

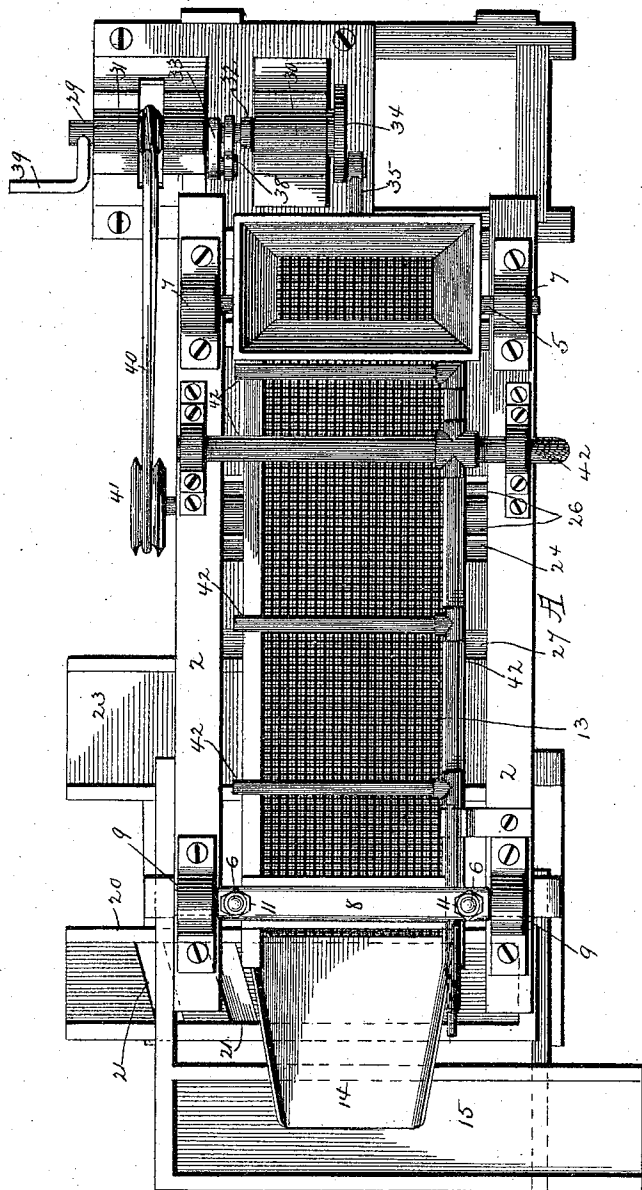
(No Model.)

3 Sheets—Sheet 1.

C. J. SCHMITT & J. A. HANSEN.
GOLD WASHER.

No. 574,951.

Patented Jan. 12, 1897.



Witnesses
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G. F. Downing.

Inventors
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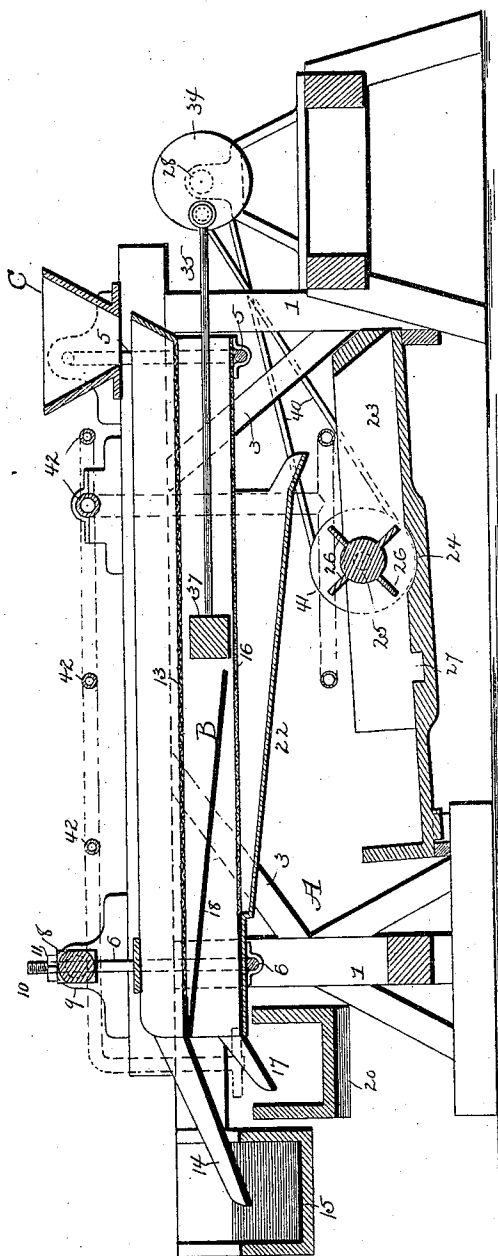
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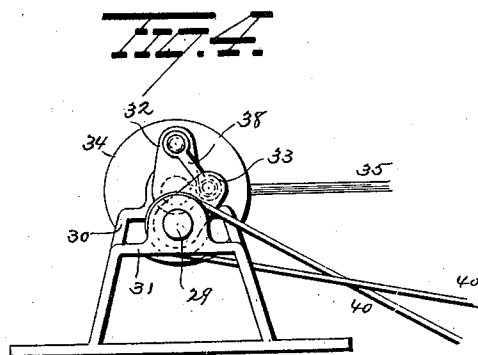
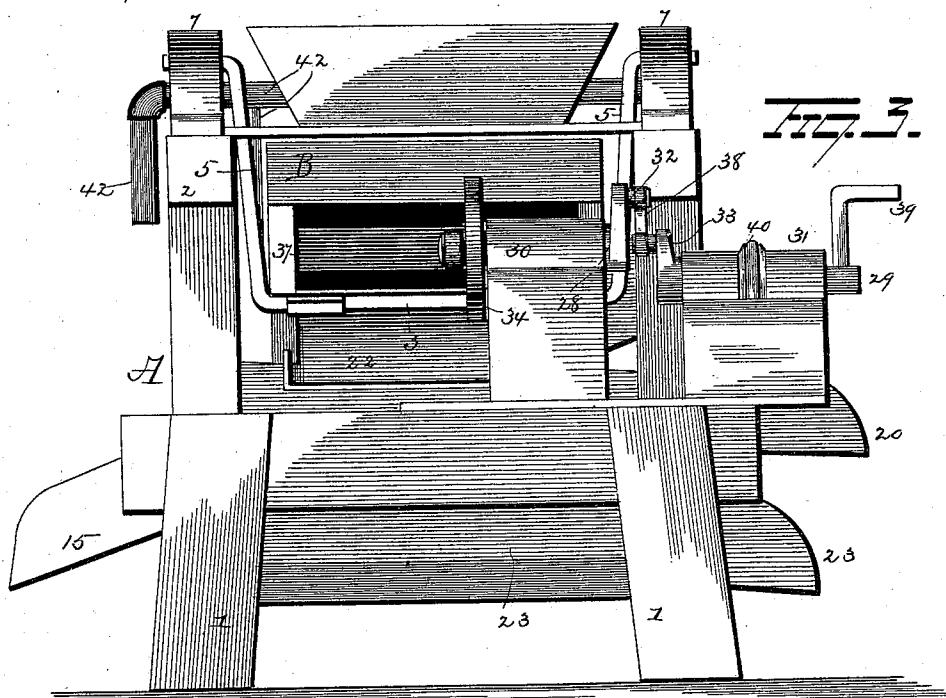
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UNITED STATES PATENT OFFICE.

CHARLES J. SCHMITT AND JOHN A. HANSEN, OF ANACONDA, MONTANA.

GOLD-WASHER.

SPECIFICATION forming part of Letters Patent No. 574,951, dated January 12, 1897.

Application filed June 22, 1895. Serial No. 553,727. (No model.)

To all whom it may concern:

Be it known that we, CHARLES J. SCHMITT and JOHN A. HANSEN, of Anaconda, in the county of Deer Lodge and State of Montana, have invented certain new and useful Improvements in Gold-Washers; and we do hereby 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.

Our invention relates to an improvement in gold-washers, the object being to provide means for saving the fine particles of gold which would otherwise be wasted; and it consists in certain novel features of construction and combinations of parts which will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a view in central vertical section. Fig. 3 is an end elevation, and Fig. 4 is a detail.

A represents the frame of the machine, it comprising suitable legs 1 1, longitudinal beams 2 2, and braces 3 3. A box B is supported in this frame in any convenient manner, as, for instance, by hangers 5 and 6. These hangers extend beneath the box and are hinged thereto. One of the hangers, 5, is mounted at its ends in bearings 7 7 on the frame, and the ends of the other hanger, 6, extend through a transverse shaft 8, the ends of which are mounted in bearings 9 9. These ends of hanger 6 are screw-threaded, as at 10 10, and nuts 11 11 are provided for raising and lowering the hanger, whereby to raise and lower the rear end of the box B, as occasion may demand. In this box B two or more screens or sieves are secured. The upper screen or sieve 13 is preferably of about No. 3 mesh wire, and it extends from one end of the box to the other, a spout 14 being located at the rear end thereof for discharging the dirt which is too coarse to drop through the screen into a suitable trough 15, which leads to the tailing-dump. Below this screen or sieve is a still finer one, 16, of, say, No. 8 mesh, also extending the length of the box B and leading in like manner to a spout 17, beneath spout 14, at the rear end of the machine. An inclining false bottom 18 is located between the two screens or sieves and

extends from the rear end to about the center of the machine, it being adapted to convey the material dropping through the upper screen 13, at or near the rear end thereof, to the forward end of the lower screen 16, so that it will traverse at least a half the length of the latter instead of a portion of it passing almost directly off, as would be the case if this false bottom were not employed. Beneath the spout 17 a launder 20 is placed. This launder is preferably lined with copper plate amalgamated with mercury. It also has one or more grooves 21 21, in which mercury is placed to catch any gold-dust falling thereinto.

Directly under screen 16 is an inclining bottom 22, which extends from the rear nearly to the front of the machine, it being adapted to catch and conduct forward the finely-screened material. This material falls into a box 23 below. The bottom of this box 23 is preferably lined with copper plate covered with mercury, and a groove 24, formed therein, is sufficiently large to allow a roller 25, having blades 26 26 thereon, to rotate, the object of this rotary fan being to force the gold-dust into the mercury. From this point the residue of material which is not held by the mercury passes over a number of grooves 27 27, filled with mercury.

The box B must be vibrated and the roller 25 rotated slowly. This is accomplished by the following mechanism: A pair of rotary shafts 28 and 29 are revolvably supported in pillow-blocks 30 and 31, respectively, at the forward end of the machine. These shafts are out of alinement with each other, preferably, but their inner ends are in proximity to each other, they being provided with cranks 32 and 33, respectively, and a link 38 connects their wrist-pins. The other end of shaft 28 is provided with a crank-disk 34, and a pitman 35 extends from the wrist 36 on this disk to the box B, to which it is connected by means of the cross-head 37, pivoted to the box. The outer end of the other shaft, 29, is provided with a handle or pulley 39, by which the apparatus is operated. From this shaft 29 a crossed belt 40 extends to a pulley 41 on the roller-shaft 25, whereby to drive the latter slowly.

Water-pipes 42 42 are located over the top

screen at proper intervals, and also over box 23 at the bottom, their outlets always being forward and the force of water being sufficient to separate the dirt and refuse from the gold-dust.

5 The operation is as follows: The material is placed in hopper C. The handle or pulley 39 is turned, and the water is turned on. In the turning of the handle 39 it will be seen
10 that the end of the crank on the other end of the shaft 29 is constantly approaching and receding from the axis of shaft 28, and as it approaches said axis the motion of shaft 28 is comparatively slow, and consequently the
15 movement of the box B is correspondingly slow. This takes place while the pitman is passing its dead-center; but as soon as it has passed this dead-center the end of the crank on shaft 29 recedes from the axis of shaft 28,
20 thus increasing the leverage and speed, so that with every revolution of the shafts a short quick jerk is given to the box B, which causes the coarser material to be carried to the rear end of the machine and the fine to
25 be effectually sifted through and carried by inclining bottom 22 to the upper end of box 23, and from here the residue of material which is not held by the grooves 24 and 27 27
30 It is evident that slight changes might be

resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of our invention, and hence we do not wish to limit ourselves to the exact construction herein set forth; but, 35

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination with a frame, of a box suspended therein and carrying screens and false bottoms, a box into which one of the false bottoms discharges, a roller operating in this box, and a compound shaft comprising two parts located end to end and having a crank-and-link connection with each other, 45 a pitman extending from one section to the box having the screens for reciprocating it, and a belt extending from the other section to the roller whereby the latter has a steady rotary motion imparted to it while the former 50 has an irregular motion communicated to it, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

CHARLES J. SCHMITT.
JOHN A. HANSEN.

Witnesses:

JOHN G. MORSE,
L. E. BEAUDRY.