

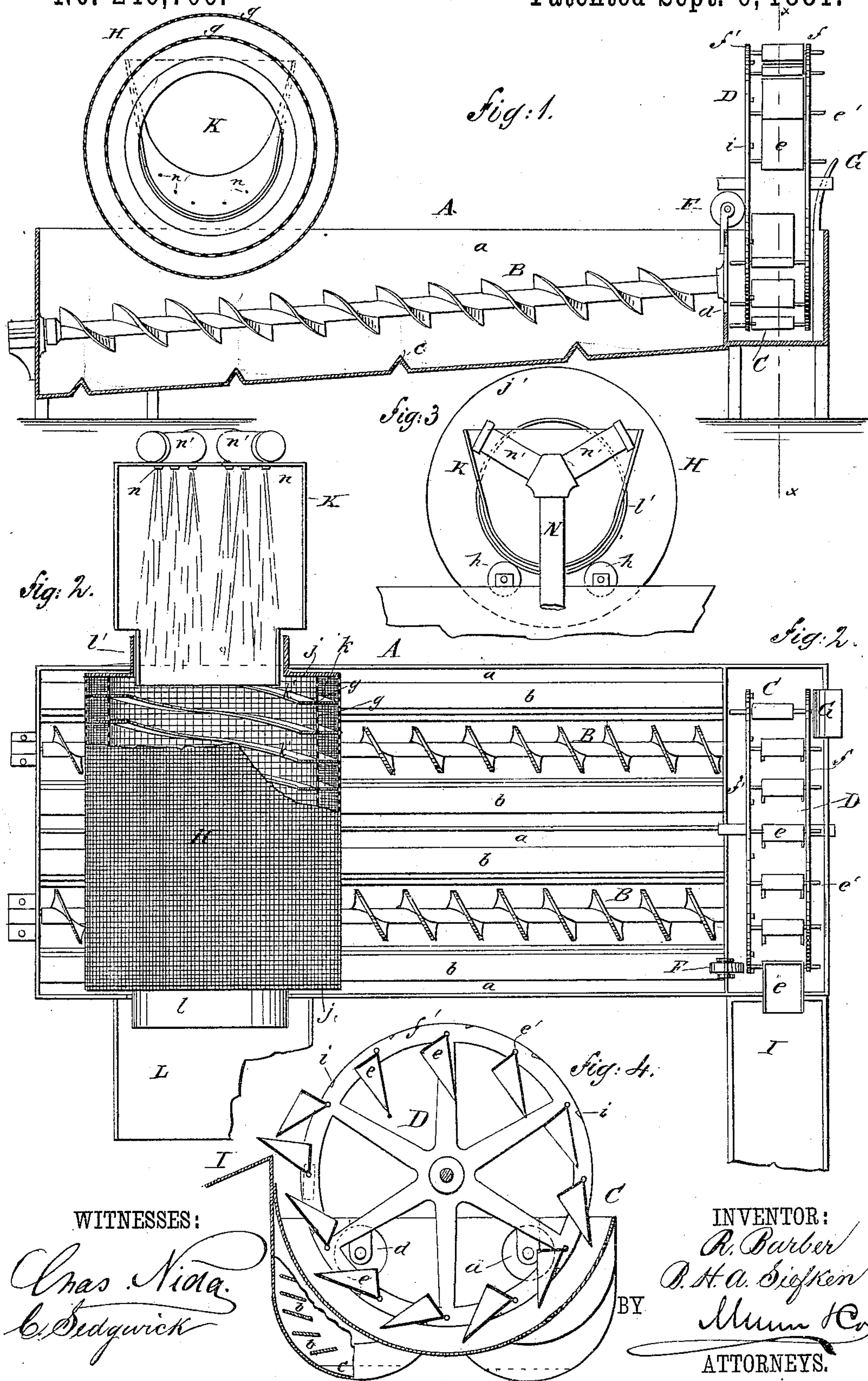
(No Model.)

R. BARBER & B. H. A. SIEFKEN.

ORE WASHER.

No. 246,706.

Patented Sept. 6, 1881.





# UNITED STATES PATENT OFFICE.

ROBERT BARBER AND BURCHARD H. A. SIEFKEN, OF OMAHA, NEBRASKA.

## ORE-WASHER.

SPECIFICATION forming part of Letters Patent No. 246,706, dated September 6, 1881.

Application filed March 31, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, ROBERT BARBER and BURCHARD H. A. SIEFKEN, of Omaha, in the county of Douglas and State of Nebraska, have  
5 invented a new Improvement in Ore-Washers, of which the following is a full, clear, and exact description.

The object of our invention is the production of a machine which will separate from auriferous sand or earth the fine as well as the  
10 larger particles of gold with the use of only a small quantity of water.

The invention consists, principally, of a washing-tank communicating with a tailing-tank,  
15 in which revolves a wheel provided with pivoted or swinging scoops or buckets for removing the tailings without unnecessary waste of water, the washing-tank being provided with suitable conveyers, riffles, and amalgamated  
20 plates; also, in the construction and arrangement of the parts of the machine, as hereinafter fully described.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of our invention.  
25 Fig. 2 is a plan view, a portion of the sizing-cylinder being broken away. Fig. 3 is an end elevation of the hopper and water-supply pipe, and Fig. 4 is a vertical section of the tailing-tank and the elevating-wheel, taken on  
30 line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the washing-tank, which is preferably formed of the two concave sections  
35 *a a*. In the center of each of these sections are placed the screw-conveyers B B, and upon both sides of each section are secured the amalgamated plates *b b*, the edges of which are contiguous to the edges of the conveyers,  
40 and in the bottom of the sections are placed the riffles or mercury-traps *c c*. The end of each section of the washing-tank communicates with the tailing-tank C through suitable openings, *d d*, in the partition between the  
45 tanks, as shown in Fig. 4. The elevating skeleton wheel D, which revolves in the tailing-tank C, has the series of pivoted or swinging triangular scoops or buckets *e e* pivoted loosely in and between the parallel sides *f f'* thereof  
50 upon the pivots *e' e'*, which are of greater length than the width of the wheel. The scoops or

buckets *e e* are of less width than the wheel, and during a portion of the revolution of the wheel rest upon the studs or projections *i i*,  
formed or secured upon the inside of the side  
55 piece, *f'*, which support the buckets in position for taking up the tailings from the bottom of the tank and holding the same until the buckets successively reach the top or edge of  
60 the tank, at which point the minor ends of the pivots *e' e'* come in contact with the shifting wheel or guide F, secured to the side of the tailing-tank, which causes the buckets to be  
moved off from the projections *i* and to empty  
65 their contents upon the chute I. The buckets, as they descend into the tank, are again moved in the wheel to engage with the studs *i* by the  
opposite ends of the pivots *e' e'* coming in contact with the guide G, secured to the opposite  
70 side and end of the tailing-tank, as shown.

The sizer H, adapted to revolve upon suitable anti-friction rollers, *h h*, above the washing-tank, is formed of the double screens *g g*,  
secured to the annular head-plates *j j*, the spiral  
75 conveyer *k* being interposed between the screens, and the conveyer *k'* being secured upon the inside of the inner screen, for conveying the material through the screen as the same is  
revolved. The annular head-plates *j j* are formed with the large collars *l l'*, which form the jour-  
80 nals upon which the screen is revolved and the openings by which the material is fed to and discharged from the cylinder.

The hopper K is preferably semicircular in form, and of such size relative to the size of  
85 the collar *l'* as to fit the inside of it, as shown in Fig. 2. The vertical end piece of the hopper is provided with small holes, through which the nipples *n n* of the water-supply pipe N  
pass. The supply-pipe N is preferably formed  
90 with the branch pipes *n' n'*, for distribution of the water supplied to the hopper.

In operation, motion being imparted by any suitable means to the screen, the screw-con-  
95 veyer, and the elevating-wheel, the metalliferous earth or sand is thrown into the hopper, from whence it is carried forward by the water-supply into the interior of the revolving screen, which separates from the mass the large stones  
100 and undisintegrated lumps which are unsuitable for washing and discharges the same upon the chute L, while the material suitable for



washing passes with the water into the washing-tank. The agitation caused by the screw-conveyer causes the pulp to circulate in contact with the amalgamated plates, and a gradual flow from the washing-tank into the tailing-tank, from whence the same is discharged by the scoops or buckets of the elevating-wheel.

It will be observed, owing to the buckets of the wheel being triangular in form and supported in the periphery of the wheel, as described and shown, that before the buckets reach the chute or point of discharge they are brought to a position to gradually pour back over the rear part of the bucket the supernatant water which may be taken up by them.

The jets of water supplied to the hopper prevents the clogging of the hopper and obviates the necessity of any shaking or other hopper-clearing mechanism, and also facilitates the disintegrating and screening of the material.

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

1. The combination, with a washing-tank 25 and a tailing-tank, of a wheel having rotary scoops in the tailing-tank, and conveyers, riffles, and amalgamated plates in the washing-tank, substantially as shown and described.

2. The washing-tank formed of the concave 30 sections *a a*, in combination with the screw-conveyers *B B*, riffles *c c*, and amalgamated plates *b b*, substantially as and for the purposes described.

3. The elevating-wheel formed of the side 35 pieces, *f f'*, the side piece *f'* being provided with the projections *i*, in combination with the sliding pivoted buckets *e e*, and means, substantially as described, for shifting the buckets, as and for the purposes set forth.

4. The combination, with revolving buckets 40 having pivots *e'*, of the guides *F G*, arranged as shown and described.

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Witnesses:

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