No. 676,427. Patented June 18, 1901.

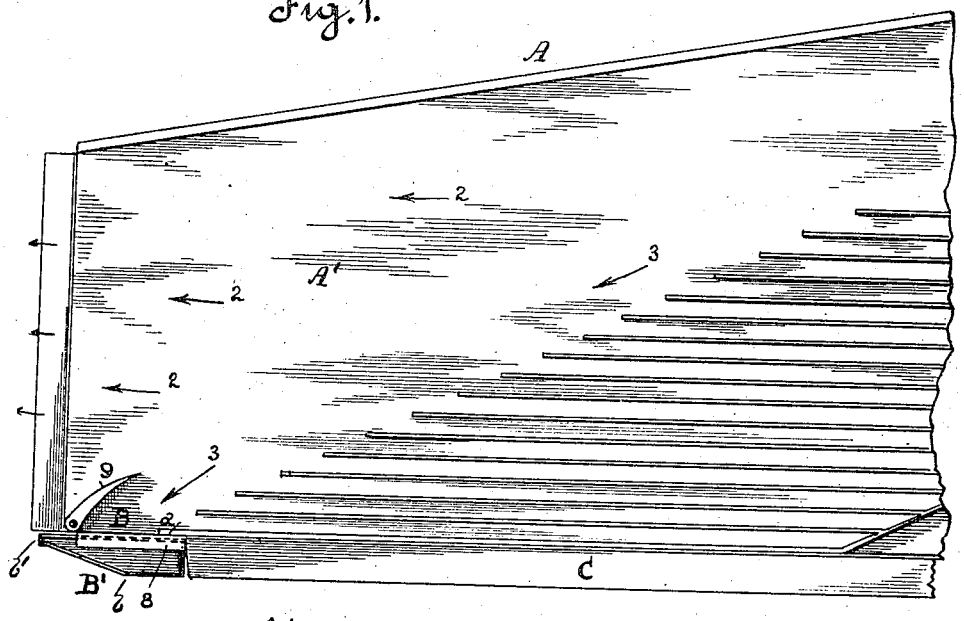
W. G. DODD.

ATTACHMENT FOR CONCENTRATING TABLES.

(Application filed Aug. 30, 1900.)

(No Model.)

Fig. 1.



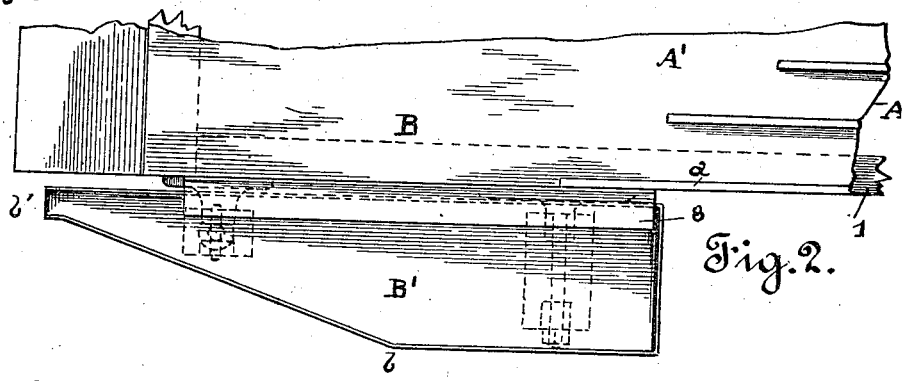
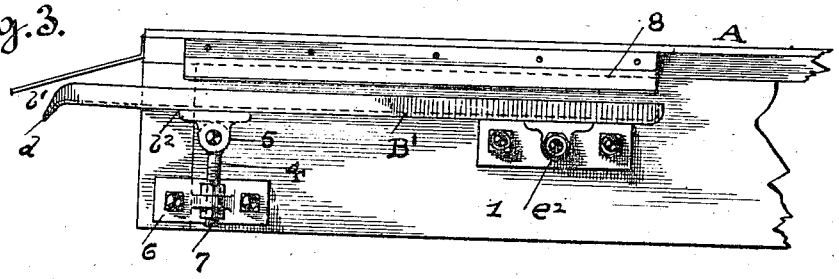


Fig. 2.

Fig. 3.



Witnesses.

F. E. Montevercle.

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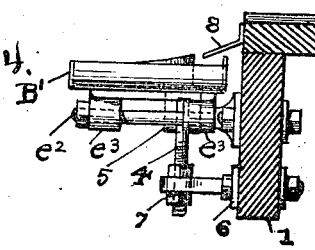
Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIS G. DODD, OF SAN FRANCISCO, CALIFORNIA.

ATTACHMENT FOR CONCENTRATING-TABLES.

SPECIFICATION forming part of Letters Patent No. 676,427, dated June 18, 1901.

Application filed August 30, 1900. Serial No. 28,492. (No model.)

To all whom it may concern:

Be it known that I, WILLIS G. DODD, a citizen of the United States, residing in the city and county of San Francisco, in the State of California, have invented certain new and useful Improvements in Attachments for Concentrating-Tables; and I do hereby declare the following to be a full, clear, and exact description of the same.

Practical working of this class of machinery has proven that a certain proportion of the gold or valuable particles is carried off with what is known as "middlings," and is thus lost or remains unseparated unless reconveyed to the concentrating-table to be reworked. This is especially true in connection with the working of the ore by the use of what is known as the "transverse riffled reciprocating table," or such as have a plain or unriffled zone of flow at the extremity of the riffled surface of the table. With this class of tables the main separation takes place within the riffles of the table, while final separation of the valuable particles is made upon the plain or unriffled portion of the table during the travel of the concentrates toward the discharge end thereof. While passing over this portion of the table the concentrates are subject to the action of clear water in order to wash the same and separate the sand or base or worthless portions therefrom. This current or flow of water is sufficient to carry the extreme fine float-gold with the sand. This mixture of the sand and fine gold is termed "middlings." It is the recovery of fine gold from this class of material to which the present invention relates.

The object of the invention is to provide a simple and inexpensive attachment for the table, by means of which the middlings discharged may be reworked by the action of the table proper, the attachment being so arranged that it may be adjusted to meet the requirements of the material to be worked.

In order to comprehend the invention, reference should be had to the accompanying sheet of drawings.

Figure 1 is a top plan view of a concentrating-table, partly broken away, with the attachment applied thereto. Fig. 2 is an enlarged detail view of the attachment illustrated in Fig. 1. Fig. 3 is a side view in elevation of the mechanism disclosed by Fig. 2 of the drawings, and Fig. 4 is an end view in elevation of the attachment viewed from the feed end of the table.

In the drawings the letter A is used to indicate an ordinary riffled concentrating-table having a plain or unriffled portion A'. This unriffled portion constitutes the zone of flow of the material discharged from the riffled portion A^2 of the table. To the side of the table, at the discharge-end portion B for the middlings, is secured the attachment B'. This attachment has the action of a miner's "horn" and for such reason shall hereinafter be termed a "horn attachment." Said horn attachment extends from approximately the extremity of the lowermost riffle *a* to the discharge end of the table. Any suitable shape may be given thereto; but I prefer to gradually incline the outer wall or side thereof from approximately point *b* toward its discharge end *b'*. The bottom of the horn is also slightly upwardly inclined from b^2 toward its discharge end *b'*, which discharge end preferably terminates in a downwardly curved or inclined lip *d*, Fig. 3. By thus constructing the side wall and inclining the bottom of the horn the material or middlings discharged therein may be worked to much better advantage, as greater resistance is offered to its outflow.

The forward end of the horn B' is pivotally secured or fulcrumed to the bottom edge 1 of the table by bolt e^2, which passes through eye-rings e^3, attached to the bottom of the horn. The discharge-end portion of the horn is supported by the adjustable bolt 4, which is fulcrumed between ears 5, depending from the horn, Figs. 3 and 4. This screw-bolt passes through plate 6, attached to bottom edge 1 of the table, and it is raised or lowered by adjusting-nuts 7. These supporting features of the discharge end of the horn may be said to constitute an adjustable support or hanger, by means of which the inclination of the horn may be varied, so as to regulate or adjust the horizontal of the horn in accordance with the requirements of the material to be treated.

Any suitable style of mechanism may be employed for uniting the horn to the table and providing for such adjustment as may be required. I have shown and described the

simplest form of means for such purpose; but, as stated, these may be varied as desired or practical working prove expedient.

The body of the tailings flows over the riffles onto the launder C, from which it is discharged in any suitable manner.

The travel of the concentrates is represented by arrows 2, while the flow or path of the middlings is indicated by arrows 3. Heretofore it has been customary to rework the middlings upon the table, an elevator being employed for the purpose of reconveying the same thereto.

To the edge 1 of the table is attached plate or apron 8, which serves to convey the middlings discharged from the zone of flow into the horn B. This plate is utilized by reason of the fact that the horn is located a slight distance below the surface of the concentrating-table.

There is hinged or fulcrumed to the face of the concentrating-table, near the lower discharge corner of the zone of flow, the deflecting finger or plate 9. This plate is so regulated as to deflect onto the plate 8 such of the middlings as have a tendency to pass over the discharge end of the table at this point due to the impelling force of the table.

Such material as discharges into the horn B′ is subjected to a horning action due to the reciprocating motion of the table. During the movement of the horn the heavier or precious particles contained in the middlings, owing to their specific gravity, settle to the bottom of the horn and gradually work upward therein until finally discharged from end *b′* thereof, the worthless portion of the middlings being gradually worked over the opposite end thereof.

If the material to be collected from the middlings is heavy, then the inclination of the horn may be slight, while if the recovered material proves to be exceedingly light, then the inclination of the horn is so adjusted as to confine the material for a longer time therein.

Having thus described the invention, what I claim as new, and desire to secure protection in by Letters Patent, is—

1. The combination with a reciprocating concentrating-table, of a horn attachment secured thereto and carried thereby so as to receive and work the middlings discharged therefrom, said attachment extending from approximately the discharge end of the lowermost riffle of the table to the discharge end of said table, the discharge end of the horn attachment being contracted.

2. The combination with a reciprocating concentrating-table, of a horn attachment secured thereto and carried thereby so as to receive and work the middlings discharged therefrom, said attachment extending from approximately the discharge end of the lowermost riffle of the table to the discharge end of said table, the discharge end of the horn attachment being upwardly inclined, and a deflecting finger or plate secured to the surface of the table for deflecting the middlings into the horn attachment.

3. The combination with a reciprocating concentrating-table, of a horn attachment secured thereto so as to receive and work the middlings discharged therefrom, and a plate or apron for conveying the middlings into the horn attachment.

4. The combination with a reciprocating concentrating-table, of a horn attachment secured thereto so as to receive and work the middlings discharged therefrom, an apron or plate for conveying the middlings into the horn attachment, and a deflecting finger or plate for guiding the said material onto said plate or apron.

5. The combination with a reciprocating concentrating-table, of a horn attachment adjustably secured thereto so as to receive and work the middlings discharged therefrom.

6. The combination with a reciprocating concentrating-table, of a horn attachment fulcrumed thereto which receives and works the middlings discharged therefrom, and means for adjusting the inclination of the horn attachments.

In witness whereof I have hereunto set my hand.

WILLIS G. DODD.

Witnesses:
N. A. ACKER,
WALTER F. VANE.