

No. 804,408.

PATENTED NOV. 14, 1905.

F. M. JOHNSON.  
GOLD SEPARATOR.

APPLICATION FILED MAR. 25, 1902.

Fig. 1.

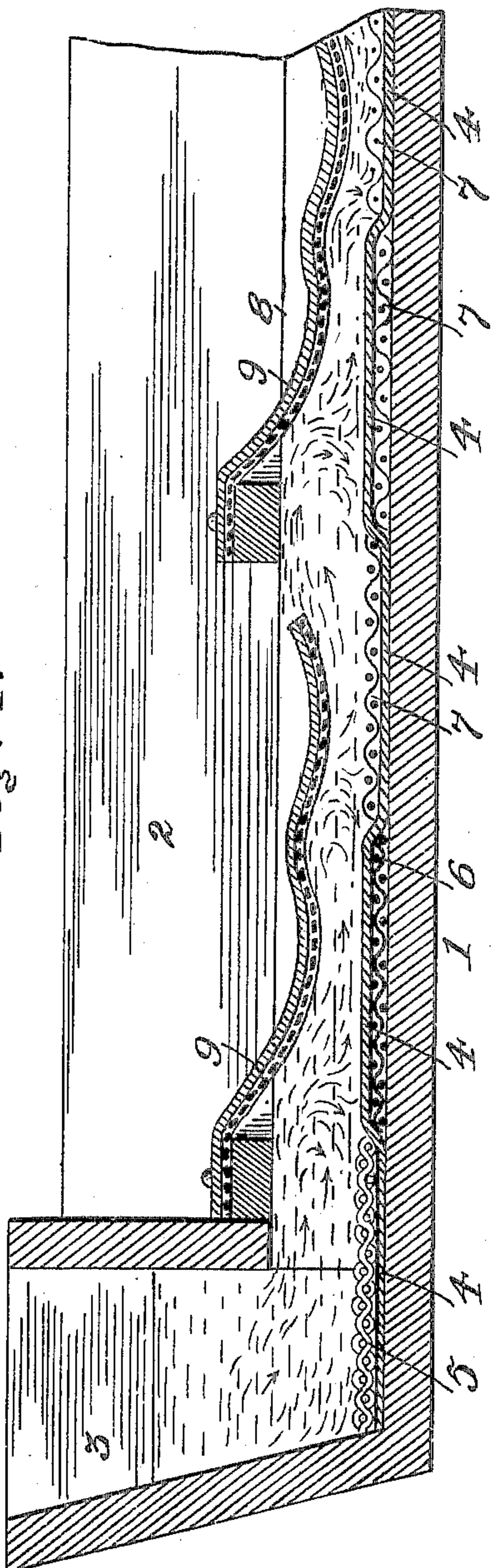
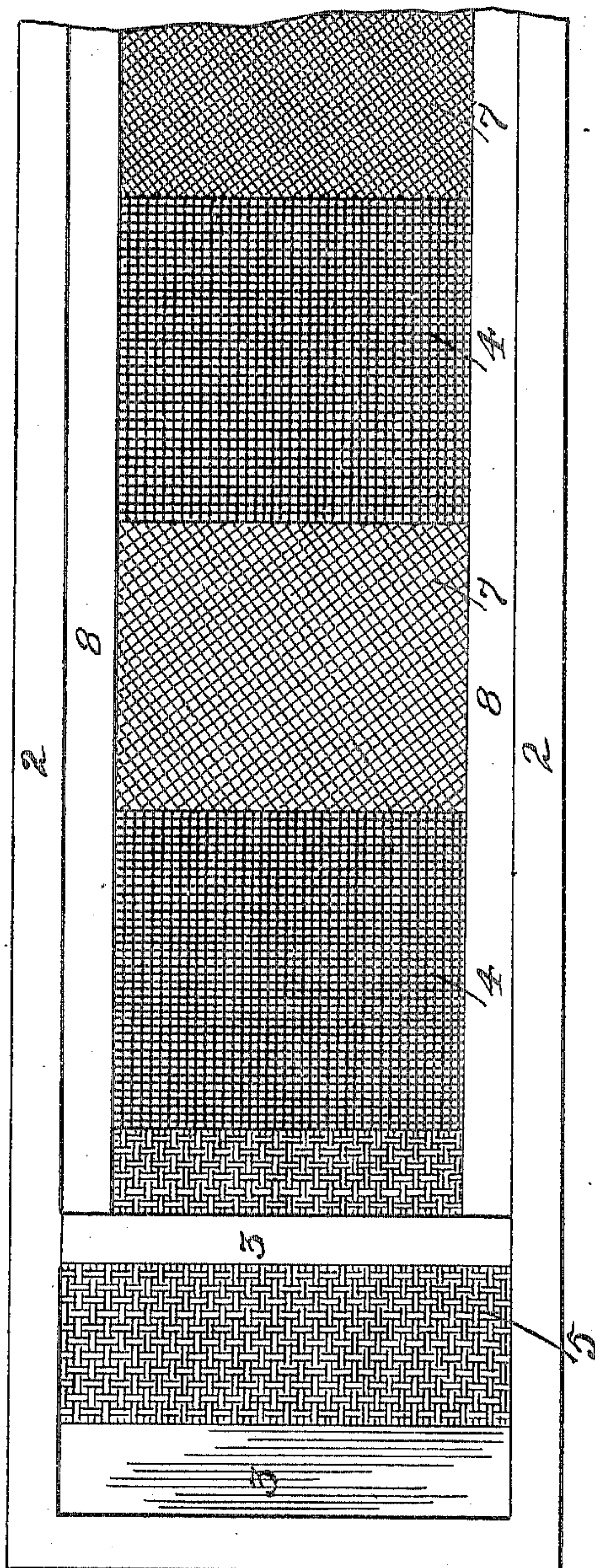


Fig. 2.



WITNESSES:

Léon Boillot  
F. W. Burt.

INVENTOR:

Frederick M. Johnson  
by Spas & Co. Attorneys



# UNITED STATES PATENT OFFICE.

FREDERICK M. JOHNSON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO  
ROSE GOLD RECLAMATION COMPANY, OF SAN FRANCISCO, CALIFOR-  
NIA, A CORPORATION OF ARIZONA TERRITORY.

## GOLD-SEPARATOR.

No. 804,408.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed March 25, 1902. Serial No. 99,909.

*To all whom it may concern:*

Be it known that I, FREDERICK M. JOHNSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Gold-Separators, of which the following is a specification.

My invention relates to gold-saving devices, and particularly to improvements upon the sluice-box described in my application for patent, Serial No. 61,433, filed May 22, 1901. In that case a sluice-box is shown whose bottom has a retaining-surface composed of overlapping strips of burlap or other suitable material. The box is also provided with flexible floating aprons above the bottom composed of some similar or suitable material, the current carrying the gold-bearing sand or the crushed or pulverized ore being compelled to pass between the two and being attenuated or confined so that the heavier and precious particles are caught and held.

The present invention relates to the bottom covering of the sluice and to a construction which affords a more effective retaining device than that illustrated in the application referred to. Such construction is used in combination with the flexible floating aprons shown in the said application. I have found in practice that by using such flexible floating aprons in connection with a bottom covering composed of fibrous or textile material and of wire screen in intimate contact better results are produced, and I attribute this to the resistance or opposition to the flow and to the multitude of small eddies and whirls caused by the interstices of the screens.

The preferred construction is shown in the accompanying drawings, in which—

Figure 1 is a longitudinal section of part of sluice-box. Fig. 2 is a plan of its bottom.

The sluice-box is ordinarily formed of wood with a bottom piece 1 and side pieces 2. At one end is a hopper 3, which receives the pulp, sand, pulverized ore, or other material mingled with water. Upon the bottom of the sluice is a retaining-surface composed of textile or fibrous material and of wire screens in intimate contact. I have obtained good results in practice by overlaying a layer of burlap with a succession of screens placed end to end and covering the burlap; but I prefer the

construction shown in the drawings. The textile or fibrous material 4 may be burlap, blanket, or any other suitable material, and at the head end of the sluice is laid directly upon the wooden bottom between the side pieces of the box. Upon this is placed a section of coarse-wire screen 5. I have used quarter-inch mesh with good results. The burlap is brought out from under the screen and then overlies another section 6 of screen of somewhat closer mesh, as shown, the ends of the screens coming together. The burlap is then covered with a third screen-section 7 of still closer mesh, and the arrangement continues to the end of the sluice, presenting alternating surfaces of burlap and wire. The screens 7 and those succeeding it need not differ in texture. The burlap covering may be a continuous strip, and this is what I prefer to use. It is, however, perfectly practicable to use as many lengths of burlap as desired, since the whole retaining device is firmly clamped and held in close contact by the longitudinal cleats 8, removably secured to the box. Above this bottom are supported flexible floating aprons 9, substantially as shown and described in the application referred to and having, preferably, the waterproof upper surface or covering described therein.

In the operation of the separator the current or flow of material received at the hopper is compelled to pass between the bottom and the aprons and is thus confined and attenuated. The heavy and precious particles, whose gravity tends to deposit them, are forced down toward the bottom and caught. The interruption to the current caused by the screen-meshes and aided by the downward pressure creates a multitude of eddies and whirls, which retard the precious particles and give them a better opportunity to deposit themselves. By placing part of the screen beneath the burlap the latter is held slightly above the bottom. Fine gold which might pass through the textile material is therefore again retarded by the screen beneath, and as the burlap is forced down by the weight of the current and the pressure of the aprons into its interstices a contact between such fine material and the burlap is assured.

This peculiar alternating arrangement of

surfaces has been found exceedingly effective in practice.

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

In a gold-separator, a box or sluice having a retaining-bottom composed of fibrous or textile material, in combination with wire screens; arranged one above the other and in contact,  
10 and forming two continuous layers, the upper

layer being, alternately, such wire screen and such fibrous or textile material.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 13th day of March, 1902.

FREDERICK M. JOHNSON.

Witnesses:

L. W. SEELY,  
F. M. BURT.