

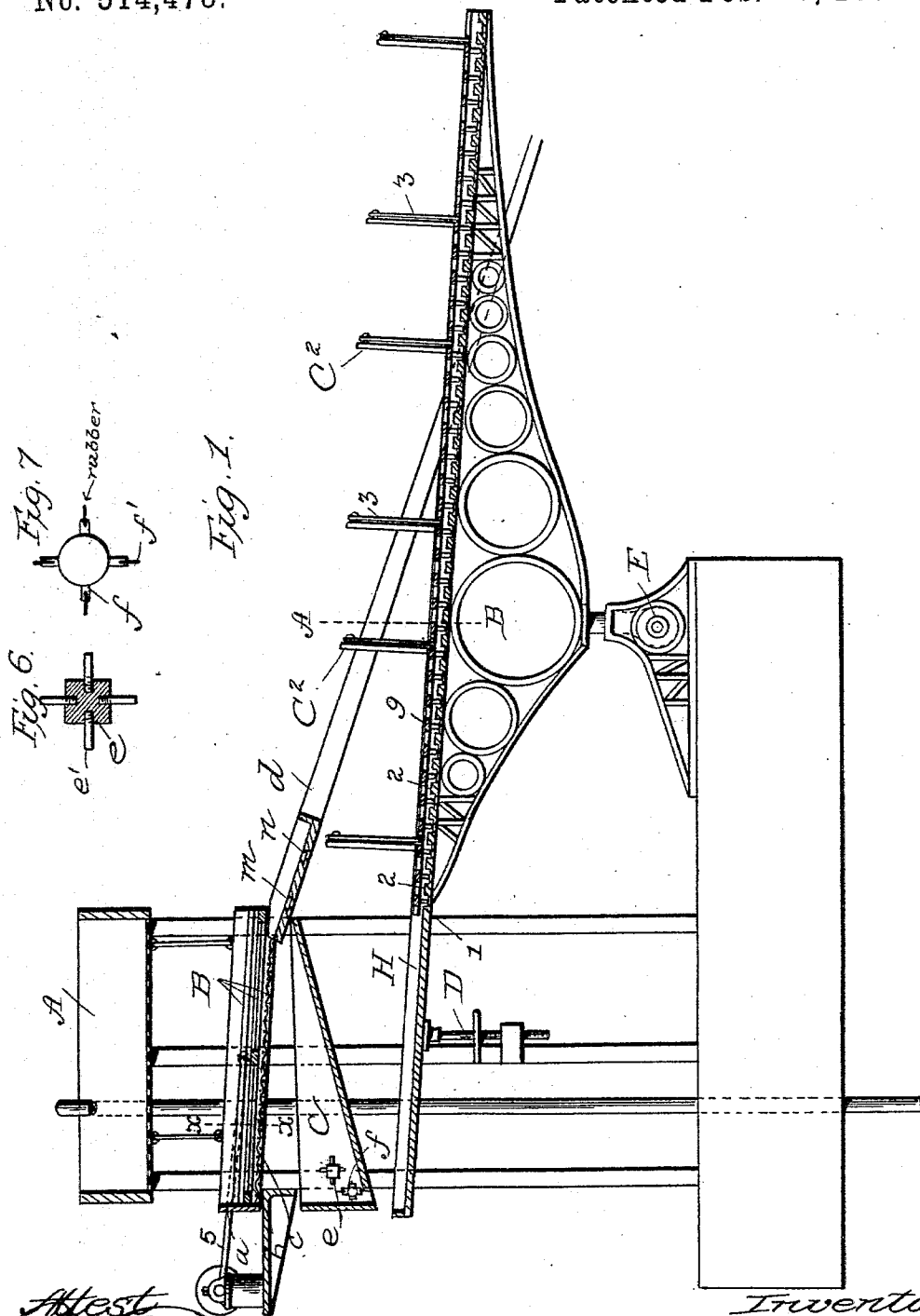
(No Model.)

2 Sheets—Sheet 1.

E. F. LACOUR.
ORE SEPARATOR.

No. 514,478.

Patented Feb. 13, 1894.



Attest
Patron Muller
F. L. Middleton

Inventor
Ernest Felix Lacour
by Richard H. Allen

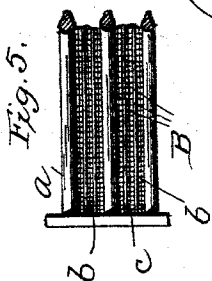
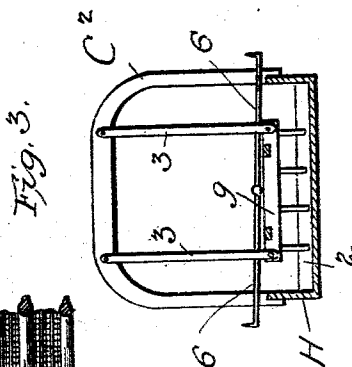
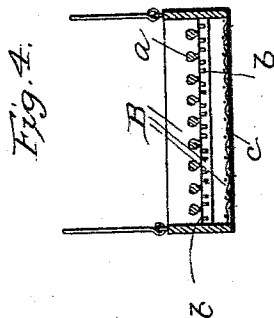
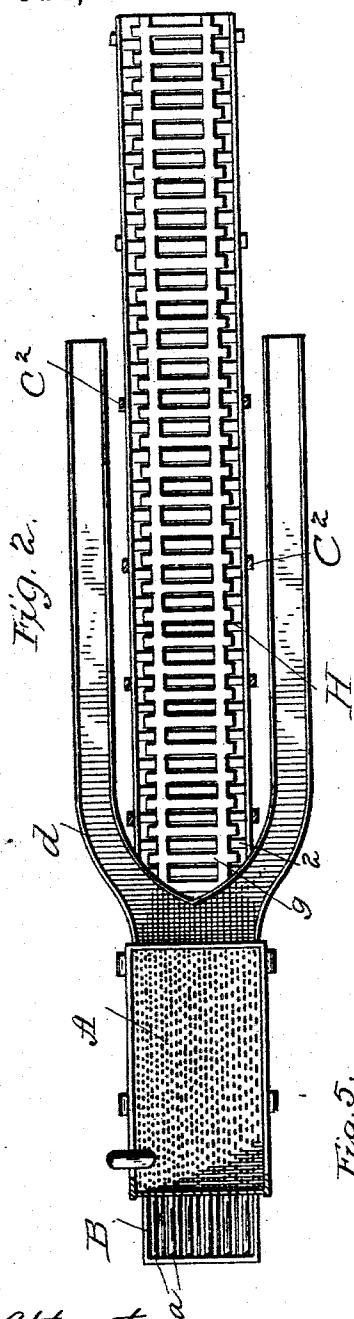
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2 Sheets—Sheet 2.

E. F. LACOUR.
ORE SEPARATOR.

No. 514,478.

Patented Feb. 13, 1894.



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Att'y

UNITED STATES PATENT OFFICE.

ERNEST FELIX LACOUR, OF GENOA, ITALY.

ORE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 514,478, dated February 13, 1894.

Application filed February 5, 1891. Serial No. 380,397. (No model.) Patented in Italy June 11, 1889, No. 25,382, and in France July 1, 1890, No. 204,737.

To all whom it may concern:

Be it known that I, ERNEST FELIX LACOUR, gentleman, a resident of the city of Genoa, in the Kingdom of Italy, have invented certain new and useful Improvements in Ore-Separators; and I do hereby declare the following to be a full, clear, and exact description of the same, the invention having been patented in Italy June 11, 1889, No. 25,382, and patent of addition March 8, 1890, No. 27,225, and patented in France July 1, 1890, No. 204,737.

The hereinafter described apparatus forming the subject of the present invention consists in the combination of the mechanisms hereinafter described, which can be in connection with a dredge, excavator, or other means for working auriferous deposits.

In the accompanying drawings forming a part of this specification: Figure 1 is a view of the apparatus in vertical section with parts in elevation. Fig. 2 is a plan view, partly broken away. Fig. 3 is a transverse section of the jigger on the line A B of Fig. 1, also on a larger scale. Fig. 4 is a sectional view on line $x-x$ of Fig. 1; Fig. 5 a detail plan view, and Figs. 6 and 7 show details.

In all the figures the same letters and numerals designate like parts.

Water reservoir.—This reservoir, marked A is supplied with water either by pumps or by any other convenient means. The bottom is pierced by holes throughout its length. By this arrangement the water falls with force in the form of rain on the stones and gravel in their passage over the screen B, washing them thoroughly and forcing into the sand-box C the very fine sand and the gold flakes it contains.

Jigger.—The classifying or grading screen represented by B is provided with a series of railway rails a or the like, as seen in Figs. 1, 2, 4 and 5, extending lengthwise of the screen whose object it is to lessen the shock of the stones discharged by the buckets. Below these there is a grating b , through which only stones of less than one centimeter in diameter can pass. Wire gauze c is secured at the bottom of the grating. This gauze in turn permits only the very fine sand, and the gold flakes which it contains, to pass into the sand-box C, thus reducing the matter fed onto the

screen and passing to the box C to about one fifth of the original volume, the other four fifths being thrown out and sent to the discharge canal d by the oscillating movement of the screen.

Sand-box.—This sand-box shown by C receives the water and the fine sand coming from the screen B. It is provided at its base with a distributor f which divides the water and the sand held suspended by the agitators e and distributes the same evenly, onto the canal H.

Sluice or receiving canal.—This canal represented by H is adjusted by means of a screw D and as said canal rests on a pivot E it may be adjusted as to its inclination by turning the screw. The sand-box C pours its contents onto the top of the canal, whose bottom is plain and smooth for the length of about two meters, or as shown in the drawings to the point 1. Then it is formed of wooden cross-pieces 2 of rectangular cross section ten centimeters broad, ten centimeters high and ten centimeters apart, forming transverse pockets in which the gold is deposited. Flat iron planes or cross-bars g which are seen in Fig. 2 have a movement transversely of the canal H which movement is imparted by the means hereinafter described. Projecting from the under side of these cross bars are pins which extend down into the transverse pockets forming agitators in the shape of rakes connected together by the cross bars. To the canal (sluice) H, arches C^2 are fixed from which the agitators are suspended by the links 3, as seen on Fig. 3. This series of rakes which totally cover the sluice, is the most important part of my system, for by it the material in the pockets or interstices, is always in action, the canal is never encumbered, the sand is equalized on the whole breadth of the sluice, and the movements of the particles which the transverse motion produces, the flakes and the excessively fine gold are precipitated to the bottom of the cross-pieces, giving the best effects. As shown in Fig. 1 the discharge canal d has two buckets m and n filled with mercury where the pyrites which could not pass through the wire-gauze c would be precipitated in running to the discharge canal.

The jigger may be vibrated by any suitable

means, as for instance, the pitman 5, shown in Fig. 1, and the agitator or rake frame may also be oscillated by any suitable means, the laterally extending arms 6 in Fig. 3, being proper representations of any proper means. The distributor *f*, Fig. 7, comprises the shaft and the flexible strips *f'*. The agitator *e* comprises a shaft having a series of points *e'* screwed into the same. The distributor and agitator may be operated by any means not shown.

I claim—

1. In combination, the water box, the jigger arranged below the same with means for operating it, the inclined canal *H* having pockets, the agitator frame having fingers working in said pockets, the sand box arranged below the jigger and having an inclined bottom extending therefrom to the top of the canal *H*, the agitating means at the lower end of said sand box and the conduit leading from the jigger to one side of the canal, substantially as described.

2. In combination, the water box and the jigger arranged below the same and comprising the series of large rails *A*, the rods *b* arranged intermediate of said large rails and below the upper surface thereof and the grating arranged below the large rails and the rods *b*, substantially as described.

3. In combination, the supply box, the jigger, the sand box, the sluice or canal, the agitator in the sand box comprising the shaft having the series of points and the distributor comprising the shaft having the rubber strips, substantially as described.

4. In combination with the water box and jigger, the sluice *H* having the transverse pockets, the laterally movable agitator or rake frame having teeth adapted to said pockets the arches *C*² extending over the sluice, the suspending rods pivoted thereto and to the rake frame for suspending the same, and the means for operating the rake frame, substantially as described.

5. In combination, the jigger, the sand-box, the sluice pivotally supported and the means for adjusting the inclination of said sluice, substantially as described.

6. In combination, the jigger, the water-box, and the canal *d*, leading away from the jigger and having mercury pockets *m n*, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ERNEST FELIX LACOUR.

Witnesses:

ERNESTO FERRANDO,
MONSCH MANRIZZIO.