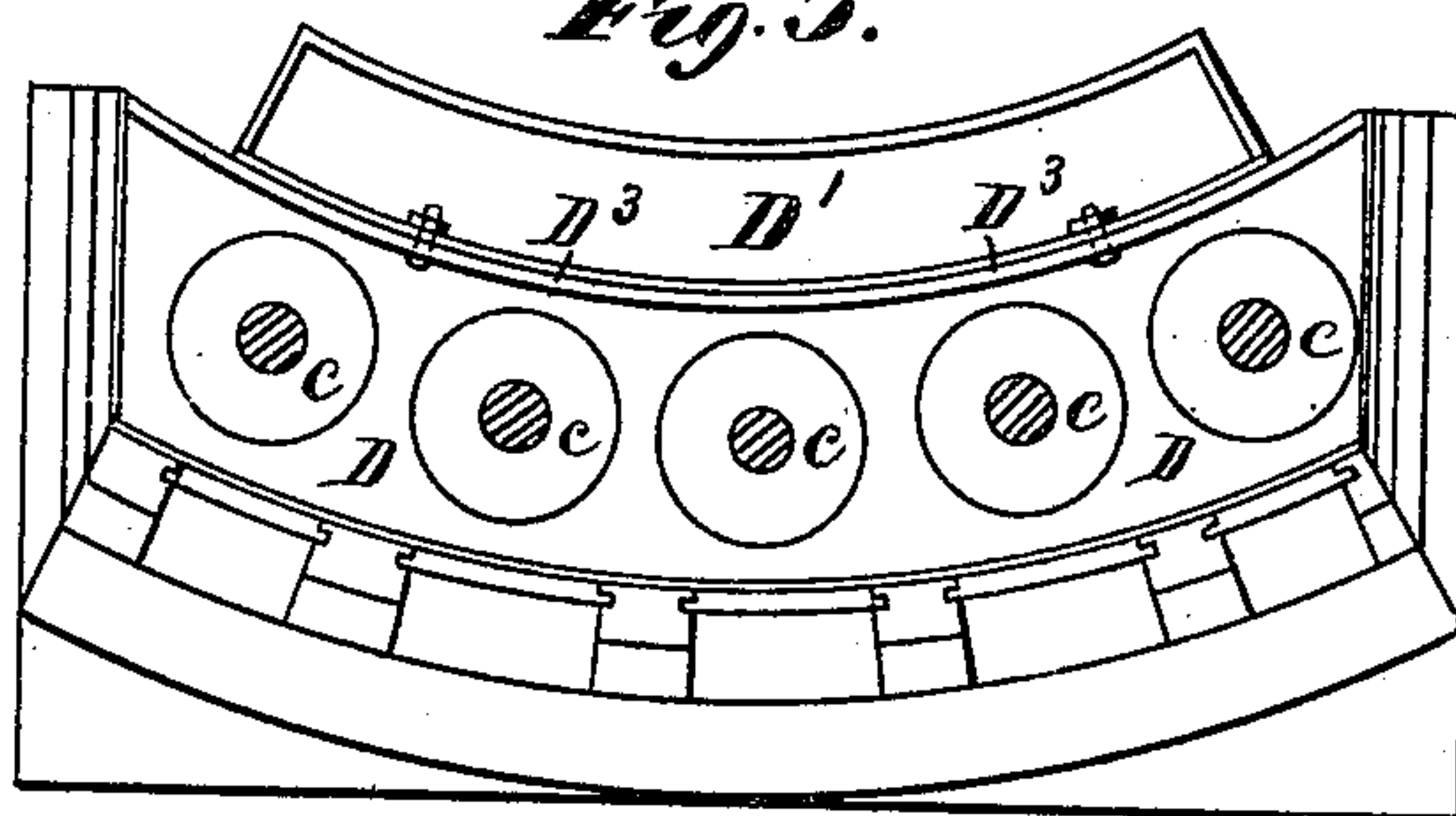
No. 377,167.

Patented Jan. 31, 1888.

*Fig. 1.*



*Fig. 5.*



Witnesses:  
Gabriel J. W. Goldsieg.  
C. E. Jones.

Inventor.  
Wm McLean  
By Chas J. Cook  
his attorney

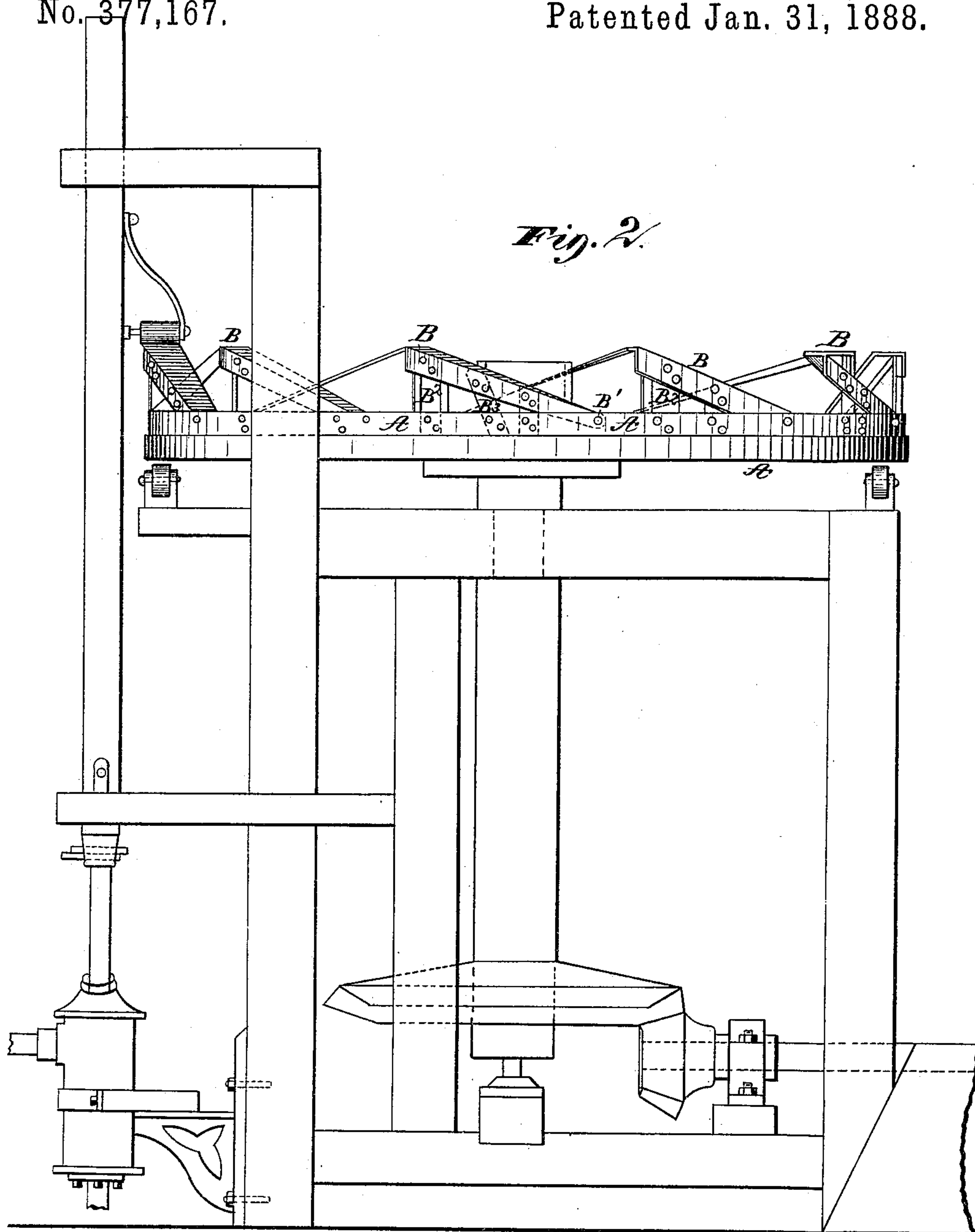
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(No Model.)

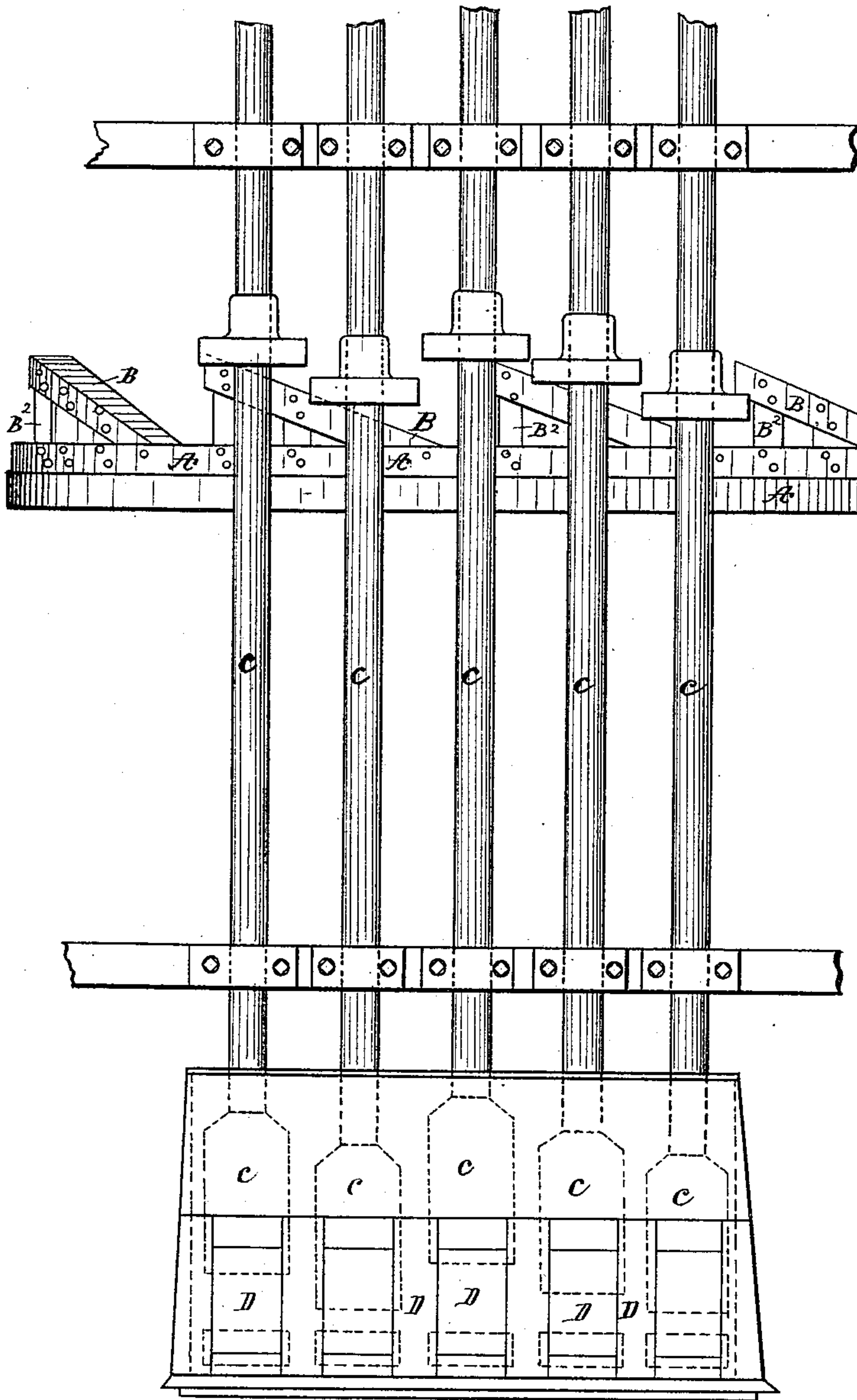
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W. McLEAN.  
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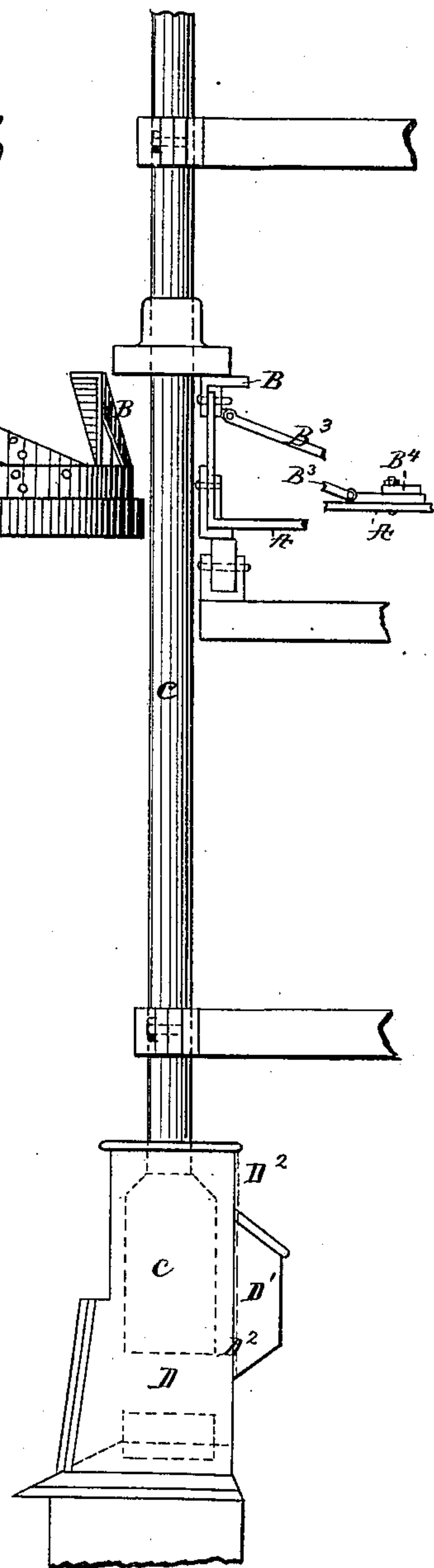
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*Fig. 4.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

WILLIAM McLEAN, OF GOULBURN, NEW SOUTH WALES.

## ORE-PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 377,167, dated January 31, 1888.

Application filed December 16, 1885. Serial No. 185,838. (No model.) Patented in Victoria October 15, 1885, No. 4,282; in Queensland October 20, 1885; in New South Wales October 22, 1885, No. 1,703; in New Zealand October 26, 1885, No. 1,604; in Tasmania December 5, 1885, No. 381; in South Australia December 7, 1885, No. 634, and in England December 17, 1885, No. 15,504.

*To all whom it may concern:*

Be it known that I, WILLIAM McLEAN, a subject of the Queen of Great Britain, residing at Goulburn, in the British Colony of New South Wales, miner, have invented new and useful Improvements in Ore-Pulverizers, (Letters Patent for the British Colony of Victoria, dated the 15th day of October, 1885, numbered 4,282; Letters of Registration for the British Colony of New South Wales, dated the 22d day October, 1885, registered number 1,703, and Letters Patent of the British Colony of South Australia, dated the 7th day of December, 1885, No. 634, have been granted, taking effect, respectively, from the said dates for fourteen years, and applications for Letters Patent have been filed in the British colonies on the dates set after each, respectively, as follows: Queensland, on the 20th day of October, 1885; New Zealand, on the 26th day of October, 1885, No. 1,604; Tasmania, on the 5th day of December, 1885, No. 381, and in Great Britain on the 17th day of December, 1885, numbered 15,504, none of which Letters Patent have yet been granted, but when and if granted each will respectively bear the date and number above given,) of which the following is a specification.

This invention relates to that kind of quartz-crushing machines in which stamps are lifted by cams or inclined planes upon a circular frame or wheel, and it has been devised so that the amount of lift of such stamps may be adjusted and so that the stamps will be arranged closely together in a small box. The adjustable cams or inclined planes may of course be used for any purpose where a reciprocating motion is required; but in order that my invention may be clearly understood, reference will now be made to the drawings herewith, in which—

Figure 1 is a plan of a quartz-crushing machine having my improvements attached. Fig. 2 shows an elevation of a somewhat similar arrangement to that of Fig. 1. Fig. 3 is a side elevation of part of Fig. 1, showing part of the circular frame or main wheel and a cam or inclined plane. Fig. 4 is a front elevation of the same, and Fig. 5 a plan of the stamps and mortar, while Fig. 6 is a partial inside eleva-

tion of the main wheel to show the construction of the cams or inclined planes, and Fig. 7 is a section of Fig. 6.

The parts of such a machine are constructed and it is worked as well understood, and I will refer only to such parts as are necessary to illustrate my invention.

A is the main wheel or frame, and B the cams or inclined planes.

C are the stamps, and D the mortar.

B' are the hinges or pins on which inclined planes B are adjusted.

B<sup>2</sup> B<sup>2</sup> are supports or standards.

B<sup>3</sup> are stays, whose length is adjusted by means of bolts.

B<sup>4</sup> B<sup>5</sup> are sliding wedges, B<sup>6</sup> are binding-plates, and B<sup>7</sup> are set-screws.

The stays B<sup>3</sup> are for strengthening or "staying" the cams or inclined planes against the action of the rollers or guides or tappets or of the stamps C. These stays are hinged at one end, so as to conform to the various heights at which it may be desirable to set the said cams B. The bolts B<sup>4</sup> fasten the stays B<sup>3</sup> to the main structure of the wheel, and are passed through slots in said stays, which slots allow of the stays sliding on the bolts when the latter are loosened, and so adjust themselves (viz., the stays) when any adjustment or alteration of height of cams is necessary.

To alter the amount of lift, it is only necessary to loosen set-screws B<sup>7</sup> and bolt B<sup>4</sup> and adjust the inclined plane B upon the pin B' to the angle which will give the required height. The wedges B<sup>5</sup> are then placed tightly under the supports B<sup>2</sup> and the bolt B<sup>4</sup> tightened, as also the screws B<sup>7</sup>, which latter fasten the standards B<sup>2</sup>, wedges B<sup>5</sup>, and binding-plate B<sup>6</sup> onto the periphery of the wheel A.

It will be seen that stamps C are arranged closely together in mortar D, and that they are so arranged that their centers are equally distant from the center of the main wheel A. The mortar D is constructed of a segmental form in plan, as shown, and is fed under the wheel from trough D' through opening D<sup>2</sup>, which may be regulated by sliding door D<sup>3</sup>. The sliding door D<sup>3</sup> may be of any desired character. It is shown in the drawings in the form of an

up-and-down damper between the trough D' and the mortar D. The arrangement of the stamps as shown will allow of combining the whole in a small space.

5 I have found that this construction makes a handy and convenient machine for the purpose described and for pumping, and, having thus particularly described and ascertained the nature of my invention, I would have it  
10 understood that I am aware that such class of machines are now in use, and I do not claim to have invented them; but

What I believe to be new, and therefore claim, is—

15 1. The combination of main wheel A, adjust-

able cams or inclined planes B, mortar D, inclined-plane supports B<sup>2</sup>, sliding wedges B<sup>3</sup>, binding-plate B<sup>6</sup>, and set-screws B<sup>7</sup>, substantially as and for the purposes set forth.

2. The combination of main wheel A, adjust- 20  
able cams or inclined planes B, mortar D, inclined-plane supports B<sup>2</sup>, adjustable stays B<sup>3</sup>, sliding wedges B<sup>5</sup>, binding-plate B<sup>6</sup>, and set-screws B<sup>7</sup>, substantially as and for the purposes set forth.

WILLIAM McLEAN.

Witnesses:

FRED WALSH,  
HENRY P. CHATER.