2 Sheets—Sheet 1.

J. W. PHILLIPS.

EXPANSION JOINTS FOR STEAM PIPES.

No. 183,967. Patented Oct. 31, 1876.

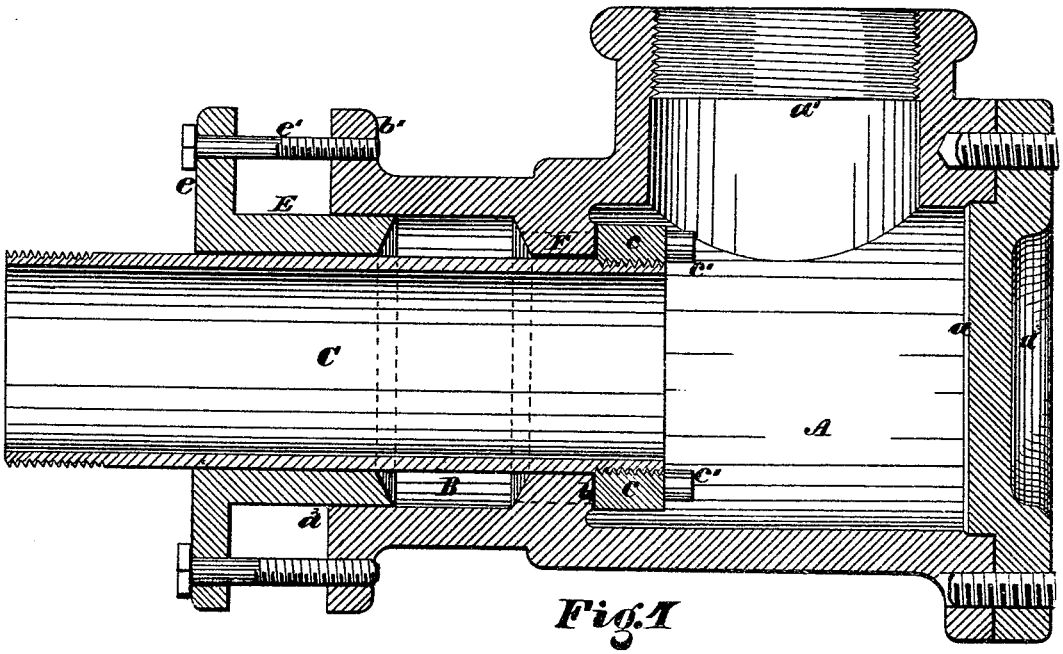

Fig. 1

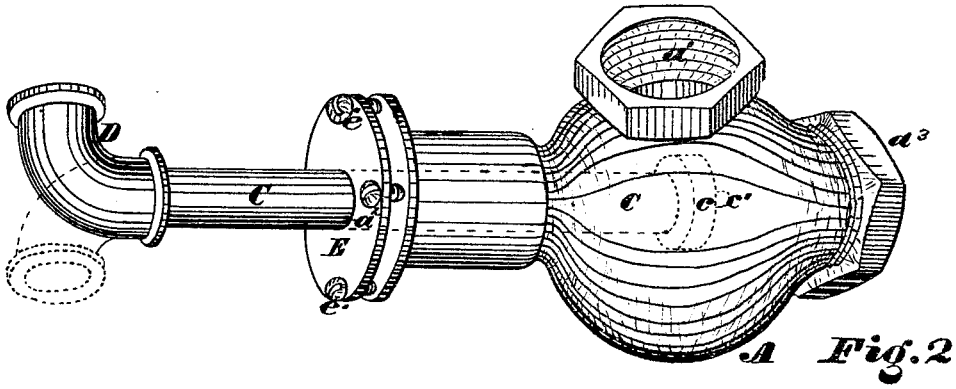

Fig. 2

Witnesses

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2 Sheets—Sheet 2.

J. W. PHILLIPS.

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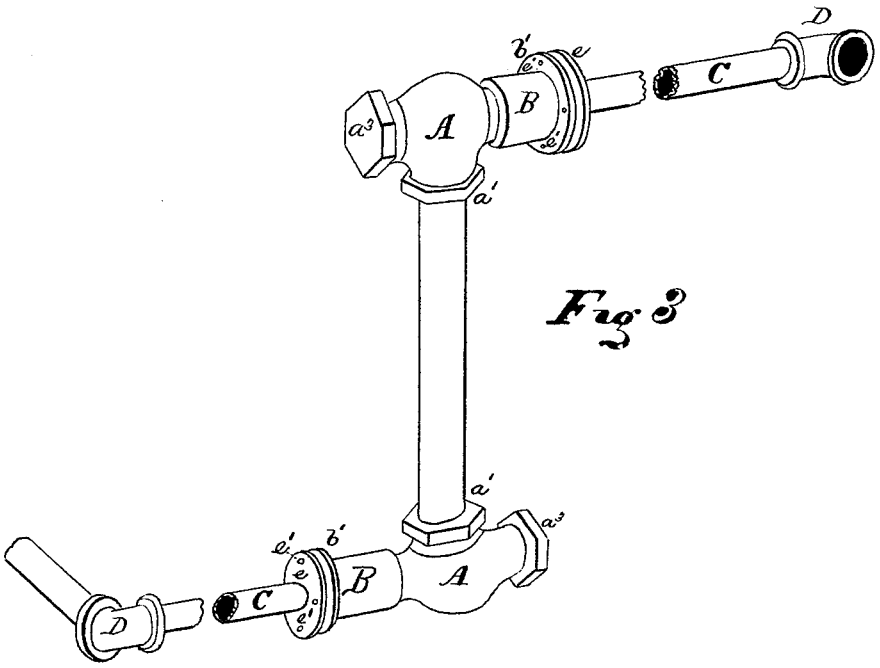

Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN W. PHILLIPS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN McCONN, OF SAME PLACE.

IMPROVEMENT IN EXPANSION-JOINTS FOR STEAM-PIPES.

Specification forming part of Letters Patent No. **183,967**, dated October 31, 1876; application filed April 12, 1876.

To all whom it may concern:

Be it known that I, J. WESLEY PHILLIPS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Expansion-Joint for Steam-Pipes; and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section, and Fig. 2 is a perspective of my invention. Fig. 3 is a perspective view of my invention, showing the manner in which the joint is made to rock.

The object of my invention is to provide a joint which will "rock," and permit the barrel to slide when the steam-pipes, which said joint connects, expand.

My invention consists in the peculiar construction and combination of parts, having reference particularly to a joint which will rock on a sliding barrel when the steam-pipe expands, as hereinafter more fully set forth.

Referring to the accompanying drawing, A shows the ball or body of a joint for connecting steam-pipes, said body having three ways, a a^1 a^2. The way a is closed by a nut, a^3, the way a^1 is threaded for the reception of the end of a steam-pipe, while the way a^2 is provided with a stuffing-box, B, in which slides the barrel C, said barrel being connected by any suitable means, as an elbow, D, with steam-pipes. c is a collar, screwed or brazed on the end of the barrel, having a seat against the shoulder b, by which means the said barrel is prevented from being drawn out of the ball or globe A accidentally. c' c' are short studs on the collar c, by means of which said collar can be unscrewed from the barrel C, or the latter from the elbow or other connection D, when necessary.

E is a follower for compressing the packing, its flange e being connected with the flange b' by screws e'.

When the joint is made of iron, a non-corrosive ring of brass or other equivalent material will be inserted or fixed, as shown at F in dotted lines encircling the barrel C.

The operation is as follows: The joint being in place, when the steam-pipes expand under the influence of heat, the barrel C will slide in the stuffing-box in the direction of the nut a^3, said barrel also turning on its longitudinal axis, or allowing the ball A or body of the joint to rock upon it.

Should the pipes expand so greatly as to bring the studs c' against the nut a^3, the passage of the steam would not be cut off in the joint, as said studs serve the purpose of preventing the face of the collar c from coming flush against the nut a^3, as well as affording means for unscrewing the collar or barrel, as set forth.

The rocking motion of the joint already referred to may occur in various ways, and obviously under any arrangement of pipes in which the expansion of one or more lengthwise exerts exerts a lateral pressure on the vertical pipe, having connection with the joint at a'. For instance, if the pipes be arranged as in Fig. 3, the expansion of the horizontal branches running at right angles to the sliding pipe C will necessarily throw the vertical pipe connecting the two rocking balls out of perpendicular, the balls turning on the axis of the sliding pipes C.

The invention is not, however, limited to the precise arrangement shown, but is applicable in any situation where a lateral pressure is exerted upon the vertical pipe a'.

What I claim as my invention is—

1. The body or ball A, having a stuffing-box, B, and way a^1, in combination with the barrel C, having a collar, c, forming a sliding and rocking expansion-joint for steam-pipes, arranged at right angles to each other, substantially as set forth.

2. In combination with the sliding barrel C, the collar c, provided with studs c', which serve as means to permit the unscrewing of said barrel or collar, and to prevent the closing of the joint by the sliding of said barrel, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of Mach, 1876.

JOHN W. PHILLIPS.

Witnesses:
JOHN TURER,
RANDOLPH L. MOORE.