

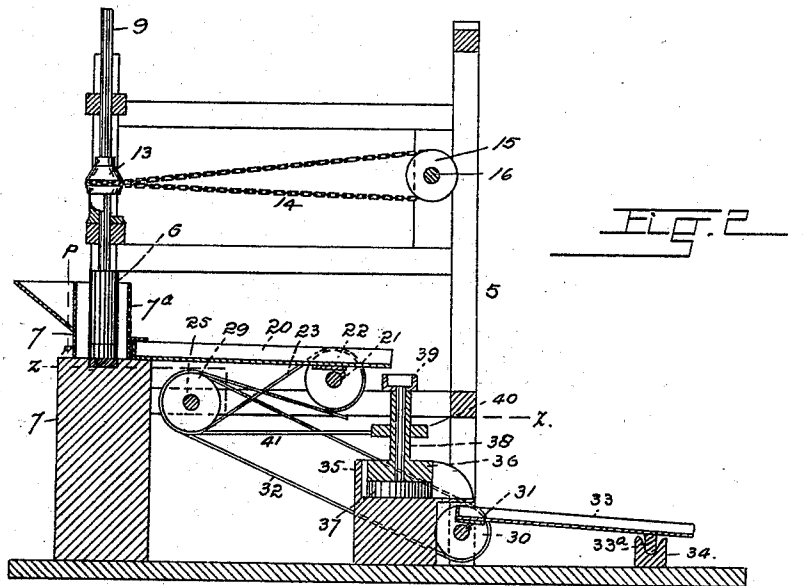
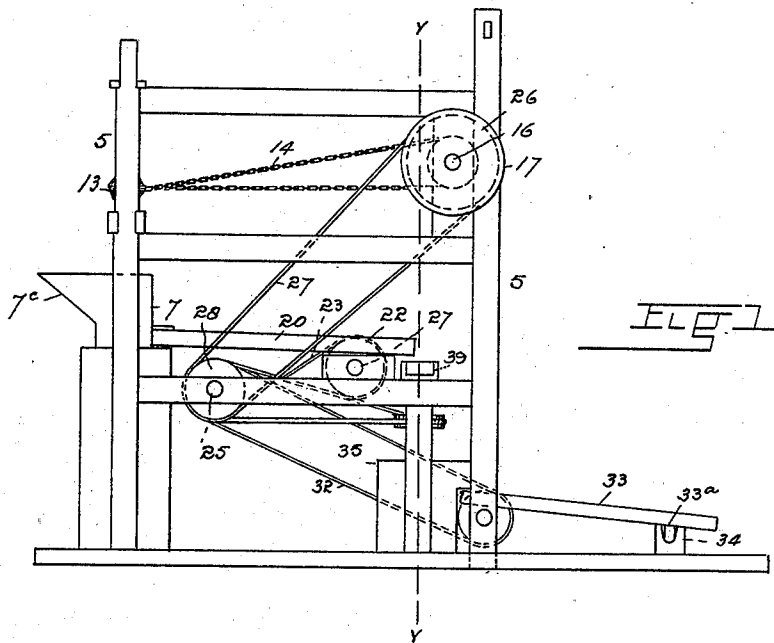
(No Model.)

2 Sheets—Sheet 1.

U. LAVOIE.
STAMP MILL.

No. 560,805.

Patented May 26, 1896.



WITNESSES:

WITNESSES:
J. J. Dolandet.
 Chas. E. Dawson

INVENTOR

Urbain Lavoie.

BY

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 ATTORNEY

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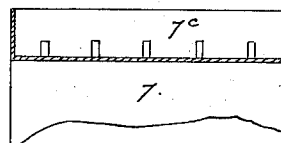
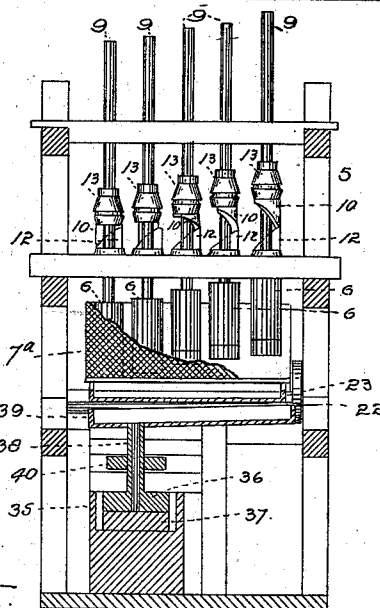
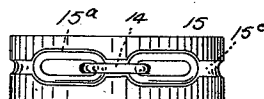
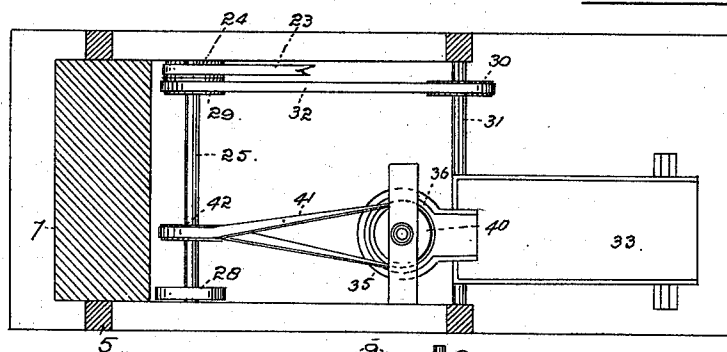
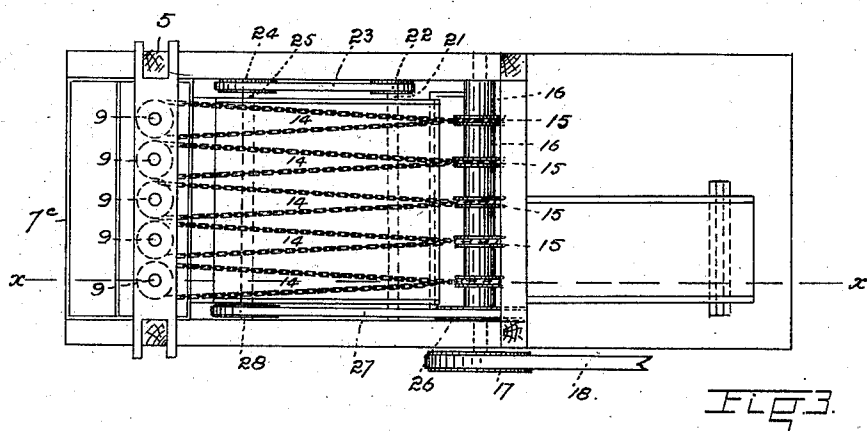
(No Model.)

2 Sheets—Sheet 2.

U. LA VOIE.
STAMP MILL.

No. 560,805.

Patented May 26, 1896.



WITNESSES:

G. J. Dollan
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INVENTOR

Urbain Lavoie

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UNITED STATES PATENT OFFICE.

URBAIN LAVOIE, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO
AUGUSTE D'ENTRESSANGLE, OF SAME PLACE.

STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 560,805, dated May 26, 1896.

Application filed March 11, 1895. Serial No. 541,367. (No model.)

To all whom it may concern:

Be it known that I, URBAIN LAVOIE, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Stamp-Mills; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in stamp-mills; and it consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a vertical section taken on the line *xx*, Fig. 3. Fig. 3 is a top or plan view of the machine. Fig. 4 is a section taken on the line *zz*, Fig. 2. Fig. 5 is a section taken on the line *yy*, Fig. 1, looking toward the left. Fig. 6 is a top view of one of the chain-wheels, showing several links in position. Fig. 7 is a section taken on the line *pp*, Fig. 2, looking toward the right.

Similar reference-characters indicate corresponding parts in the views.

Let the numeral 5 designate a suitable framework, upon which are mounted the stamps 6, adapted to engage the dies 7 of the mortar-box 8. The stem 9 of each stamp is provided with an inclined cam 10, adapted to engage an oppositely-disposed inclined cam 12, supported on the framework. Made fast to each stamp-stem is a collar 13, fashioned to receive a chain 14, engaging a pulley 15, made fast on the power-shaft 16, journaled in the framework. The periphery of each pulley 15 is grooved to receive the links of the chain, and the shape of the groove is such that the chain cannot slip upon the pulley. As shown in the drawings, (see Fig. 6,) the groove in the face of the pulley is made up of a series of recesses 15^a and 15^b, alternately arranged. The recesses 15^a are adapted to engage the flat side of the links, while the recesses 15^b

are fashioned to receive the edges of the links. The grooves in the chain-collars 13 are of corresponding shape, whereby a positive rotary movement is imparted to the stamps as the shaft 16 is operated.

The vertical movement is imparted to the stamps through the instrumentality of the oppositely-disposed inclined cams 10 and 12, attached to the stamp-stems and the framework, respectively. During each complete revolution of the shaft 16 the stamp is raised and released, and, since its rotation is continuous, the stamp makes a partial rotation while engaging the material in the mortar-box, thus greatly increasing the efficiency of the stamp's action, since the material in the mortar-box is ground between the stamp and the die.

One extremity of the shaft 16 is provided with a fast pulley 17, which may be connected with any suitable prime motor through the agency of a belt 18.

The pulverized ore, as it passes through the screen 7^a of the mortar-box, falls upon a movable amalgamating-table 20, which is agitated by a shaft 21, located beneath the table and carrying a cam engaging the bottom thereof. The shaft 21 is provided with a pulley 22, which is connected by means of a belt 23 with a pulley 24 on a shaft 25, journaled in the framework. This last-named shaft is operated from the shaft 16, which is provided with a pulley 26, connected by means of a belt 27 with a pulley 28 on the shaft 25. The shaft 25 is provided with a pulley 29, connected with a pulley 30 by a belt 32.

The pulley 30 is fast on a shaft 31, journaled in the lower part of the framework and provided with a cam adapted to engage the bottom of a movable amalgamating-table 33. One extremity of this table rests upon the shaft, while the other extremity is provided with a depending projection 33^a, engaging a suitable stationary socket attached to the base of the framework. In front of the table 33, and located above the same, is an auxiliary mortar 35, in which is located a rotatable shoe 36, engaging a die 37. This shoe is provided with a hollow stem 38, whose opening coincides with an aperture in the center of the shoe. The upper extremity of this stem

communicates with a trough 39, which receives the discharge from the table 20.

The stem 38 of the rotatable shoe is provided with a fast pulley 40, which is connected by means of a belt 41 with a pulley 42 on the shaft 25. A rotary movement is thus imparted to the shoe, which further comminutes the pulverized material passing from the table 20 to the auxiliary mortar via the trough 39 and the hollow stamp-stem.

From the foregoing description it will be understood that when the shaft 16 is operated motion is communicated to all the movable parts of the machine. The material to be treated is fed to a hopper 7^c, connected with the mortar-box 7 and communicating therewith by means of suitable apertures. After being pulverized by the stamps to a suitable degree the material passes in the form of pulp through the screen 7^a to the amalgamating-table 20, whose function is to catch the free gold released from the ore through the process of pulverization. From the table 20 the pulp passes to the trough 39, and thence through the hollow stem 38 and the shoe 36 to the auxiliary mortar-box 35, where it is further pulverized or comminuted by the action of the rotary shoe 36. The pulp finally passes to the amalgamating-table 33, whose function is to catch the free mineral which escaped the table 20.

Having thus described my invention, what I claim is—

In a stamp-mill, the combination with suitable mortars, of a number of stamps having their stems provided with inclined cams, the framework provided with oppositely-disposed inclined cams adapted to engage the cams on

the stamp-stems, means for imparting a rotary movement to the stamps, comprising a shaft having vertical pulleys, horizontal collars on the stamp-stems, chains connecting the pulleys and collars, both of which are recessed to receive the chain-links, both flat and edgewise, whereby a positive movement is imparted to the stamps, a movable amalgamating-table 20 adapted to receive the pulverized material from the stamp-mortars, a shaft 21 journaled in the frame and carrying a cam engaging the bottom of the table, a pulley fast on the shaft 21, a shaft 25 carrying a pulley, a belt connecting the pulleys on the shafts 21 and 25, another belt connecting pulleys fast on shafts 16 and 25, respectively, a movable amalgamating-table 33, a cam-shaft 31 engaging the bottom of the table 33 and carrying a pulley, a belt connecting the pulley on shaft 31 with the pulley on the shaft 25, an auxiliary mortar 35 located intermediate the two amalgamating-tables 20 and 33, said mortar receiving the material from the table 20 and discharging it upon the table 33, a rotatable shoe located in the auxiliary mortar and provided with a hollow stem through which the material passes to the mortar, a horizontal pulley fast on the stem of said shoe, and a belt connecting the pulley on the stem with the pulley on the shaft 25, as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

URBAIN LAVOIE.

Witnesses:

CHAS. E. DAWSON,
A. D'ENTRESSANGLE.