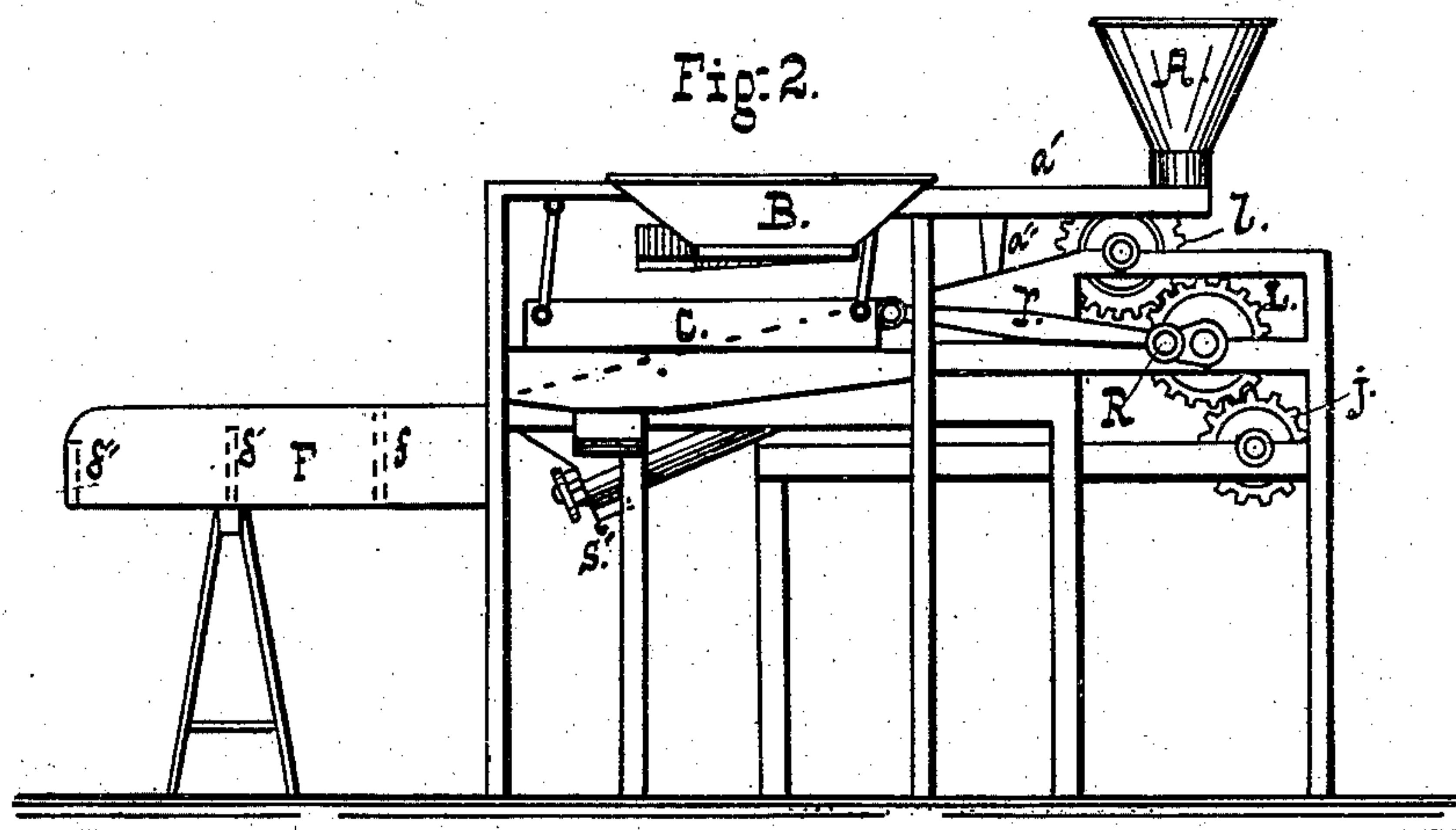
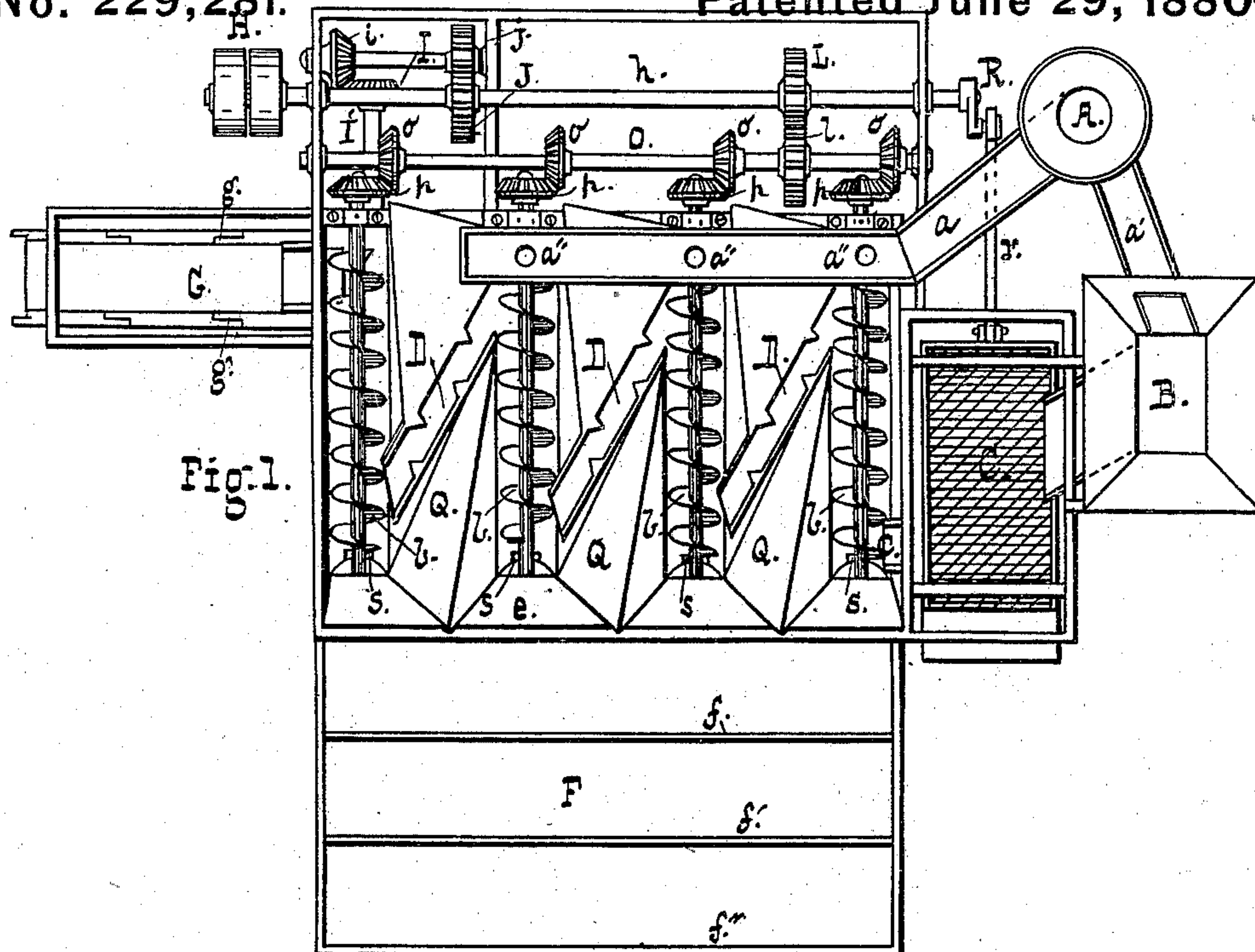


(No Model.)

S. P. SPEERS.  
Ore Washer.

No. 229,281.

Patented June 29, 1880.



Witnesses,

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by

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# UNITED STATES PATENT OFFICE.

SOLOMON P. SPEERS, OF BALTIMORE COUNTY, MARYLAND.

## ORE-WASHER.

SPECIFICATION forming part of Letters Patent No. 229,281, dated June 29, 1880.

Application filed May 6, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, SOLOMON P. SPEERS, of Baltimore county, State of Maryland, have invented certain new and useful Improvements in Ore Washers or Separators; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

10 Figure 1 is a plan view of the device, and Fig. 2 is a side elevation of the same.

My invention has reference to devices for separating gold from auriferous gravel or ore; and it consists in a device to accomplish that end, consisting in certain mechanism for conveying the gravel or ore up a series of inclined troughs while subjecting it to the action of a current of water, combined with a series of settling vessels or chambers to receive the float-gold or 20 lighter flakes of metal, the whole constructed and operating as hereinafter set forth.

In the accompanying drawings, A is a funnel, into which a stream of water is conducted and from which lead pipes *a a'*, as shown.

25 The pipe *a'* delivers its portion of the current on a screen, C, which is caused to reciprocate by means of the rod *r* and crank R on the main driving-shaft *h*, on which is mounted the usual fast and loose pulley H, to receive the 30 belt.

The shaft *h* carries a wheel, L, that gears with a second wheel, *l*, on the shaft O. On the latter are mounted a number of bevel-gears, *o o*, which communicate motion to the series of gears *p p*, that are mounted on the shafts of the screw-conveyers *b b*. These latter occupy an inclined position in the main trough of the machine.

40 D D D are a series of troughs having cleats on their interior, so as to force the current therein to take a zigzag course, and leading from the upper end of one conveyer to the bottom of the next one.

45 Q Q are tapering V-shaped partitions between the troughs.

The pipe leading from the funnel A has a series of pipes, *a''*, for delivering a portion of the current into each of the conveyer-troughs, from which latter the water overflows into the 50 subsiding-tank F, in which are a number of partitions, *f f' f''*, of unequal heights.

At the bottom of each conveyer-trough is a pocket, S, which may be opened by means of a slide, S', on the under side of the machine.

55 From the final conveyer of the series the

sand or refuse is delivered upon a belt, G, having cleats at its sides, provided with overlapping ends, as shown. This belt is driven by means of a pulley on the shaft I, which receives its motion through the medium of the 60 gear-wheels I i J j, as shown.

The operation of the device is as follows: The gravel or ore is delivered into the hopper B and falls upon the screen C. Here the coarser portions that fail to pass through the 65 screen are rejected and pass off onto a table, where the coarse gold or nuggets are extracted. The portion which passes the screen falls through the spout *c* into the first conveyer-trough, and is carried by the conveyer 70 upward against the stream of water that is delivered from the pipes *a a''* until it reaches the top of the conveyer-trough. It then descends through the trough D to the bottom of the next conveyer of the series, and so on 75 until the sand or refuse from which the gold has been extracted is delivered on the belt G. The heavier particles of gold collect at the bottom of the conveyer-troughs, and are removed from the pockets by opening the slides 80 S'. The lighter particles are carried over by the overflow into the tank F, and subside in its various compartments, according to their weight, the gold being subsequently reclaimed from the earthy matters by amalgamation. 85

The V-shaped partitions Q subserve an important end, in that as the area embraced between them increases toward the top the effect of the upward current is diminished near the surface, and its power to carry over the 90 light particles of gold with the refuse matter is proportionately diminished.

What I claim is—

1. The combination, with the reciprocating screen C, funnel A, and pipes *a a''*, of the inclined conveyers *b*, troughs D, and V-shaped partitions Q, as set forth. 95

2. The combination, with the conveyers *b* and intermediate V-shaped partitions Q, of the subsiding-tank F, having a series of partitions, *f f' f''*, as described. 100

3. The combination, with the conveyer-troughs and conveyers, of the pockets S at the lower ends of the troughs, and intermediate V-shaped partitions, and the slides S', as 105 set forth.

SOLOMON P. SPEERS.

Witnesses:

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