

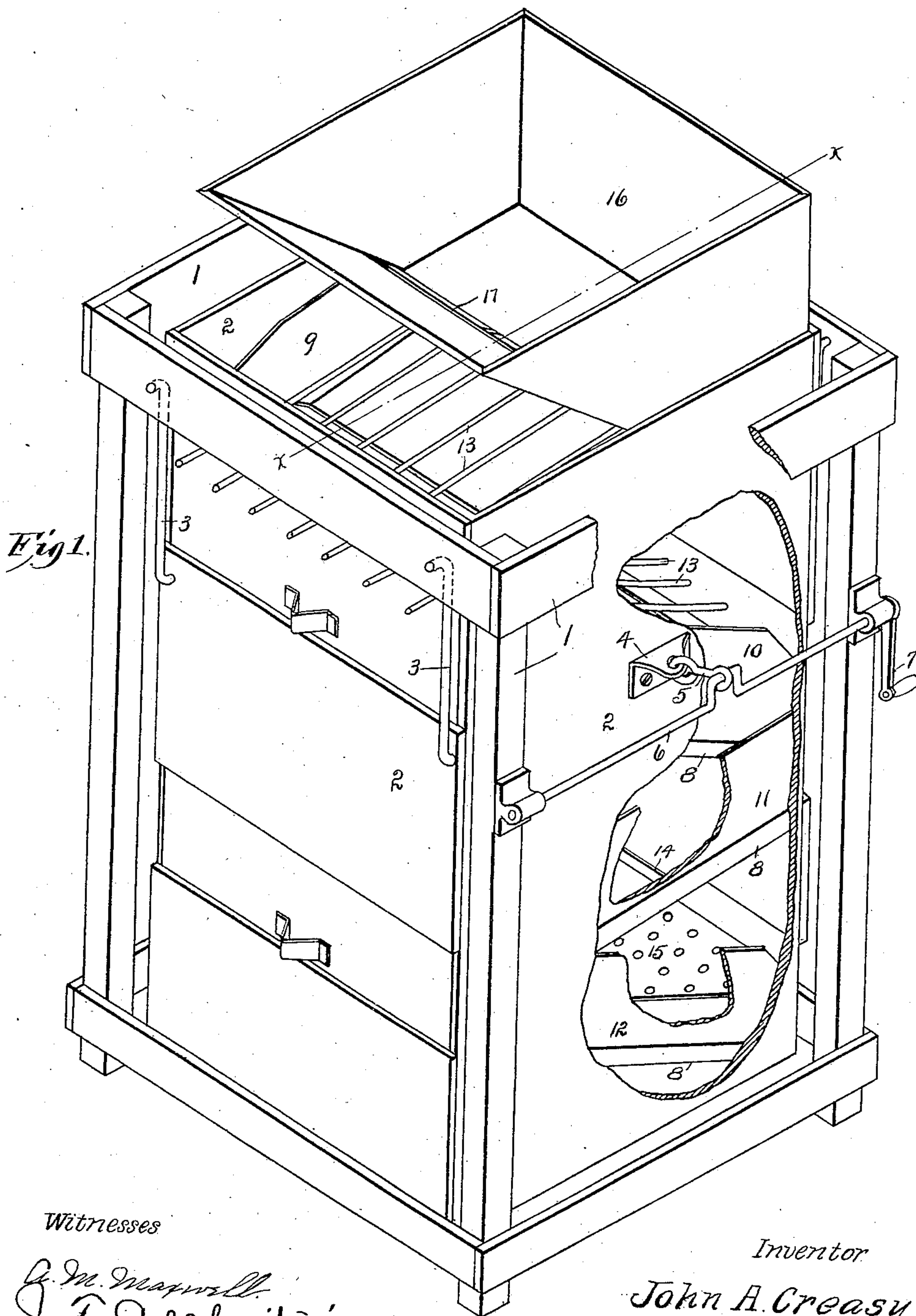
No. 883,861.

J. A. CREASY.
APPARATUS FOR SEPARATING GOLD.

PATENTED APR. 7, 1908.

APPLICATION FILED FEB. 4, 1907.

2 SHEETS—SHEET 1.



Witnesses

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J. F. Albritain

Inventor

John A. Creasy

By

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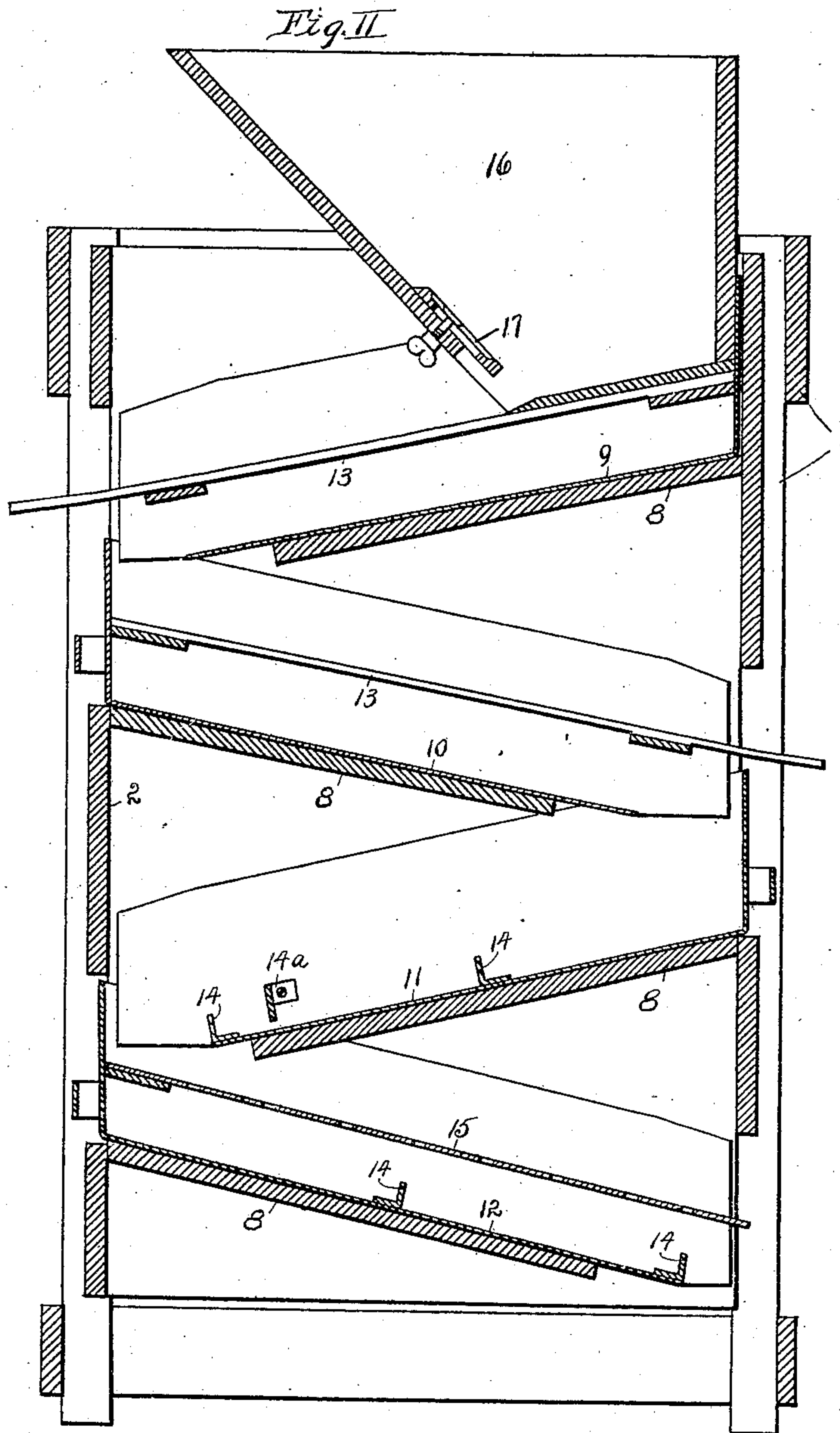
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UNITED STATES PATENT OFFICE.

JOHN A. CREASY, OF NORBORNE, MISSOURI.

APPARATUS FOR SEPARATING GOLD.

No. 883,861.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed February 4, 1907. Serial No. 355,536.

To all whom it may concern:

Be it known that I, JOHN A. CREASY, a citizen of the United States, residing at Norborne, in the county of Carroll and State of Missouri, have invented certain new and useful Improvements in Apparatus for Separating Gold; 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 letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in apparatus for separating gold, having more particular reference to improvements in apparatus for what is known as dry washing in placer mining in situations where water is not conveniently accessible for washing of the gold bearing sand; and my invention consists in certain features of novelty hereinafter described and pointed out in the claims.

Figure I represents a perspective view of an apparatus provided with my improvements. Fig. II represents a sectional view on the plane $x-x$ of Fig. I.

Similar numerals refer to similar parts throughout the several views.

1 represents the frame of the apparatus.

2 represents a casing suspended within said frame by means of the links 3, said links engaging the frame at or near the top, and engaging the casing near the medial line between the medial line and the top of the casing.

4 represents a lug secured upon the casing which is connected by the link 5 with the crank shaft 6 journaled upon the frame and provided with the handle 7 or other means of operating the same. Said lug 4 is secured upon the casing substantially in the plane of the point of attachment of the links 3. By turning the crank shaft 6 a vibratory motion upon the links 3 is given to the casing. Now it is apparent that the longer the links 3 and the lower down upon the casing they are connected therewith, the more nearly in a horizontal plane will be the plane of vibration of the casing. But it is also apparent that if the casing be hung upon the links upon or below its medial line the tendency would be to render the casing unstable upon its hanging, which instability would increase as the point of attachment advanced below the medial line. It will also be observed that a

stable and steady vibratory motion of the casing would be seriously interfered with if the point of attachment of the lug 4 is moved either below or above the plane of the attachment of the links 3 thereon; whence it appears that the attachment of the links 3 near but above the medial line of the casing and the attachment of the operating lug and link upon the plane of the point of attachment of the links 3 upon the casing is the arrangement which will produce vibrations of the casing most nearly in a horizontal plane consistently with the greatest stability. The importance of such arrangement and of such approach to a horizontal plane of vibration will appear. Within the casing 2 upon the shelves 8 are arranged the alternately inclined pans 9, 10, 11 and 12, the plane of inclination of said pans being across the plane of vibration of the casing. Said pans are removable from the casing, sliding in and out upon the shelves. The upper two pans, 9 and 10, are each provided with a series of longitudinally extending fingers 13, for the separation of roots, large stones and like matter from the gold bearing sand as it is fed into the machine. The lower pans, 11 and 12 are each provided with the vertical strips or riffle-bars 14, and the pan 11 with the inverted riffle-bar 14^a, extending across the same. The bottom pan 12 is provided with a perforated sheet 15, extending over the same.

16 represents a hopper from which the material is fed upon the top pan, the feed being regulated by the sliding gate 17.

In operation the gold bearing material is fed upon the uppermost pan from the hopper, and thence passes successively over the other pans, the roots, stones and coarse material being removed by the finger screens 13. As the material passes along over the pans subject to the agitation caused by the vibration of the casing upon its hangers, the gold being heavier than the sand with which it is mingled will gravitate toward the bottom of the passing stream of sand and will be caught behind the riffle-bars 14, the larger part of the gold being stopped behind the riffle-bars of the pan 11. The inverted riffle-bar 14^a extending below the horizontal plane of the riffle-bar 14 in advance of it, the sand in passing down the pan will first bank up against such advance riffle-bar extending back on the pan upon the plane of the top of said bar. Then as the operation proceeds and the sand

begins to run over the riffle-bar 14, as the on-coming sand advances down the pan it must pass under the inverted riffle-bar 14^a, and the gold in the sand being thus carried below the
 5 flow of the sand over the riffle-bar in advance, will, on account of its weight, not again rise to the surface to be carried over, but will become lodged behind said advance riffle-bar. Then as the sand passes over the perforated
 10 sheet or screen 15 of the bottom pan, the coarser sand will be separated and carried away, while the finer sand and finer particles of placer gold which may reach this pan will pass through, and there will be but a small
 15 amount of fine sand from which to separate the lighter and finer particles of gold, and if any gold is carried over the last riffle-bar of the pan 12 it will be mixed with but a small amount of very fine sand, from which it may
 20 be separated by any of the usual processes.

For the most effective separation of the gold from the sand as it passes over the pans, the sand must be made to pass over the pans in a uniform thin sheet, that the gold may
 25 have the best opportunity to sink through the sand as it travels forward subject to the agitation of the casing in its vibrations. That the uniformity of this sheet of sand in passing over the bottom of the pan may be main-
 30 tained in the greatest possible degree the vibration of the casing must be as nearly as possible in a horizontal plane, otherwise with the rocking or swinging of the pan the material will be thrown and banked up
 35 against the sides of the pan while for a considerable distance on either side of the center of the pan the stream will be very thin, if any at all. Furthermore the gold being the heavier will be more strongly acted upon by
 40 such swing and will be constantly thrown to the top of the passing stream along the sides of the pan and will pass over the riffle-bars and escape, and this tendency and effect will be increased the further the vibration or swing
 45 of the casing departs from the horizontal plane. But as noted above in the construction and arrangement of my improved ap-

paratus, the swing and vibration of the casing being the most nearly in a horizontal plane consistent with the stability of the
 50 casing, the most effective separation of the gold from the sand will be obtained. And this has been demonstrated to be so, very little if any gold passing over the last riffle-bar of the pan 11. When the riffle-bars be-
 55 come filled with gold the pans may be removed and the small amount of sand blown out, so that it is not necessary to subject it to any further treatment to separate the gold.

Having thus fully described my improve-
 60 ments, what I claim as my invention, and desire to secure by Letters Patent, is,—

1. In an apparatus for separating gold, the combination with a suitable frame of a casing suspended from and within said frame and
 65 provided with pan openings at the front and back, means in said casing for supporting pans, and pans adapted to seat on said supports and for insertion into and removal from
 70 said casing through said openings, the bottom edges of each of the upper pans being projected partially within the pan next there below substantially as set forth.

2. In an apparatus for separating gold, the combination with a suitable frame, of a cas-
 75 ing arranged to reciprocate in said frame in substantially a horizontal plane and provided at opposite sides with horizontal pan openings, means in said casing for supporting
 80 pans, pans adapted to seat on said supports and for insertion into and removal from said casings through said openings, fingers extending longitudinally over one or more of the top pans, riffle plates extending horizon-
 85 tally across the bottom of the lower pans, and a screen supported in the bottom pan above the riffle bars therein, substantially and for the purpose set forth.

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

JOHN A. CREASY.

Witnesses:

THOS. C. BROWN,
 JAS. H. BOOKER.