

W. HOOPER.

# REVOLVING BUDDLE FOR SEPARATING ORES, &c.

No. 184,622.

Patented Nov. 21, 1876.

Fig. 1.

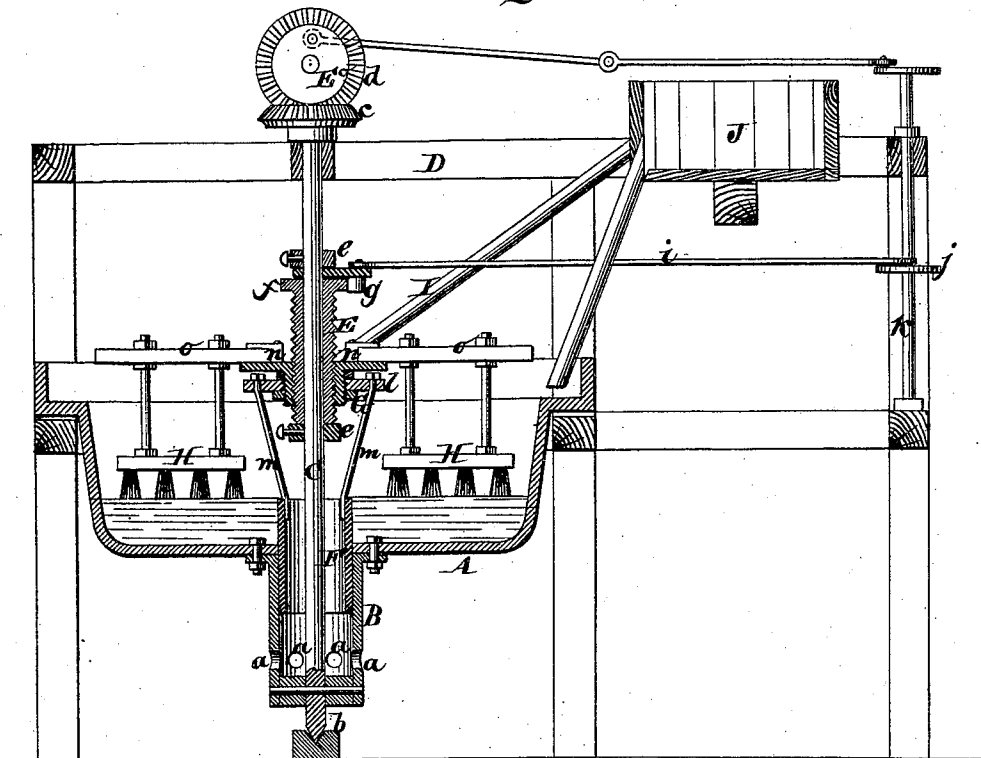
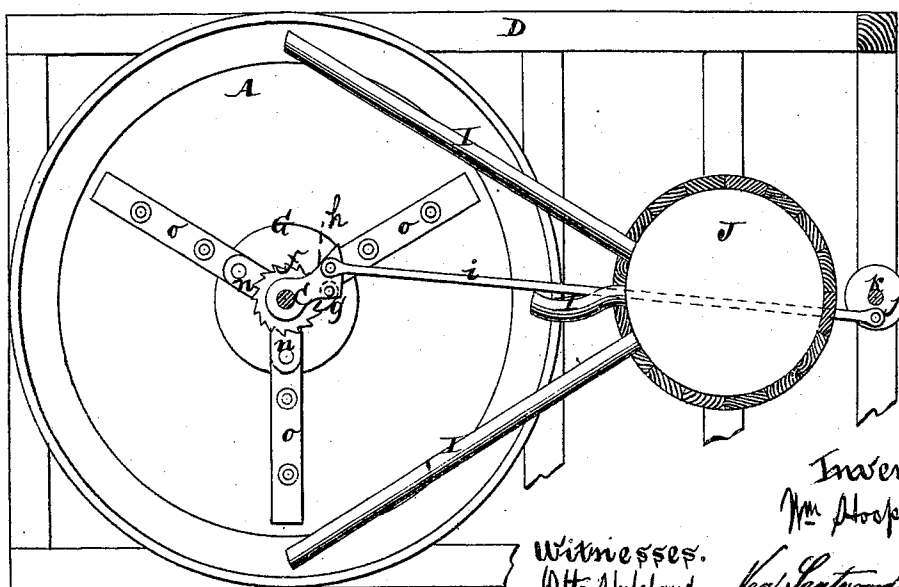


Fig. 2.



Witnesses.  
At the Stufeland.  
Juzo Bruggemann

In witness.  
 Wm Hooper per  
 Karl Santowood & Hauff,  
 Attorneys

# UNITED STATES PATENT OFFICE.

WILLIAM HOOPER, OF TICONDEROGA, NEW YORK, ASSIGNOR TO NEW YORK ORE SEPARATOR COMPANY.

## IMPROVEMENT IN REVOLVING BUDDLE FOR SEPARATING ORES, &c.

Specification forming part of Letters Patent No. 184,622, dated November 21, 1876; application filed March 15, 1876.

### *To all whom it may concern:*

Be it known that I, WILLIAM HOOPER, of Ticonderoga, in the county of Essex and State of New York, have invented a new and Improved Revolving Buddle for Separating Ores and other materials, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical central section. Fig. 2 is a sectional plan or top view.

Similar letters indicate corresponding parts.

My invention consists in the combination, with a buddle, having a revolving motion, and a self-adjusting central discharge-spout, of brushes, which rise and fall with the discharge-spout, as will more fully hereinafter appear.

In the drawing, the letter A designates a buddle, of circular form, made of sheet metal or any other suitable material. On the bottom of this buddle is secured a tube, B, which is closed at its bottom, but provided with lateral openings *a*. Through said tube and through the buddle A extends a vertical shaft, C, which is firmly keyed to the closed end of said tube, and has its bearing below in a step, *b*, and above in a journal-box, secured to the frame-work D. On the top of the shaft C is mounted a bevel-wheel, *c*, which gears in a bevel-wheel, *d*, secured on the driving-shaft E<sup>o</sup>, so that a revolving motion can be imparted to the buddle A. On the vertical shaft C is fitted a tubular screw, E, which turns loosely on the same, but is confined between two collars, *e e*, that are secured to the shaft by set-screws, one above and the other below the tubular screw E. With this tubular screw is firmly connected a ratchet-wheel, *f*, which engages with a pawl, *g*, secured to a lever, *h*, which turns loosely on the shaft C, and connects by a rod, *i*, with an arm or disk, *j*, which is secured on a vertical shaft, *k*, to which a rocking or vibrating motion is imparted by suitable connection with the driving-shaft. By the action of the rock-shaft *k* and lever-pawl, *g*, therefore, a slow revolving motion is imparted to the tubular screw E, independent of the shaft C and buddle A. On said

tubular screw is fitted a nut, G, which carries a swivel-ring, *l*, that connects by rods *m* with the central discharge-spout F, and as the screw E is turned by the rock-shaft *k* and lever-pawl *h g* the nut rises up on it, and the central discharge-spout is slowly raised. The screw E may, however, be turned by hand at suitable intervals, for the purpose of raising and lowering the spout. On the upper surface of the nut G are secured sockets *n*, for the reception of horizontal arms *o*, from which are suspended the brushes H. These brushes are so adjusted that their working surfaces are situated in the same plane with the top edge of the spout F, and, since said brushes are connected to the nut G, they retain their relative position toward said spout when the latter is raised or lowered.

If desired, however, the brushes H may be stationary, and when the buddle revolves they will assist in leveling the bed formed on the bottom of the buddle by the material to be separated; or the buddle may be stationary and the brushes be caused to revolve, whereby the same result is attained.

The material to be separated is fed to the buddle A through pipes or troughs I from a tank, J, and as the same rolls down upon the bottom of the buddle the heavy particles arrange themselves below and the light particles above, and the bed thus formed is kept level by the motion of the buddle and by the action of the brushes. The light particles which form the top layer of the bed gradually discharge through the spout F, and as the bed increases in depth the spout and the brushes are raised, and the material fed into the buddle is separated according to the specific gravity of its ingredients, the light particles being made to discharge through the spout F, while the heavy particles remain in the buddle, whence they are from time to time removed. To facilitate this operation, the buddle may be provided with a trap-door in its bottom, through which the material may be dumped, or the material may be removed from the buddle by means of a shovel or otherwise.

I do not claim, broadly, in this application the central discharge-pipe, in combination with

the screw for raising and lowering the same, as this is the subject-matter of a separate application.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a buddle having a revolving motion, and a central discharge-spout, of an automatic mechanism, such substantially as described, for causing the discharge-spout to automatically adjust itself to the depth of the bed formed on the bottom of the buddle by the material to be separated, as set forth.

2. The combination, with a buddle having a revolving motion, and a self-adjusting central discharge-spout, of brushes, which rise and fall with the discharge-spout, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 29th day of February, 1876.

WILLIAM HOOPER. [L. S.]

Witnesses:

JOHN C. FENTON,  
J. B. RAMSAY.