No. 774,398. PATENTED NOV. 8, 1904.

W. REINE.

STAMP STEM AND TAPPET ATTACHMENT.

APPLICATION FILED APR. 18, 1904.

NO MODEL.

Fig. 1.

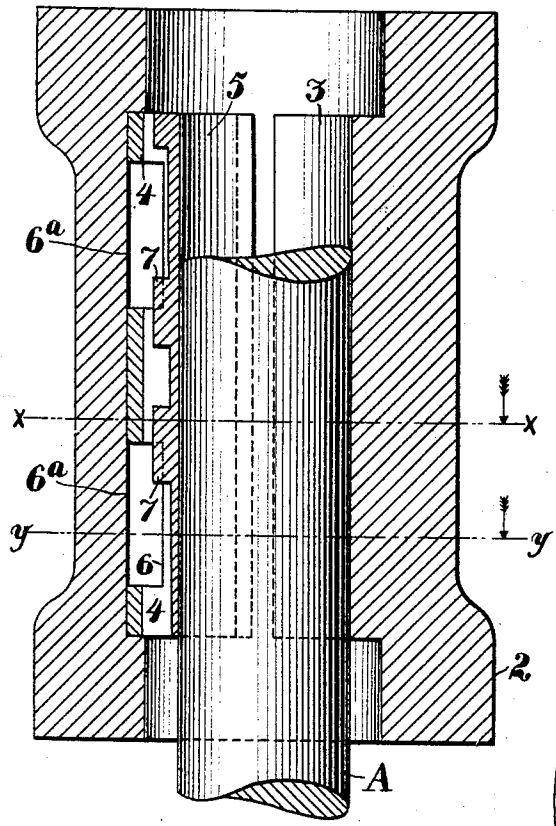


Fig. 2.

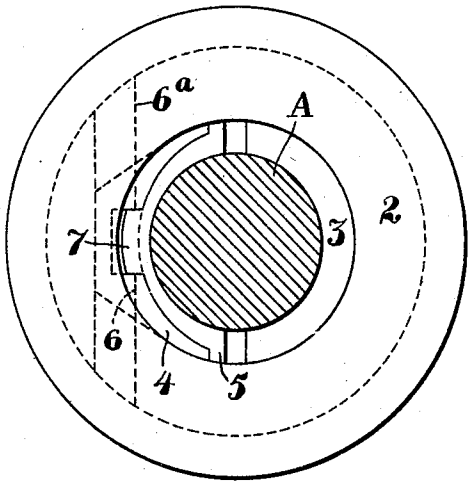


Fig. 3.

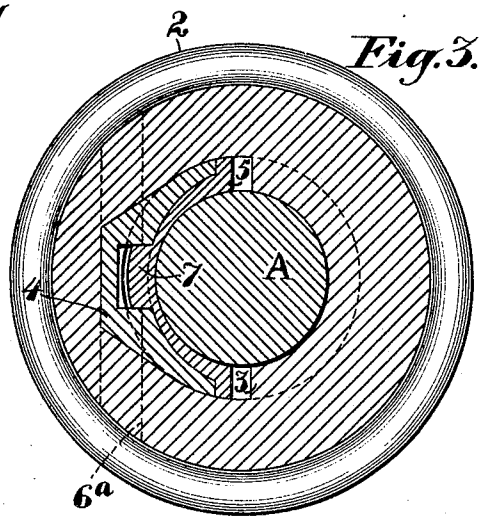


Fig. 4.

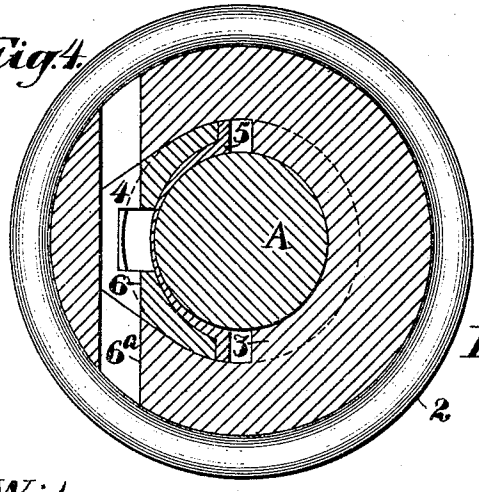
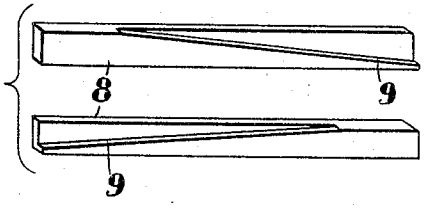


Fig. 5.



Witnesses:-
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No. 774,398. Patented November 8, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM REINE, OF QUARTZ MOUNTAIN, CALIFORNIA.

STAMP-STEM AND TAPPET ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 774,398, dated November 8, 1904.

Application filed April 18, 1904. Serial No. 203,666. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM REINE, a citizen of the United States, residing at Quartz Mountain, in the county of Tuolumne and State of California, have invented new and useful Improvements in Stamp-Stems and Tappet Attachments, of which the following is a specification.

My invention relates to an improvement in stamp-stem tappets and the means for detachably and adjustably engaging these parts.

It consists in a combination of parts and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a central vertical section of my device. Fig. 2 is a plan view of same. Fig. 3 is a section on line *x x* of Fig. 1. Fig. 4 is a section on line *y y* of Fig. 1. Fig. 5 is a perspective view of the wedges.

In securing tappets to stamp-stems which are used in crushing and other mills of this class it is difficult to fix the tappets upon the smooth cylindrical stems so firmly as to prevent their shifting, and the keys which are usually employed for this purpose soon become battered and useless on account of the severe blows that are necessary to properly drive them into locking position.

It is the object of my invention to provide a means for easily and firmly locking the tappet to the stem and at the same time providing a means whereby it is easily disengaged or adjusted when desired.

As shown in the drawings, A is a stamp-stem, and 2 is a tappet designed to fit said stem. This tappet is here shown as having a hole longitudinally through its center of larger diameter than that of the stem, and upon one side of the interior of the tappet is a segment 3, extending from near the top to near the bottom of the tappet and having its interior concaved surface adapted to fit the exterior of the stamp-stem.

4 is a shoe fitting into a chamber in the tappet which is formed opposite to the segment 3. Within this shoe is fitted another segment 5, so as to stand opposite to the fixed segment 3.

The shoe 4 and the movable segment 5 are tapered. The shoe has its greatest thickness at the bottom and its least thickness at the top, and the segment 5 is made thicker at the top and thinner at the bottom.

The operation will then be as follows: When it is desired to lock the tappet to a stamp-stem, the segmental segment 5 incloses the stamp-stem upon one side, while the shoe 3 incloses it upon the opposite side, there being sufficient space between the edges of the two to allow for as much clamping or gripping as may be necessary to properly secure the stem. The back of the segment 5 has lugs upon it, as shown at 7, and these lugs are slidable in corresponding vertical channels or grooves in the shoe 4. Transverse channels or slots 6 are made across the back of the shoe 4, and this shoe is inserted into the vertical hole in the tappet, with the segment 5 inside of it and opposite to the segment 3, as previously described. The thicker end of the shoe 4 being downward and the thicker end of the segment 5 being upward, it will be manifest that any movement which tends to drive the shoe 4 upward will bring the thicker portions of the two shoes nearer to each other, and thus force the segment 5 to grip the stamp-stem between itself and the segment 3, which is opposed to it, and as these two segments nearly inclose the entire circumference of the stem it will be seen that they have a fractional adhesion of the stem dependent upon the surface presented, the length of the segments being also a factor in the case.

In order to lock the tappet to the stem when the parts are in place, I have shown wedges or keys 8, which are tapered, as at 9, and for convenience I have shown two of these—one having the wedge on one side and the other on the opposite side—so that whatever position the stamp-stem may be in one or the other of the wedges can be used without turning the stamp around or without the operator going around to the other side.

The tappet has slots or channels made through it, as at 6^a, and these are in line with the slots 6 of the shoe 4, previously described, so that the wedges may be introduced, and when thus introduced they will engage the

lugs 7 upon the gripping-shoe 5, and by driving the wedge in from above one of the lugs 7 this segment 5 will be driven down with relation to the shoe 4, this latter being held in a chamber formed in the interior of the tappet, so that the shoe remains stationary with the tappet.

The driving down of the segment 5 wedges it against the interior of the shoe 4, and thus causes its inner face to grip the cam-shaft between itself and the opposite segment 3 sufficiently to allow the whole device to be operated by the cam upon the cam-shaft when the latter is rotated.

The weight of the stamp and its stem are much greater than the weight of a tappet, and in addition to this it will be noted that the frictional contact-surface between the interior of the shoe and the exterior of the segment is less than the frictional contact-surface of the interior of the segment 5. Therefore the lesser area of frictional surface will be inclined to slip rather than the greater area.

Because of the weight of the stamp the order of movement upward will be first the tappet and then the stamp, and when the cam strikes the tappet to raise it it is with a comparatively sharp movement, and the inertia of the stamp and its stem will tend to raise the tappet and the shoe 4, which, as previously stated, is fitted into a chamber in the tappet and must move with the latter. Any slippage will therefore take place between the shoe and the segment, and the shoe will tend to move upward, and thus bind the segment more tightly against the stamp-stem. When the tappet is released and falls, there will be a corresponding tendency of the tappet to move downward and lessen the grip upon the stem; but by reason of its lesser weight and the fact that the stamp falls upon loose soft material the downward shock will not be as great as the upward shock. Therefore the tappet will not become loosened from the stamp-stem.

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

1. A device for securing tappets to stamp-stems, said device comprising fixed and movable segments within the tappet and each embracing substantially one half of the circumference of the stamp-stem, a shoe substantially inclosing and conforming to the movable segment and fitting a chamber within the tappet and movable with relation to one of the segments, said segment and shoe being tapered in opposite directions and adapted to lock the segments upon the stamp-stem.

2. A device for securing tappets to stamp-stems, said device consisting of a shoe fitting a chamber in the tappet and increasing in thickness from the top downward, a segment conforming to substantially one half of the circumference of the stem and having its back slidable within the shoe and its inner periphery fitting the stamp-stem, said segment being tapered in the opposite direction from the shoe, and a segment conforming substantially to the remaining circumference of the stem fixed within the tappet and opposite to said movable segment.

3. A device for securing tappets upon stamp-stems, said device consisting of a fixed and an opposed movable segment within the tappet having interior peripheries corresponding in shape to the exterior of the stamp-stem and fitted thereto, and each embracing substantially one half the circumference thereof, a shoe conforming substantially to the circumference of the movable segment and in which the movable segment is fitted, a chamber in the tappet within which the shoe is retained, said shoe and segment being tapered in opposite directions and so that the upward movement of the tappet, or a downward movement of the segment will lock the latter to the stem.

4. A device for securing tappets to stamp-stems, said device consisting of a tappet having a segment upon one side with its interior fitting and embracing substantially one half of the circumference of the stamp-stem, a chamber upon the opposite side, a shoe fitting said chamber and increasing in thickness from the top downward, a segment fitting the shoe decreasing in thickness from the top downward having its interior fitted to the stamp-stem, its inner face conforming substantially to one half the circumference of the stem, and means whereby the segment and shoe are moved to wedge the segment against the stamp-stem.

5. A device for securing tappets to stamp-stems, said device comprising a hollow tappet having a segment upon one side fitting the periphery of the stamp-stem and embracing substantially one half thereof, a similar segment upon the opposite side of the stem, said second segment embracing substantially the remaining half of the periphery of the stem and being made thicker at the top than the bottom, and having lugs upon the back, a chamber in the tappet and a shoe fitting the chamber, within which shoe the movable segment is fitted, key-slots made transversely through the tappet, corresponding channels in the shoe and wedge-shaped keys adapted to enter the channels and engage the lugs upon the movable segment whereby the latter may be moved up or down to lock against, or release it from the stamp-stem.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM REINE.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.