J. BRODIE.

TAPPETS FOR STAMP-RODS.

No. 183,631. Patented Oct. 24, 1876.

Fig. 1.

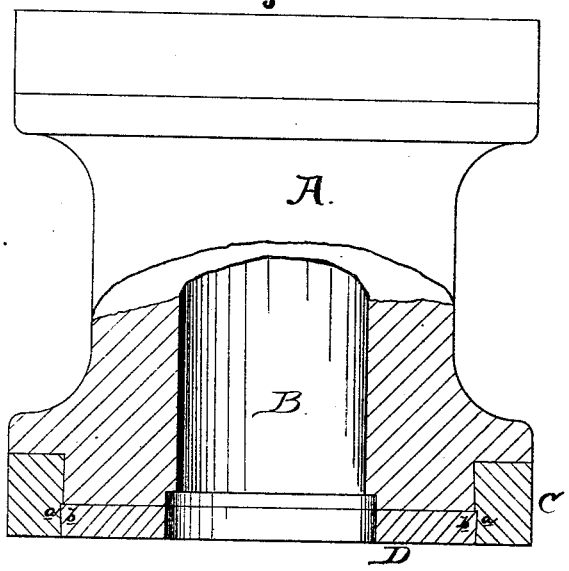
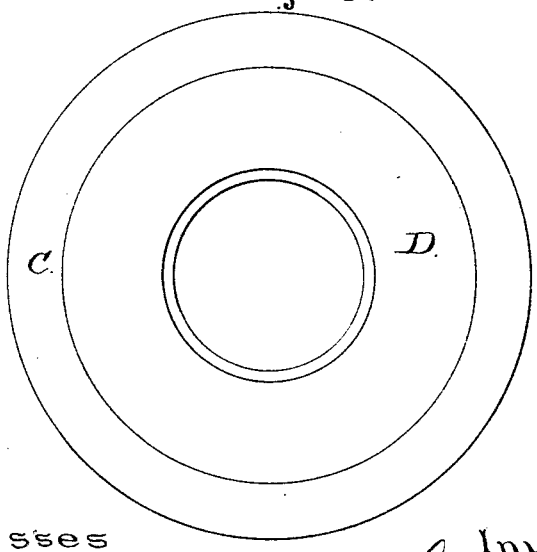


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES BRODIE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN TAPPETS FOR STAMP-RODS.

Specification forming part of Letters Patent No. **183,631**, dated October 24, 1876; application filed March 13, 1876.

To all whom it may concern:

Be it known that I, JAMES BRODIE, of the city of San Francisco, State of California, have invented an Improvement in Tappets for Stamp-Stems of Quartz-Mills, of which the following is a specification:

My invention relates to the tappets of quartz-mill stamps, that receive the strokes of the cams employed to raise the stamps. It consists in an iron plate and steel ring shrunk upon the end of the tappet, and forming the face of the same, so that when the face is worn it can be removed without damage to the body of the tappet, which can thus be preserved for any length of time. These means also cause the face of the tappet to wear more evenly and for a greater length of time than heretofore.

The accompanying drawing shows, in Figure 1, a front elevation of the tappet, with the lower portion of its side broken away to show the construction of the face. Fig. 2 is a plan view of the face of the tappet.

The tappet is that part of the machinery in a quartz-mill secured to the stamp-stem, and against which the strokes of the cam are received. The action of the cam employed to raise the stamps causes the stem and its tappet to make a rotary as well as a vertical movement, and the friction of the cam upon the face of the tappet causes the surface, and particularly the rim, to wear away in a short time, and very irregularly. Thus the operation of the mill is soon impaired by the imperfect action of the stamps.

My invention consists in constructing the face of the tappet A of two kinds or qualities of metal, differing from each other in degrees of hardness, the ring being formed of a steel ring, C, and the rest of the area within this rim being composed of an iron plate, D. As the action of the cam upon the tappet to give it the rotary movement produces an unequal wearing away of the face where it is composed entirely of one kind of metal, by reason of the greatest amount of the friction coming against the rim of the tappet, I am enabled to keep the face smooth and equal by making the part having the most work of a harder metal than the other portion of the face. Therefore the cam produces an equal wearing of the hard-metal rim C and the softer face D within it.

The end of the body A of the tappet is diminished in size to receive the steel ring, which fits closely to the body, and projects beyond the end of the same. This steel ring is beveled inwardly on the inside, where it projects beyond the bottom of the tappet, as shown by *a*. The rim of the iron plate D has an outward bevel, *b*. The steel ring is heated, when the plate D is placed in the bevel *a*, and the ring shrunk into the position shown in Fig. 1, thus holding all the parts firmly together.

When the plate and the steel ring, or either, are worn away, they can be easily renewed, and the body of the tappet thus preserved.

I am aware of the patent granted November 12, 1872, to B. McCauly, showing a tappet with a broad steel ring shrunk into a recess on the end of the tappet, and forming a part of its face. This device, however, provides only for the smooth and regular wear of the face of the tappet, and not for the renewal of such face when worn out, while I provide for the complete renewal of the face of the tappet as well as for its even wear.

Having thus fully described my invention, what I claim therein as new is—

The combination, with the metallic body A of a tappet, having a diminished end, of the steel ring C, projecting beyond the said small end of the tappet, and provided with the bevel *a*, and the iron plate D, having beveled edge *b*, the several parts being constructed, arranged, and secured in position substantially as described and shown.

Witness my hand and seal this 1st day of March, 1876.

JAMES BRODIE. [L. S.]

Witnesses:

C. W. M. SMITH,

OLE ANTHONY.