(No Model.) 2 Sheets—Sheet 1.

C. O. SUMNER.

PLACER MINING MACHINE.

No. 505,684. Patented Sept. 26, 1893.

Fig. 1.

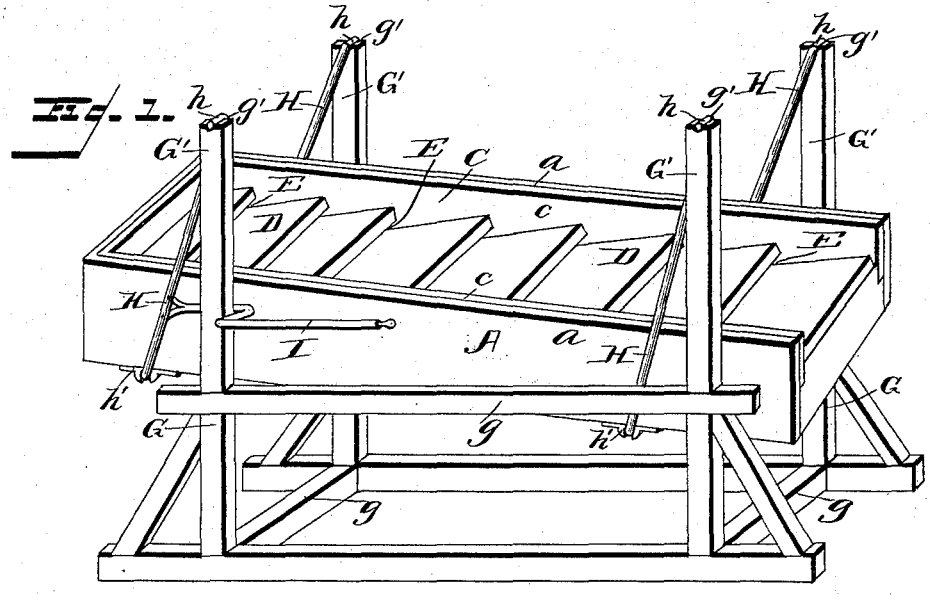
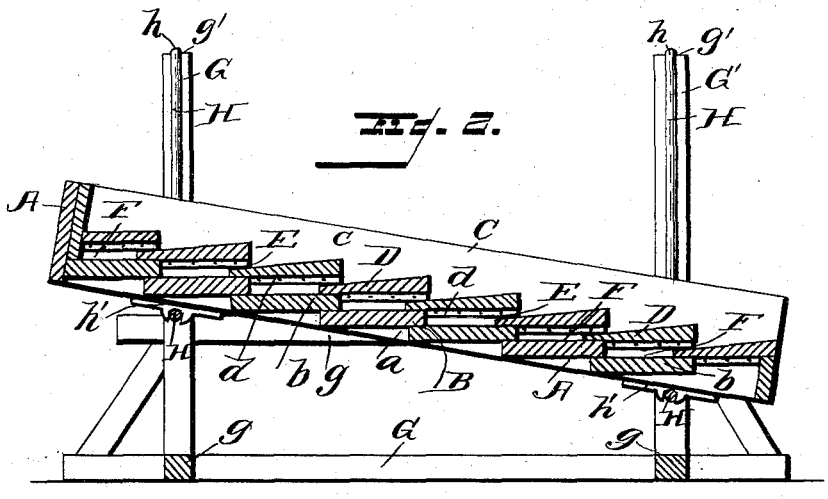


Fig. 2.



WITNESSES

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2 Sheets—Sheet 2.

(No Model.)

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PLACER MINING MACHINE.

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Fig. 3.

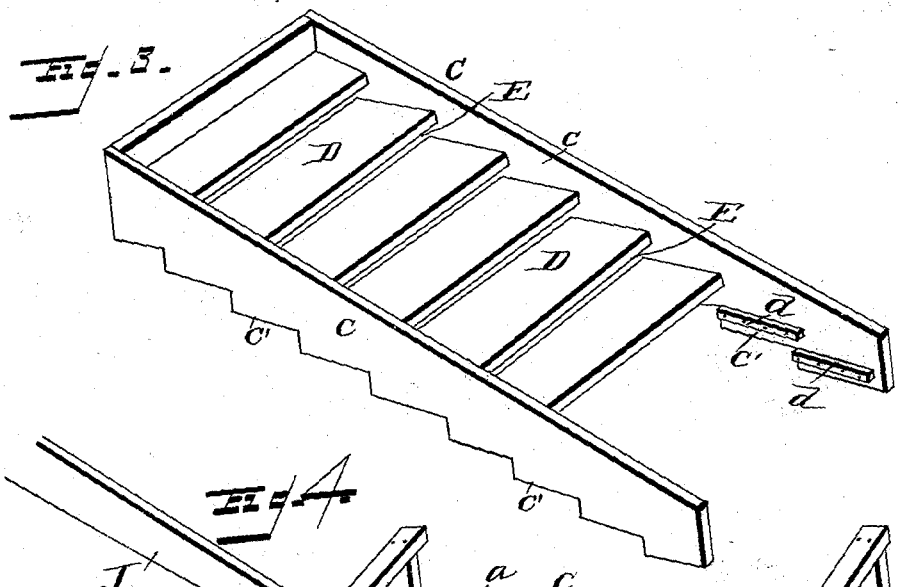


Fig. 4.

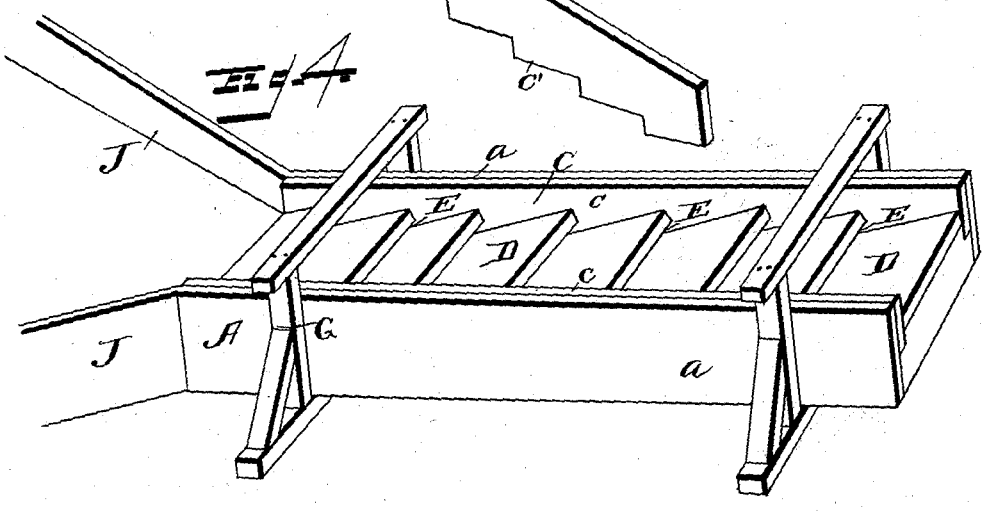
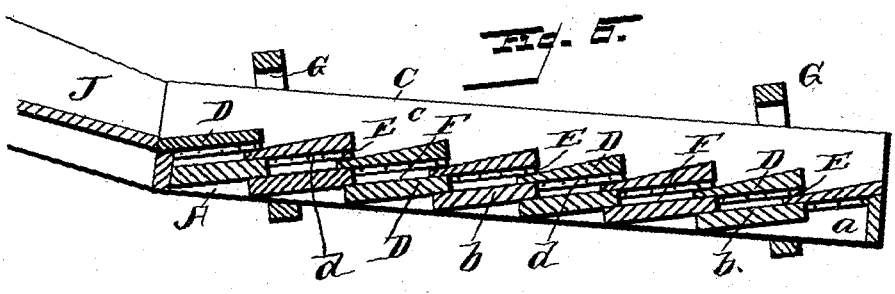


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES O. SUMNER, OF FAIR PLAY, COLORADO.

PLACER-MINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,684, dated September 26, 1893.

Application filed March 18, 1893. Serial No. 466,686. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. SUMNER, a citizen of the United States, residing at Fair Play, in the county of Park and State of Colorado, have invented a new and useful Placer-Mining Machine, of which the following is a specification.

This invention relates to placer mining machines, and it has for its object to provide a simple and improved device of this character which will possess advantages in point of simplicity and inexpensiveness in construction, durability and general efficiency.

To this end, my invention consists, substantially, in the construction, combination and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings—Figure 1 is a perspective view of a placer mining machine embodying my invention. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a detail perspective view of the auxiliary box. Fig. 4 is a perspective view of the invention as adapted for a sluice-box. Fig. 5 is a vertical longitudinal sectional view thereof.

Corresponding parts in all the figures are denoted by the same letters of reference.

Referring to the drawings, A designates a main box, open at its top and ends, and having a bottom, B. The box is constructed with two parallel sides, *a a*, connected by a series of transverse boards, *b*, of any desired width or thickness. These boards are set at an angle to the sides, and are arranged with their opposing edges in overlapped position, the rear edge of one board resting upon and supported by the forward edge of the next succeeding board. The bottom thus formed presents a stepped surface, closed from end to end.

Fitting closely within the main box and removable therefrom is an auxiliary box, C. The box C comprises two sides, *c c*, having their lower edges recessed, as shown at *c'*, whereby said sides are adapted to fit over the stepped bottom of the main box, when the auxiliary box is placed in position. Supported on cleats, *d*, secured to the opposing faces of the sides *c*, are transversely-arranged splash-boards, D, the latter overlapping each other after the manner of the boards *b*, but with the overlapping edges removed from each other to form an opening, E, for the purpose hereinafter described. The upper surfaces of the boards D have a greater forward incline relative to the sides than have the boards *b*, so that when the two boxes are in operative position, the upper surface of the boards D is in a forwardly-convergent plane relative to the upper surface of the boards *b*, as is clearly illustrated in Figs. 2 and 5. To effect this result, the boards D are preferably arranged in a parallel plane with the boards *b*, and the upper surfaces of the former are beveled forwardly. In lieu, however, of beveling the boards D, the same may be of less thickness than the boards *b*, and set at a slightly greater angle to the plane of the sides *c*, though I prefer the first described plan.

With the box A placed in position in the box B, the forward edges of the boards D rest upon the rear edges of the respective boards *b*, and form a series of traps, F, with which the openings E communicate from the rear of the device.

The foregoing construction is designed for use as either a placer machine or a sluice-box. When employed for the former purpose, the main box A is loosely suspended within a frame, G, by hangers, H. The frame G comprises four uprights, G', connected and braced in any suitable manner by timbers, *g*, and provided at their upper ends with bearing grooves, *g'*. The hangers H are approximately U-shaped and have their free ends turned outwardly to form bearings, *h*, which are disposed in the bearing grooves. The box A is suspended within the hangers in such a manner as to be capable of an endwise movement, and is provided with bearing-boxes, *h'*, which receive the hangers. It will be noted that the hanger at the forward end of the box is shorter than the one at the rear end, and consequently describes a smaller segment when the box is rocked or swung. Thus the forward end of the box has a greater vertical movement, which movement tends to force gravel and the like toward the rear end of the box.

When the placer machine is in normal position, the boards *b* are horizontal, while the upper surface of each of the boards D is inclined forwardly, and toward the openings to

the traps F. The box is rocked or swung by means of a handle, I, or other suitable device, and its movement causes gravel and the like to gravitate toward, and be discharged at, the rear end. The ore and other heavier particles are, by reason of their greater specific gravity and the forward incline of the boards D, caused to gravitate backward or toward the forward end, and are received by the traps F.

When the device proper is employed as a sluice-box, the frame described is dispensed with, and the box A is secured stationarily in suitable supports, the position it occupies being with the boards *b* in a horizontal position. In order to concentrate the water, diverging guides, J, are provided at the forward end of the box. In this construction, the greater volume of water serves to carry gravel and the like past the box, while the ore is received by the traps F in the manner above described.

I claim as my invention—

1. The combination, with a main box provided with a bottom consisting of a series of transverse overlapping boards, the rear edges of the latter being supported upon the forward edges of the adjoining boards, of an auxiliary box fitting within the main box and provided with a bottom consisting of transverse overlapping boards arranged at a forward incline relative to the boards of the main box, the overlapping edges being separated, said boxes forming conjunctively a series of traps having each a forwardly-inclined opening; substantially as set forth.

2. The combination, with a main box consisting of sides, and a bottom formed of transversely-disposed, overlapping boards arranged at an angle to said sides and having their rear edges supported upon the forward edges of the adjoining boards, of an auxiliary box removably disposed in said main box and consisting of sides recessed at their lower edges to fit the stepped bottom of the main box, and a bottom formed of transverse overlapping boards, the overlapping edges being separated, and the upper surface of each of said boards being forwardly beveled, said boxes forming conjunctively a series of traps each having a forwardly-inclined opening communicating therewith at its rear edge; substantially as set forth.

3. In a placer mining machine, the combination, with a frame comprising four uprights arranged in pairs at the forward and rear ends of the frame and provided at their upper ends with bearings, and a rearwardly-inclined box suspended within said frame and provided with traps, of approximately U-shaped hangers passing transversely under the box and having their upper ends provided with outwardly-projecting journals engaging the bearings of the uprights, the vertical arms of the forward hanger being of less length than the corresponding arms of the rear hangers, for the purpose described, and means for rocking or swinging the box longitudinally relative to the frame; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. O. SUMNER.

Witnesses:
LEO TETER,
HERBERT EDDY.