

UNITED STATES PATENT OFFICE.

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STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 775,151, dated November 15, 1904.

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To all whom it may concern:

Be it known that I, BENJAMIN T. SCOTT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Stamp-Mills, of which the following is a specification.

My invention relates to means to drive the stamps by which the ore is crushed; and the object thereof is to provide means to operate the stamps with less power and greater efficiency than with the ordinary cam and tappet. I accomplish this object by the mechanism described herein and illustrated in the accompanying drawing, which is a side elevation of so much of the stamp-driving mechanism as illustrates my invention, parts being broken away.

In the drawing, A is the stem of the stamp A', which stamp is of ordinary construction and need not be further described. To the stem is rigidly secured collars B and B'. Above and below these collars are the sliding collars C and C'. These sliding collars are connected by links D and D' with levers E and E', which levers are pivotally connected at F and F' with the frame G. To the lever E, intermediate its ends, are pivotally secured rods H and I, which pass through holes in the frame and have secured upon their outer ends springs J and K, the tension of which may be regulated by nuts L and M on the respective ends thereof. The ends of these springs bear, respectively, upon the frame and the nuts. Intermediate the ends of lever E' are pivotally secured rods N and O, which pass through holes in the frame and have secured upon their outer ends springs P and R, the tension of which may be regulated by nuts S and T on the respective ends thereof. The ends of these springs bear, respectively, upon the frame and the nuts. Near the center of the frame is pivotally secured thereto the pitman-rod U, the other end of which is secured to the eccentric-strap V, which passes around eccentric W, rigidly mounted on shaft X, to which shaft power is applied to rotate the eccentric. Frame G is slidably mounted upon the stamp-stem A.

In the operation of my device power is ap-

plied to rotate the driving-shaft, thereby through connecting mechanism operating to raise and lower the stamp. It will be observed that as the frame G rises the first shock or strain thereon will be received by the springs K and P, which will gradually compress until their compression exceeds the weight of the stamp and other parts connected thereto, when the stamp will be raised upwardly. When the eccentric has reached its full upward throw and starts on its downward motion, the springs K and P will expand and force the stamp to go still higher until their expansive force is neutralized by the springs J and R and the weight of the stamp and connected parts. The momentum of the stamp and connected parts and the force of springs K and P will cause the compression of springs J and P, and when the stamp strikes the ore in the mortar (not shown) it will strike it with a blow equal in power to the weight of the stamp and connected mechanism increased by the expansive thrust of the springs J and R. If desired, the sliding collar C' could be placed on the stem just above the rigid collar B and the collar B' omitted; but I prefer their use as shown, as the sliding collar above the frame assists in steadying the stamp-stem. The frame G may be reciprocated by means other than the eccentric W. If desired, springs K and P and rods I and N could be omitted; but in that case the expansive thrust of these springs on the downward movement of the stamp would be lost, and for that reason I prefer their use.

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

1. In a stamp-mill the combination of a stamp having a stem, collars rigidly secured to said stamp-stem, sliding collars on said stamp-stem one above and the other below the rigid collars; a frame slidably mounted on said stem intermediate said rigid collars; levers pivotally secured to said frame and extending inwardly toward said stem; links pivotally connecting the inner ends of said levers with the sliding collars on said stems; rods pivotally connected to said levers intermediate the ends thereof and projecting through said frame

both above and below the same; nuts on the ends of said rods; springs on said rods, the outer ends of which bear against the nuts and the inner ends against said frame; means to
5 reciprocate said frame.

2. In a stamp-mill means to operate the stamps comprising two collars rigidly secured to the stem of the stamp; a sliding collar on said stem above said rigid collars and another
10 sliding collar on said stem below said rigid collars; a frame slidably mounted on said stem intermediate said rigid collars; levers secured pivotally to said frame at the outer edges thereof; links secured to the inner ends of
15 said levers and to said sliding collars; rods pivotally secured to said levers intermediate their ends and projecting above and below said frame; nuts on the outer ends of said rods; springs on said rods intermediate the nuts and
20 the frame; a pitman pivotally connected to said frame; an eccentric-strap secured to said pitman; an eccentric within said strap; a driving-shaft rigidly secured to said eccentric.

3. In a stamp-mill the combination of a
25 stamp having a stem; a frame slidably mounted thereon; a rigid collar secured to said stem below said frame, sliding collars on said stem one above and the other below said rigid collar; levers pivotally connected to said frame;
30 links pivotally connected to said lever and to

said sliding collars; springs operatively connected to said levers to hold the free ends thereof normally parallel with the sides of the frame; means to cause the reciprocation of
said frame.

4. In a stamp-mill means to operate the stamps comprising two collars rigidly secured to the stem of the stamp; a sliding collar on said stem above said rigid collars and another
40 sliding collar on said stem below said rigid collars; a frame slidably mounted on said stem intermediate said rigid collars; levers pivotally secured to said frame at the outer edges thereof; links secured to the inner ends of said
45 levers and to said sliding collars, one lever being connected to the sliding collar above and the other to the sliding collar below the rigid collars; rods pivotally secured to said
50 levers intermediate their ends, one projecting above and the other below said frame; nuts on the outer ends of said rods; springs on said rods intermediate the nuts and the frame; means to reciprocate said frame.

In witness that I claim the foregoing I have hereunto subscribed my name this 4th day of
December, 1903.

BEN. T. SCOTT.

Witnesses:

G. E. HARPHAM,

MARGARETE C. NICKELESON.