

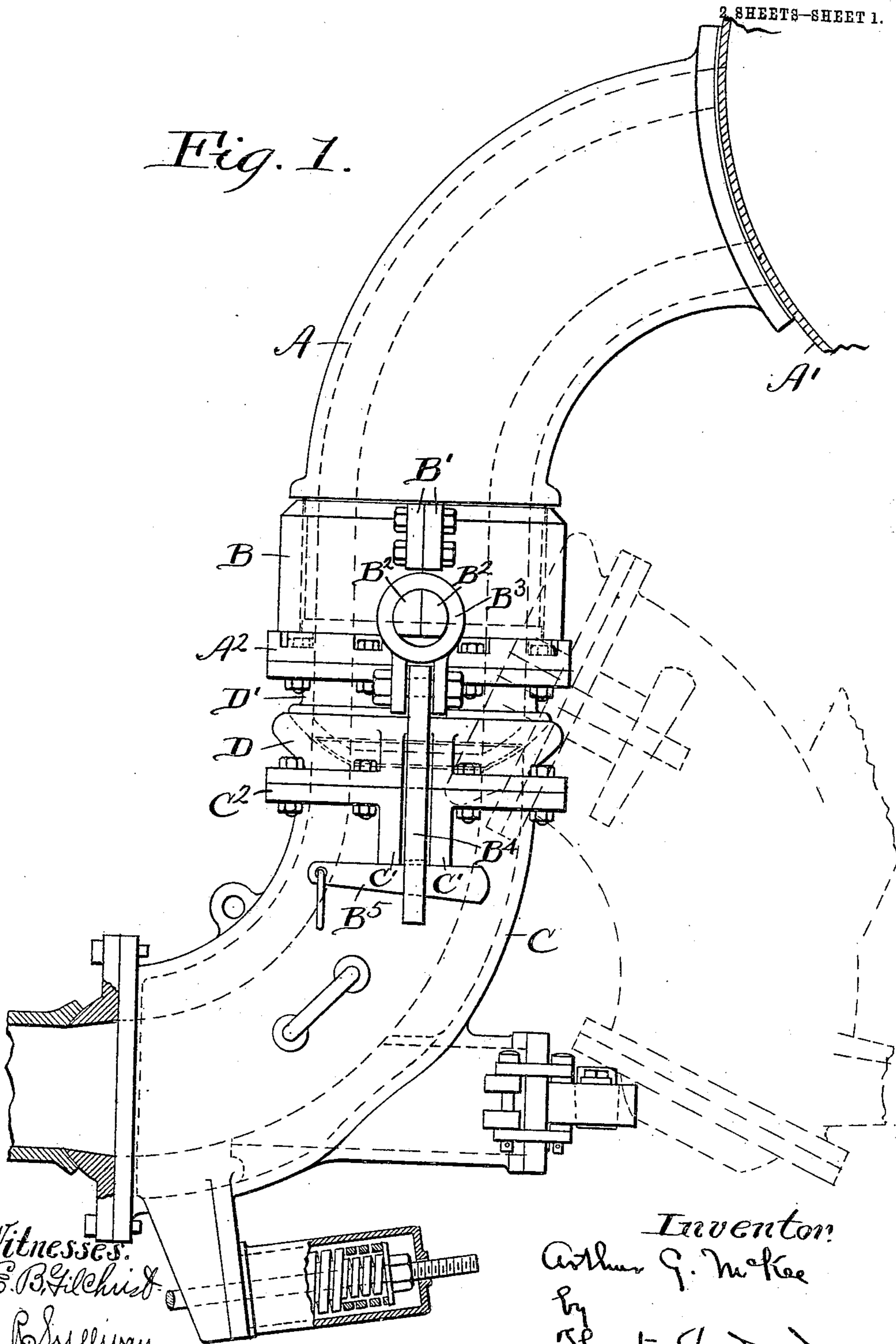
979,187.

A. G. McKEE.  
TWYER STOCK.  
APPLICATION FILED DEC. 5, 1907.

Patented Dec. 20, 1910.

2 SHEETS—SHEET 1.

*Fig. 1.*



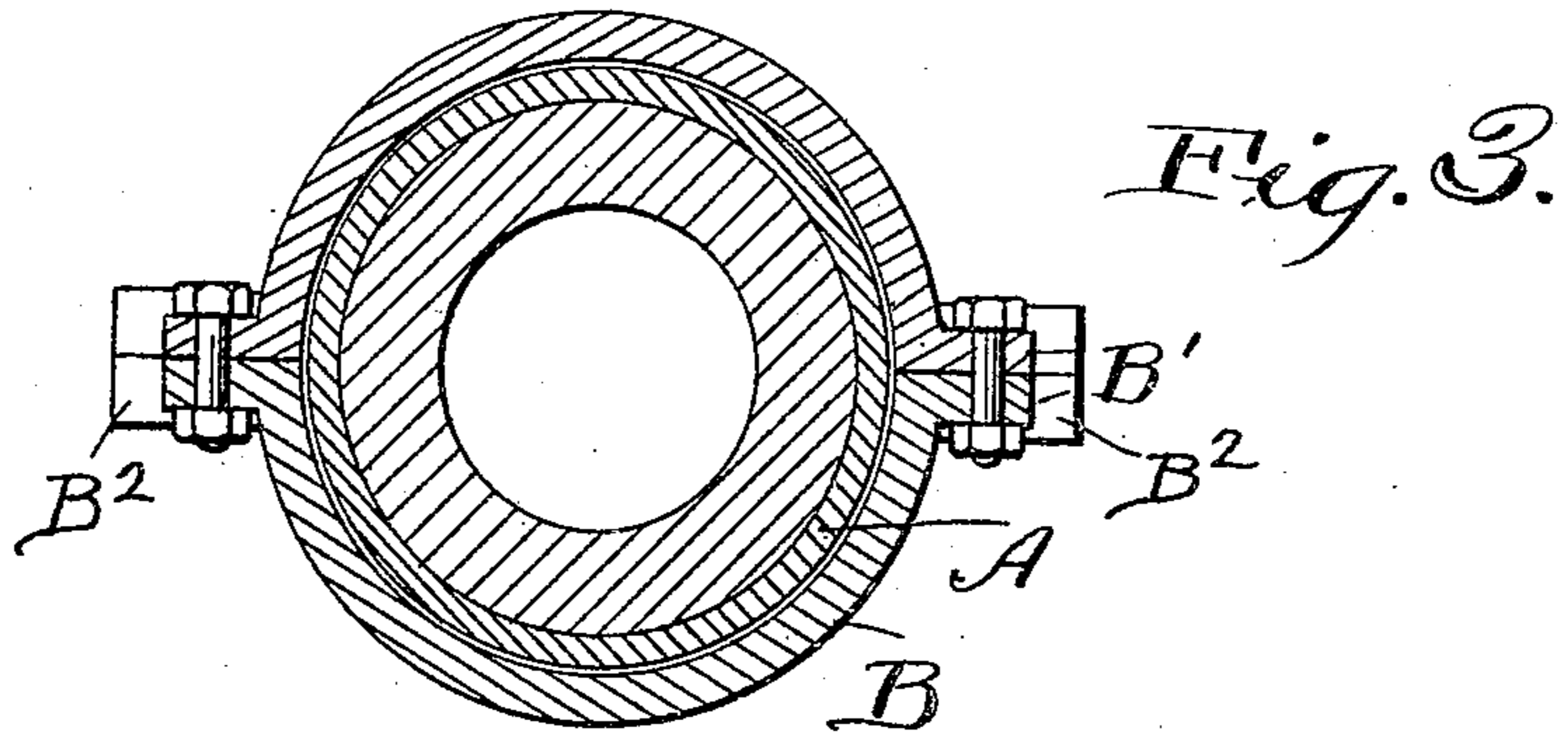
Witnesses.  
E. B. Gilchrist.  
H. B. Sullivan.

Inventor.  
Arthur G. McKee  
By  
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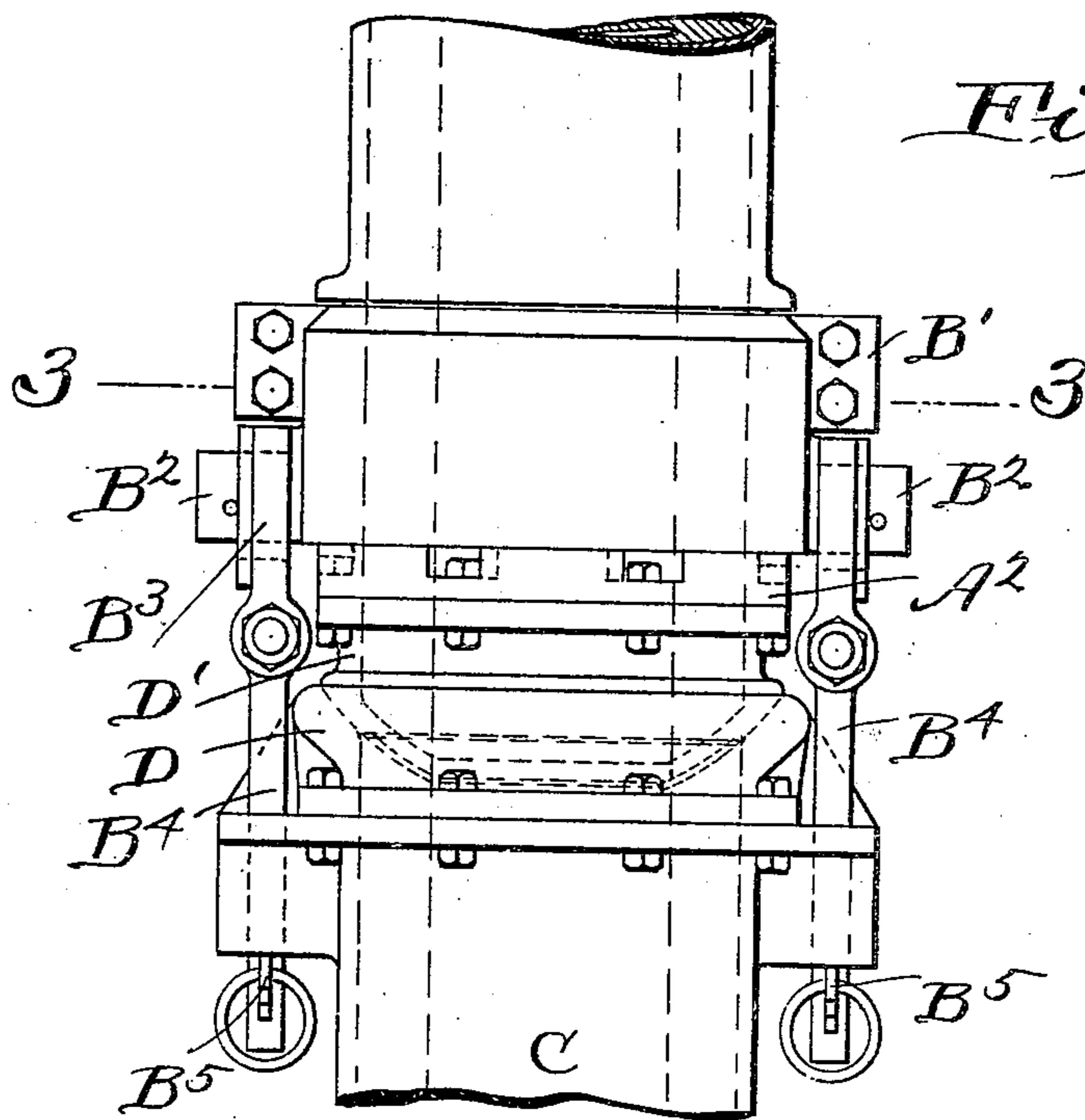
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2 SHEETS—SHEET 2.



*Fig. 3.*



*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

ARTHUR G. McKEE, OF CLEVELAND, OHIO.

TWYER-STOCK.

979,187.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Application filed December 5, 1907. Serial No. 405,232.

*To all whom it may concern:*

Be it known that I, ARTHUR G. McKEE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Twyer-Stocks, of which the following is a full, clear, and exact description.

The object of the present invention is to provide an improved twyer stock.

More particularly my purpose is to provide a construction of twyer stock in which provision is made for ready replacement of the ball and socket interposed between the bustle pipe and the twyer stock, so that this replacement may be effected without taking down the stock or interrupting the operation of the furnace materially.

A further object has been to provide a construction in which a supporting collar for the stock shall be employed which shall support the stock and take the strains entirely in the solid metal and not have them transmitted through any bolts or joints as in certain prior structures and which shall also be capable of a swivel or rotary motion so that it can be rotated 90° and swung back entirely out of the way while working in the twyer hole into the furnace.

Referring to the accompanying drawings illustrating an embodiment of my invention: Figure 1 is an elevation partly in section showing my preferred construction, the stock being shown in dotted lines in the position which it occupies when swung away from the blow pipe. Fig. 2 is a detail showing connected parts about the ball and socket joint. Fig. 3 is a cross section of the supporting collar taken in the line 3—3 of Fig. 2.

As frequently occurs in such construction, a short neck A projects from the bustle pipe A'. At the lower part of this neck I provide a flange A<sup>2</sup> for the support of a rotatable collar B from which the twyer stock C hangs. In my construction this collar is split and may be provided with short side flanges B' through which the connecting bolts are passed, and each half of the collar is provided adjacent to the line of joinder with a portion of a cylindrically formed stud B<sup>2</sup>,—the two parts of the stud being mated together so as to afford a bearing for

the hanger eyes B<sup>3</sup> from which the supporting links B<sup>4</sup> for the twyer stock swing. These links are each pivotally mounted so as to be capable of sidewise movement.

The twyer stock is provided at its upper end with ears or lugs C' on each side, against the under side of which a wedge pin B<sup>5</sup>, slidably mounted in a transverse slot in the lower end of the links, bears. A circumferential flange C<sup>2</sup> surrounds the upper end of the stock, to which flange is bolted the socket member D of the ball and socket joint between the stock and the supporting neck. The ball member D' of the joint is similarly bolted to the flange A<sup>2</sup> of the supporting neck. By the arrangement just noted, perfect freedom of movement is, obviously, attained, so that the lower end of the stock may be suitably fitted to and held against the mouth of the twyer or blow pipe, and whenever desired, the stock may be rotated and swung to one side as for example at such times as when repairs are made about the blowpipe.

It will be seen by the above construction that whenever it becomes necessary to remove the ball and socket members it will be merely necessary to remove the bolts by which the flanges of these members are held to the adjacent parts, and then when opportunity arises during some interruption of the operation of the furnace to withdraw the wedge shaped keys somewhat from the slot of the swinging links in which they are mounted, thereby letting the stock drop a short distance, and permitting the immediate removal of the ball and socket members, which may be slipped out from between the neck and the stock and replaced at once by new members. The wedge shaped keys are then driven back into position to draw the stock up and the operation of the furnace resumed, after which the securing bolts may be replaced at leisure. This may be done without removing or dismounting the stock, or without the use of any machinery for the purpose of manipulating the same, and the time occupied in the interchange of parts is negligible. It will further be noted that the strain created by the drawing in of the wedge keys to make effective joints will, in the construction which I have devised, be transmitted to the supporting neck entirely

through the solid metal of the collar and not through bolts or other connections as would be the case were the joint of the collar located 90° around the collar away from the supporting studs.

5 Having thus described my invention, I claim:

1. In a furnace twyer, the combination of a fixed supply neck, a collar rotatably supported on the neck, a twyer stock and removable ball-and-socket members between the twyer stock and said collar.

2. In a furnace twyer, the combination of a fixed supply neck, a collar rotatably supported on the neck, a twyer stock with links supporting it from said collar, and removable ball-and-socket members between the twyer stock and the zone of attachment of the links to the collar.

3. In combination, a supply pipe and a twyer stock, a separable ball and socket connection between the same, and means for suspending the stock from the supply pipe adapted to permit the lowering of the stock

a sufficient distance for the removal and re-25 placement of the ball and socket members.

4. In combination a supply pipe and a twyer stock, a split supporting collar on the supply pipe having a portion of a bearing stud on each side of the split joint, said sections when mated together forming a bearing, and suspending means for the stock on said bearing holding said stud sections together.

5. In combination, a supply pipe and a twyer stock, removable ball and socket members between the same and means for suspending the twyer stock from the supply pipe, adapted to permit the removal of the ball and socket members without disconnect-40 ing the twyer stock from the supply pipe.

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

ARTHUR G. MCKEE.

Witnesses:

A. C. NELSON,  
L. ROSS ELLETT.