(No Model.)

F. G. COGGIN.

DASH POT BUMPER.

No. 272,652. Patented Feb. 20, 1883.

Fig 1

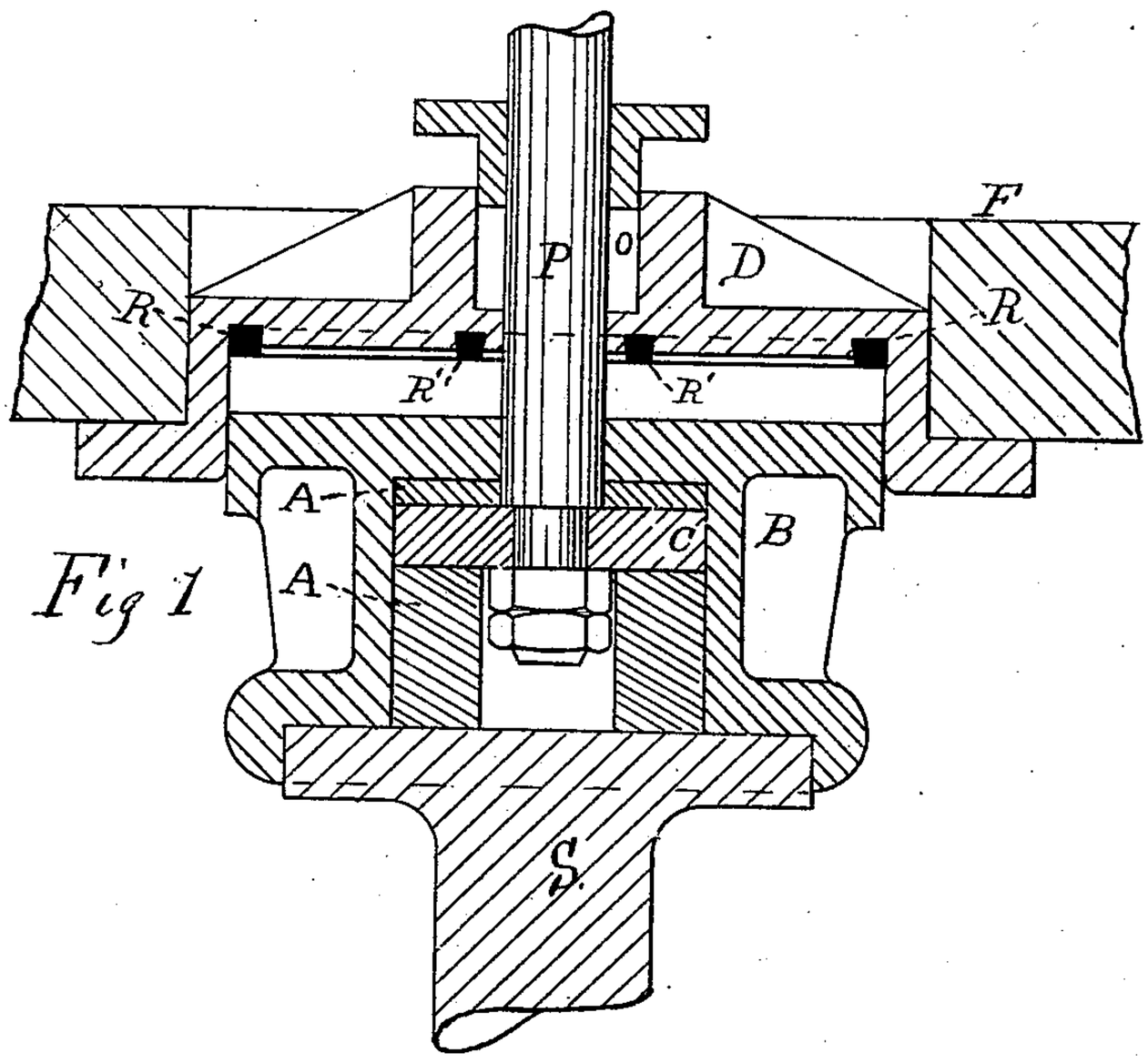
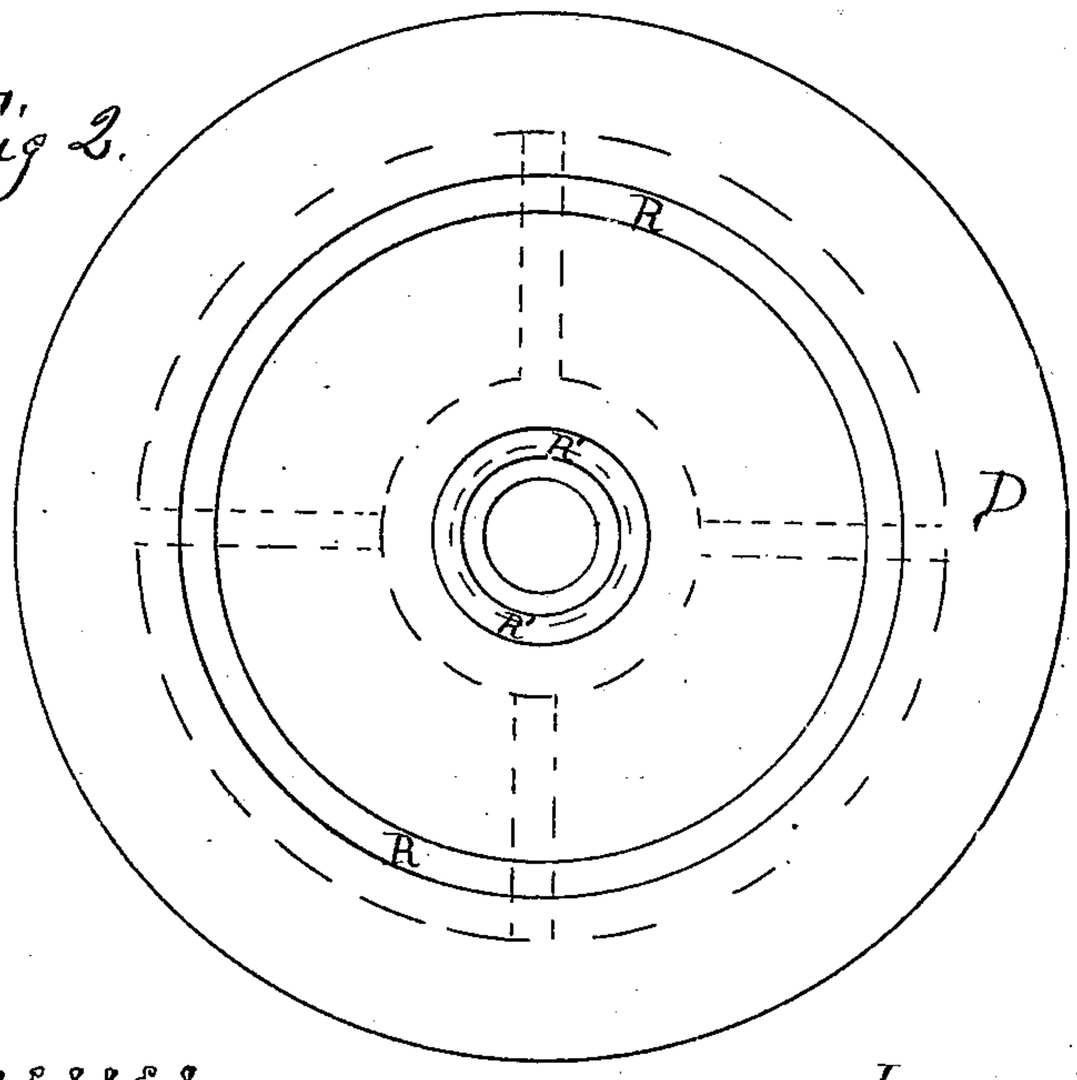


Fig 2.



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FREDERICK G. COGGIN, OF LAKE LINDEN, MICHIGAN.

DASH-POT BUMPER.

SPECIFICATION forming part of Letters Patent No. 272,652, dated February 20, 1883.

Application filed June 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. COGGIN, a citizen of the United States, residing at Lake Linden, in the county of Houghton and State of Michigan, have invented a new and useful Improvement in Dash-Pot Bumpers, of which the following is the specification.

My invention relates to an improvement in the bumper used in steam-stamps and similar machines for the purpose of stopping the piston and stamp-shaft in its upward stroke, and it is also applicable to other machines where it is desired to stop the reciprocating parts suddenly and near a certain point.

The object of my invention as applied to a dash-pot used for that purpose is to stop the motion of the reciprocating parts suddenly and near its possible limit, and yet make it impossible to strike the bottom of the dash-pot with its plunger, metal to metal. In its application to the steam-stamp I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through the center of the dash-pot and bonnet. Fig. 2 is a view looking into the bottom of the dash-pot.

Similar letters refer to similar parts throughout the views, in which—

F is a portion of the stamp-frame.

D is the dash-pot, in the bottom of which are inserted the rings R R′.

B is the stamp-shaft bonnet, which also forms the dash-pot plunger, and is bolted to the stamp-shaft S, which extends into the metal.

P is the piston-rod, which extends into the steam-cylinder.

C is a collar fastened to the rod P, and on each side of which are rubber rings A A, to break the continuity of metal in connecting rod to stamp-shaft.

Having thus described the parts, I will proceed to describe the necessity for and the application of my invention, the novelty of which consists in the use of packing-rings for the purpose of retaining the air compressed within the dash-pot.

In steam-stamps and other similar machines where the valve-gear is operated independently of the reciprocating parts, the motion of the latter is governed at one end by the material to be stamped and at the other end by a bumper. The bumper usually used for this purpose is a rubber spring, which, being capable of compression, necessitates leaving a large clearance between piston and cylinder heads, which is the source of an enormous waste of steam, to obviate which the dash-pot was introduced; but in practice it was found that after the circumferential surfaces of the pot and plunger became slightly worn the air could not be sufficiently confined to prevent the plunger striking the bottom of the pot, which would not only destroy the pot, but would endanger the rest of the machine. To prevent this and make the dash-pot available for what it was intended is the object of my invention, and is accomplished as follows: I insert packing-rings R R′ either in the bottom of the dash-pot, as shown, or in the top of the bonnet B, preferably the former. These rings project beyond the surface, as shown, and are rendered more or less yielding when hit by the bonnet, either by the use of a material elastic in itself or any other material with a suitable backing behind it that will allow it to yield. Now, when the bonnet strikes these rings, a perfect air-tight joint is formed, making it impossible for the air which is compressed between the ring R and the ring R′ to escape, and a perfect air-cushion is obtained, which makes it impossible for the bonnet or plunger to strike the bottom of the dash-pot, though it may come so near as to make it practically the limit of the stroke without danger to itself or the machine. With the stuffing-box O properly packed the ring R′ may be dispensed with, and under some circumstances a packing-ring in the circumferential surface of the dash-pot or plunger may be substituted for the ring R; but the rings R and R′, as shown, are considered to be the most simple and efficient.

I am aware of the use of the dash-pot for retarding and even stopping a reciprocating motion where the reciprocating parts are light and the force is gravity or a spring. In such cases the bottom of the dash-pot is relied upon as the limit of the motion, and is always struck. Such an adaptation of the dash-pot would be entirely useless for the purposes herein

set forth, where the dash-pot has to resist a steam force as well as to overcome the inertia of very heavy reciprocating parts.

Having thus described my invention, its application, and use, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a dash-pot bumper, of the dash-pot and dash-pot plunger, with packing-rings, substantially as herein described, for the purpose of retaining the air compressed within the dash-pot, for the purposes herein set forth.

FREDERICK G. COGGIN.

Witnesses:
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