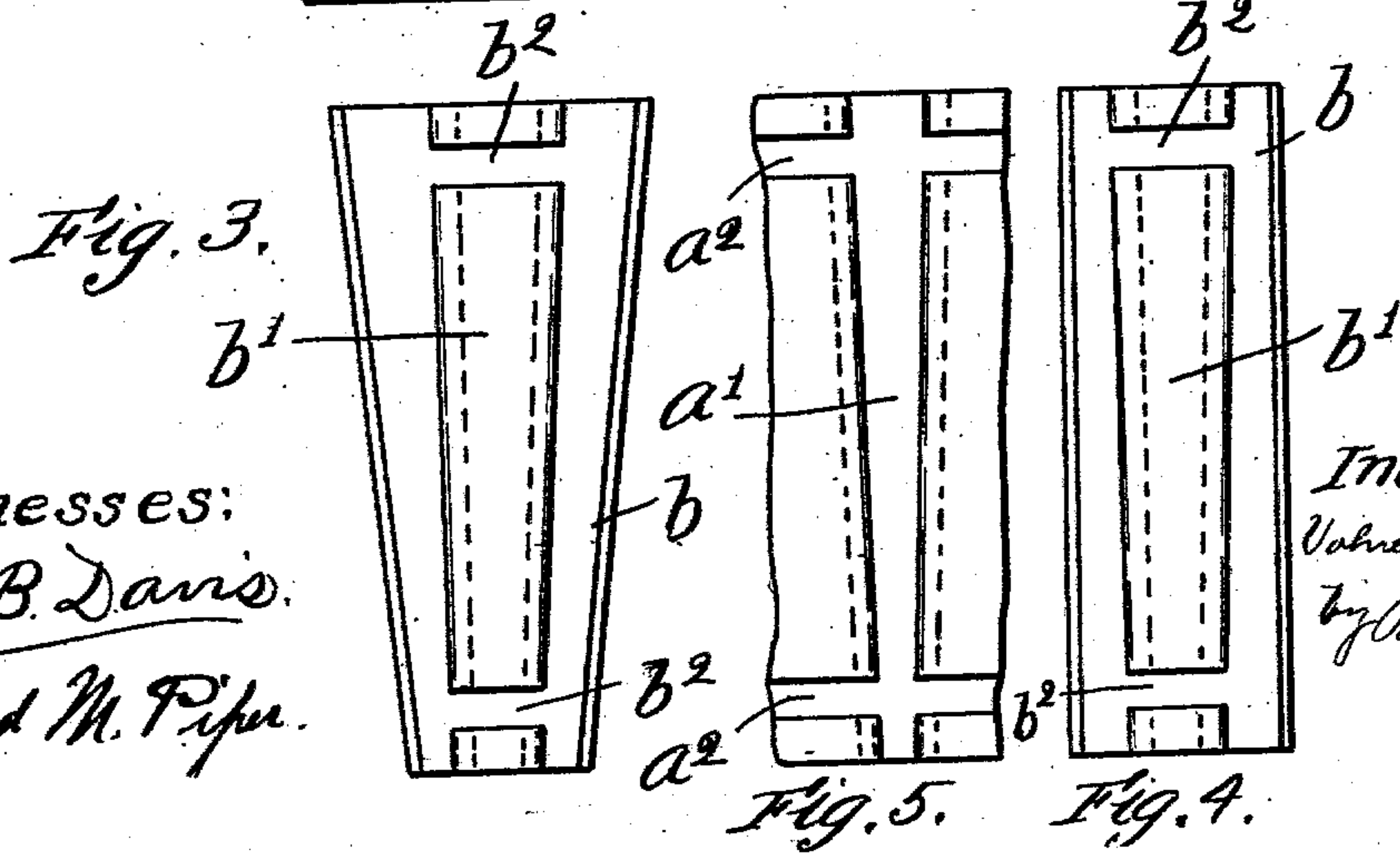
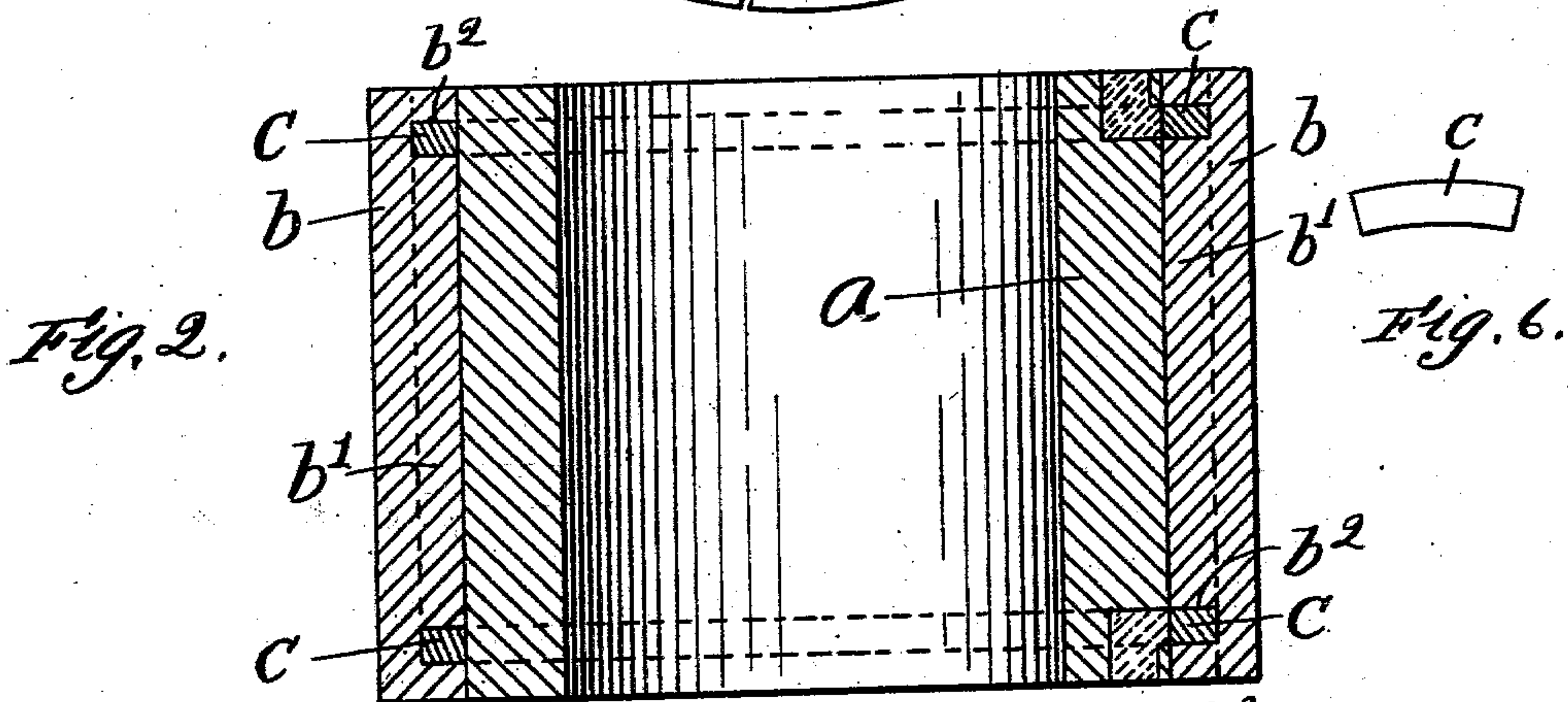
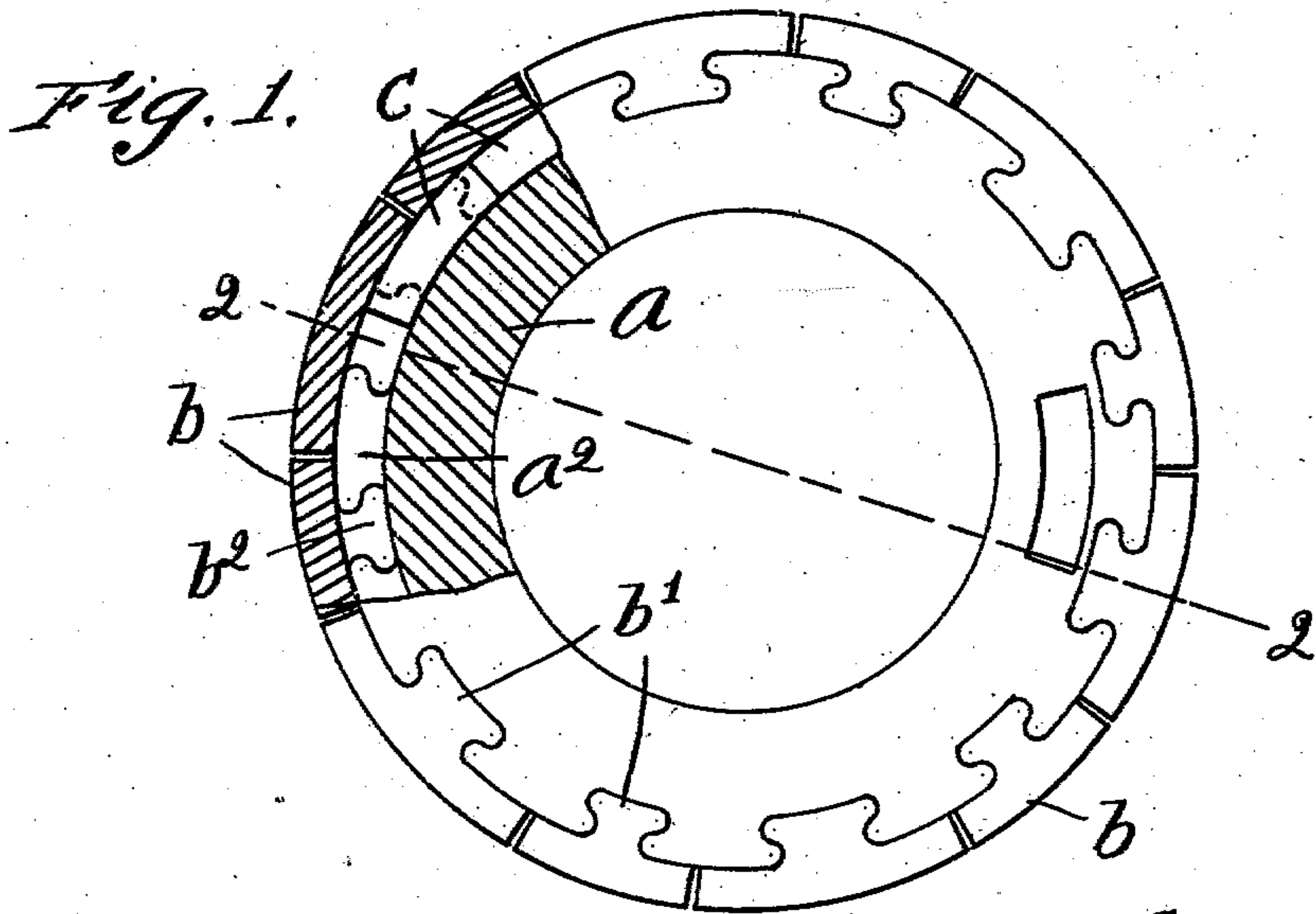


V. W. MASON, JR.
GRINDING OR CRUSHING HEAD OR ROLL.

APPLICATION FILED JAN. 6, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
H. B. Davis.
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Inventor:
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by B. J. Hayes
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No. 745,640.

PATENTED DEC. 1, 1903.

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2 SHEETS—SHEET 2.

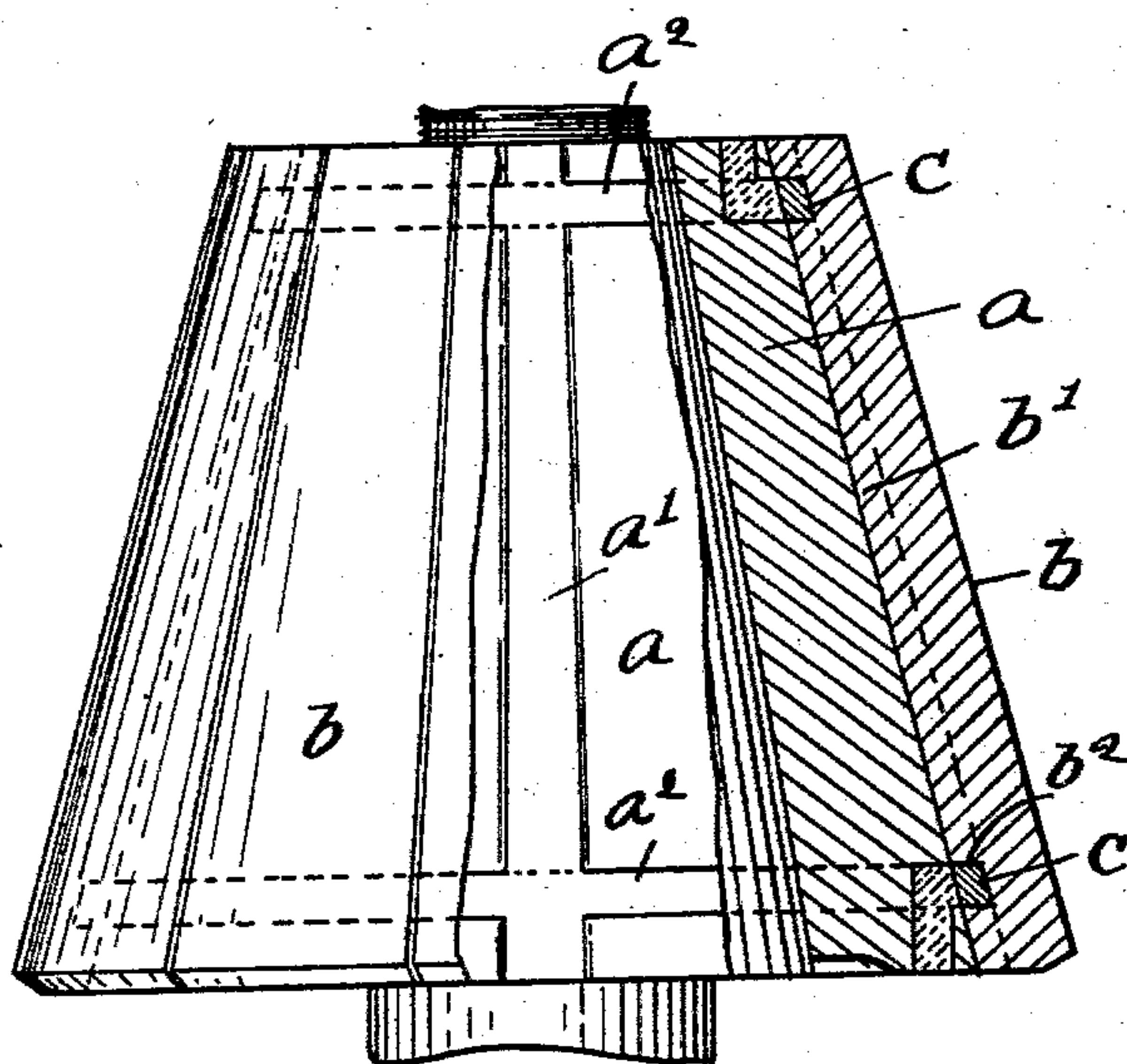


Fig. 7.

Witnesses:

H. B. Davis

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UNITED STATES PATENT OFFICE.

VOLNEY W. MASON, JR., OF NEW YORK, N. Y.

GRINDING OR CRUSHING HEAD OR ROLL.

SPECIFICATION forming part of Letters Patent No. 745,640, dated December 1, 1903.

Application filed January 6, 1902. Serial No. 88,510. (No model.)

To all whom it may concern:

Be it known that I, VOLNEY W. MASON, Jr., of New York, county of New York, and State of New York, have invented an Improvement in Grinding or Crushing Heads or Rolls, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In another application filed by me, Serial No. 56,358, a grinding or crushing head is shown comprising a core and a plurality of segments mounted thereon and connected thereto, and as a way of connecting said segments to the core the core is formed or provided with a plurality of longitudinal dovetailed grooves and the segments with correspondingly shaped ribs which enter said grooves, and said core is also formed or provided with a key-receiving recess crossing transversely each dovetailed groove, and the segments are formed or provided with key-receiving recesses located opposite the key-receiving recesses in the core, and keys are placed in said key-receiving recesses. Openings are formed or provided through the core for the introduction of the keys, and as quite a number of segments are employed the core is formed or provided with a corresponding number of openings or passages leading to the key-receiving recesses. In some instances I find it is objectionable to provide the core with so many openings or passages through it; and this invention has for its object to improve the construction of the means for connecting the segments to the core, whereby the number of openings or passages through the core which lead to the key-receiving recesses may be reduced to the minimum.

In accordance with this invention the core is formed or provided with one or more circumferential grooves and with a plurality of longitudinal dovetailed grooves, and the segments are formed or provided with longitudinal dovetailed ribs and with one or more key-receiving recesses crossing them located opposite the circumferential groove or grooves in the core, and but a single opening or passage through the core need be made to each circumferential groove for the introduction of the keys, which will be curved to conform to the curvature of the core, al-

though more openings or passages may be employed if deemed desirable.

Figure 1 shows an end view and partial section of a grinding or crushing roll embodying this invention. Fig. 2 is a longitudinal vertical section of the same, taken on the dotted line 2 2, Fig. 1. Fig. 3 is a rear elevation of one of the external segments. Fig. 4 is a rear elevation of a modified form of external segment. Fig. 5 is a detail showing a portion of the core in side elevation. Fig. 6 is a detail of one of the curved keys, and Fig. 7 is a modification showing in side elevation and partial section a grinding or crushing head for gyratory crusher embodying this invention.

The core *a* is made as a cylinder of ordinary machineable metal and is of any suitable diameter and length and is made hollow to receive a spindle or shaft.

The core *a* is formed or provided externally with a plurality of longitudinal dovetailed grooves *a'*, which, as herein shown, extend from end to end thereof, said grooves being made wider at one end than at the other, and said grooves are oppositely arranged, the wide end of each groove being adjacent the narrow end of the next groove.

The segments *b*, of which there may be any desired number, are each provided upon its inner side with a dovetailed rib *b'*, corresponding in shape to the dovetailed grooves *a'*, being wider at one end than at the other, and herein shown as extending from end to end of the segments, and said segments are also made wider at one end than at the other. The several segments will be disposed on the core in opposite ways, as shown.

To lock the segments *b* to the core, said core is formed or provided with one or more circumferential grooves *a''*, two such grooves being herein shown, one near each end of the core, said grooves crossing the dovetailed grooves *a'* at approximately right angles, and on the inner side of each segment *b* like grooves *b''* are formed or provided, extending transversely across the ribs *b'* at points opposite the grooves *a''* in the core, so that when said segments are placed on the core circumferential recesses will be produced extending entirely and continuously around the core, between the core and segments.

A suitable opening or passage is provided through the core leading to each circumferential groove a^2 , although more than one such opening or passage may be provided, 5 leading to each groove a^2 , if desired, and through said openings or passages curved or other shaped keys c will be introduced, which will be placed in the circumferential recesses provided between the core and segments. 10 There will be as many of these keys c employed as deemed desirable, preferably one for each segment, although any suitable number may be employed, and said keys when properly placed in said circumferential 15 groove will transversely cross the ribs b' of the segments, and thereby hold said segments effectively against endwise movement on the core. The keys c having been placed in the circumferential groove or recess, the open- 20 ing or openings leading thereto will be closed by means of zinc or other fusible metal.

The segments b may be made with parallel sides, as shown in Fig. 4, if desired, and, furthermore, the core a may be made conical, 25 as shown in Fig. 7, and the segments mounted thereon, said core and segments being formed or provided to produce between them a continuous circumferential recess or recesses around the core.

30 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a grinding or crushing head or roll, a core having one or more continuous external 35 circumferential grooves, and also having a plurality of longitudinal dovetailed grooves

crossing said circumferential groove or grooves, a corresponding number of segments mounted on the core, each having a dove- 40 tailed rib to fit said grooves, and also having one or more key-receiving recesses crossing said rib opposite the circumferential groove or grooves in the core, and a plurality of curved keys contained in said circumferential 45 groove or grooves which are arranged in alinement and enter the transverse recesses in the segments, and means for holding said keys in place, substantially as described.

2. In a grinding or crushing head or roll, a core having one or more continuous external 50 circumferential grooves and one or more passages through the core leading thereto, and also having a plurality of longitudinal dovetailed grooves crossing said circumferential groove or grooves, a corresponding number 55 of segments mounted on the core, each having a dovetailed rib to fit said grooves, and also having one or more key-receiving recesses crossing said rib opposite the circumferential groove or grooves in the core, and 60 a plurality of curved keys contained in said circumferential groove which are arranged in alinement and enter the transverse recesses in the segments, and means for holding said keys in place, substantially as described. 65

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

VOLNEY W. MASON, JR.

Witnesses:

B. J. NOYES,
H. B. DAVIS.