No. 665,620. Patented Jan. 8, 1901.

W. STEPHENS & J. P. MUNGER.

AUTOMATIC TAILINGS SAMPLER.

(Application filed Aug. 6, 1900.)

(No Model.)

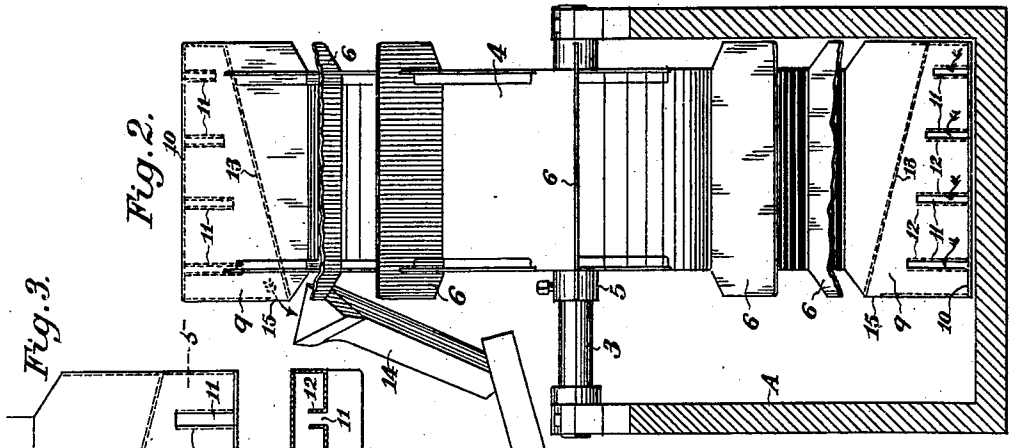


Fig. 2.

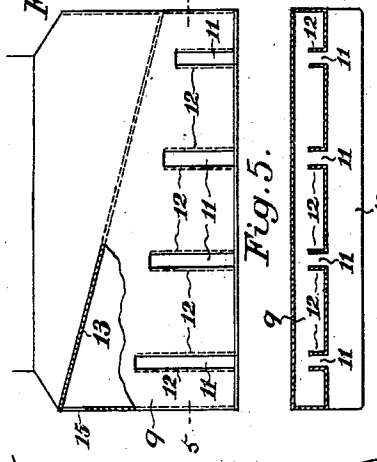


Fig. 3.

Fig. 5.

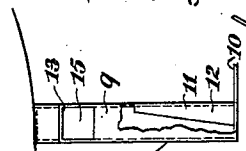


Fig. 4.

Fig. 1.

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UNITED STATES PATENT OFFICE.

WILLIAM STEPHENS, OF REDDING, AND JAMES P. MUNGER, OF JAMESTOWN, CALIFORNIA.

AUTOMATIC TAILINGS-SAMPLER.

SPECIFICATION forming part of Letters Patent No. 665,620, dated January 8, 1901.

Application filed August 6, 1900. Serial No. 26,043. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM STEPHENS, residing at Redding, county of Shasta, and JAMES P. MUNGER, residing at Jamestown, county of Tuolumne, State of California, citizens of the United States, have invented an Improvement in Automatic Tailings-Samplers; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an apparatus which is designed for collecting samples of tailings or other material flowing through a sluice and to deliver them into a receptacle, where they may be tested to see whether the tailings are carrying off any unusual amount of valuable matter or for other purposes.

The invention includes the parts and the constructions and the combinations of parts which I shall hereinafter describe and claim.

Figure 1 shows a longitudinal section of the sluice and a side view of the drum partially broken away. Fig. 2 shows a cross-section of the sluice and an edge view of the drum. Fig. 3 is an enlarged detail of one of the paddles or floats. Fig. 4 is an end view of Fig. 3. Fig. 5 is a horizontal sectional view on the line 5 5 of Fig. 3.

A is a sluice, of any suitable description, through which tailings or pulp which is discharged after the final process for saving the valuable material contained therein has been completed or through which pulp may flow under any other conditions. The bottom of this sluice is curved, as shown at 2, the curvature having a radius from the shaft or axle 3 of the drum 4. This drum may be made of sheet metal and is essentially tight, having a sleeve 5 extending through its center, and through this sleeve the shaft or axle 3 passes and is supported in suitable boxes or bearings carried upon or by the edges of the sluice or other fixed support.

Around the exterior of the drum are floats or paddles 6, which dipping into the current passing through the sluice are impelled thereby, so as to rotate the drums. These paddles approximately follow the curvature of the bottom of the sluice where they pass through it.

In order to regulate the speed of rotation of the drum, the interior is provided with floats or paddles 7, projecting from the rim radially toward the shaft, and by means of a screw-plug or other controlled opening at 8 any amount of water or pulp may be admitted to the interior of the drum, and as the latter rotates the interior paddles lift this water or pulp, which thus acts as a counterweight and resists the tendency of the wheel to rotate too rapidly. The regulation is accomplished by the amount of water or pulp which is admitted into the interior of the drum.

In order to automatically secure samples of the passing tailings, we form one or more sectional receiving paddles or floats 9. These floats, which are hollow, are substituted at such points as desired around the wheel for the ordinary floats by which the wheel is propelled. The floats have at the outer end rigid plates 10, projecting toward the approaching current, and the plate causes a certain amount of the pulp and water to flow up against the side of the hollow paddle which is presented toward the current. Through this float or paddle are made slots or openings, as at 11, and the pulp will flow into these openings to the interior of the float. The edges of each of these openings are turned inwardly, forming ribs, as at 12, which hold the pulp within the float until the latter has reached the point of discharge. Diagonally across the interior of the float from one edge to the other is an inclined partition 13, which when the float dips into the pulp is above the openings through which the pulp enters the float; but when the float has reached the upper part of its travel, near the top of the wheel, this incline forms the bottom of the chamber in the float, and the pulp which has been carried up to this point in the float then runs out over this inclined bottom and is discharged at one side. The pulp thus discharged is received into a chute at 14, and this chute conveys the pulp to any suitable receptacle, where the samples can be collected and tested from time to time.

It will be manifest that any number of the collecting-floats may be disposed around the wheel and that these floats or collectors may be constructed in any suitable manner, so that a portion of the passing pulp can enter each float or collector as it dips into the stream,

and the portion thus collected may be carried up to a point of discharge.

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

1. A device for collecting samples from a flowing current, consisting of a wheel having paddles dipping into the current, and collectors carried by the wheel intermediate of the paddles and adapted to receive a portion of the passing material and separate it from the main body, said collectors being hollow and having slots or openings to their interior and having at their outer ends plates projecting toward the approaching current and adapted to direct portions of the pulp to said slots or openings.

2. A device for collecting samples from a flowing stream consisting of a journaled wheel or drum having floats upon the periphery dipping into the stream, hollow collecting-floats carried upon the periphery, said collecting-floats being arranged between the first-named floats and also dipping periodically into the stream, and having slots or inlets with flanged edges for admitting a portion of the passing material to the interior of the float and retaining it there, while the float passes around to the top of the wheel, means for discharging the collected material from the float, and a receiver into which it is delivered.

3. Means for collecting samples from a flowing stream consisting of a sluice having a curved bottom, a journaled revoluble wheel having floats which dip into the stream, one or more collecting devices carried upon the periphery of the wheel having a pulp-passage longitudinally through them with inlets leading transversely through their front faces through which a portion of the flowing material is received whenever the collector dips into the stream, and by which it is carried to the upper part of the wheel, means for delivering the collected material into a receptacle, a means for regulating the rate of rotation of the wheel, consisting of floats interior to the drum against which pulp or water contained within the drum acts as a resistant to its rapid rotation.

4. A device for collecting samples from a flowing stream consisting of a journaled drum having floats upon the periphery dipping into the current, and interior radial floats, and means for admitting water or pulp into the interior whereby it acts against the interior floats as a resistant to the rotation of the wheel, hollow collectors carried upon the periphery of the wheel or drum and located between the first-named floats, having slots and directing-plates through which the flowing pulp passes to the interior of the floats, inturned edges by which the collected material is retained, a diagonally-inclined plate extending from one edge to the other interior to the float and forming a discharge-chute when the float reaches the upper part of its travel and a receiving-chute and collecting vessel into which the material is periodically delivered.

In witness whereof we hereunto set our hands.

WILLIAM STEPHENS.
JAMES P. MUNGER.

Witnesses to Stephens:
JAMES E. ISAACS,
W. D. TILLOTSON.
Witnesses to Munger:
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