(No Model.) 2 Sheets—Sheet 1.

S. TRUBY.

AMALGAMATOR.

No. 304,765. Patented Sept. 9, 1884.

Fig. 1.

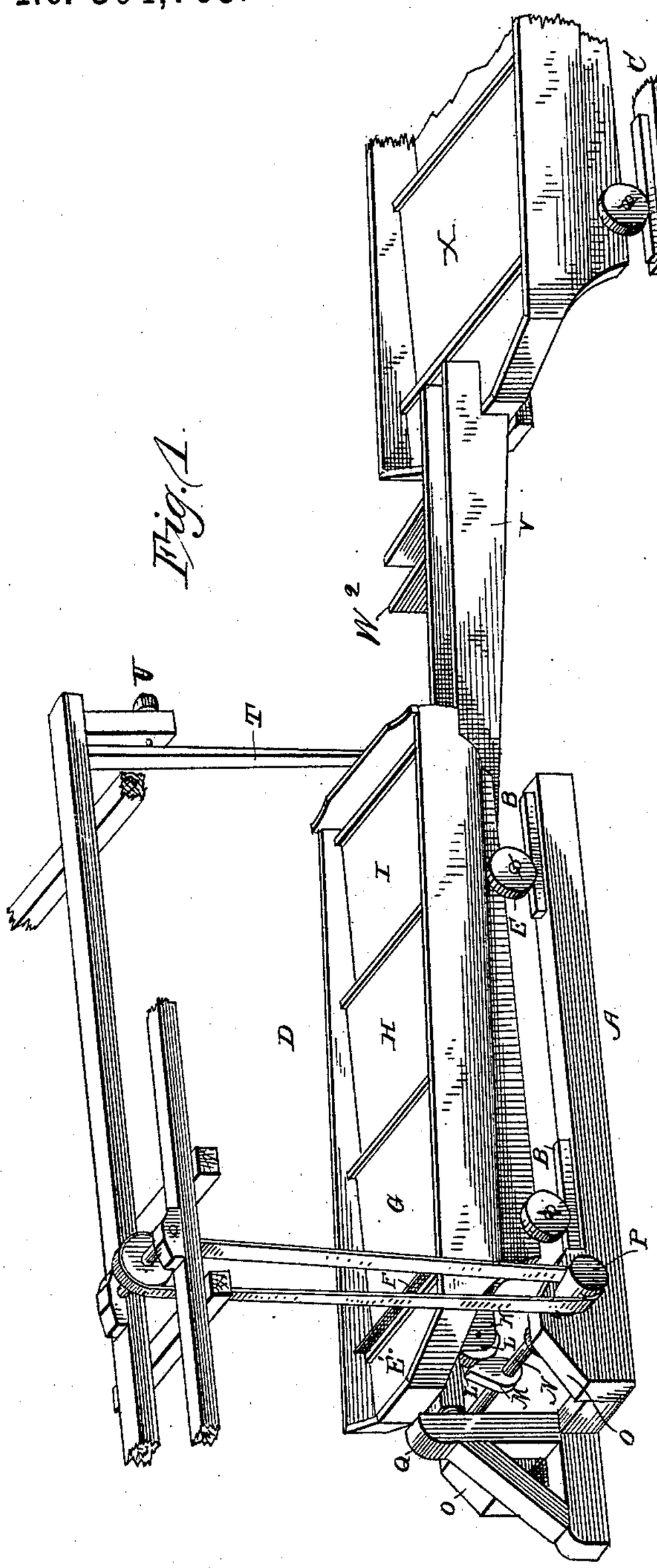
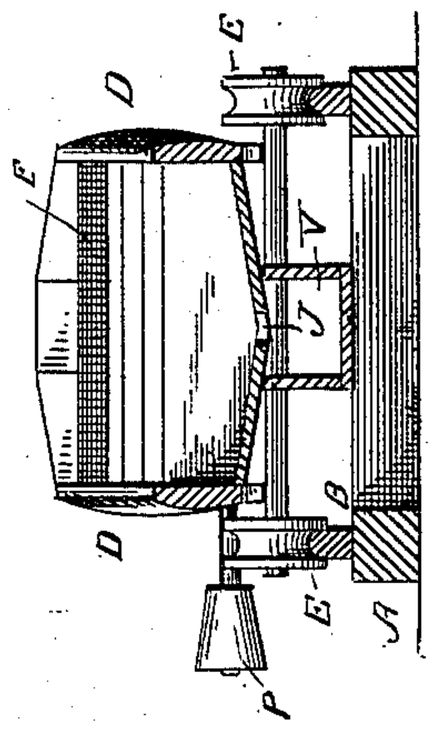


Fig. 3.



WITNESSES

W. H. Mortimer

W. E. Harris

INVENTOR

S. Truby

by McA. Snowden.

Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

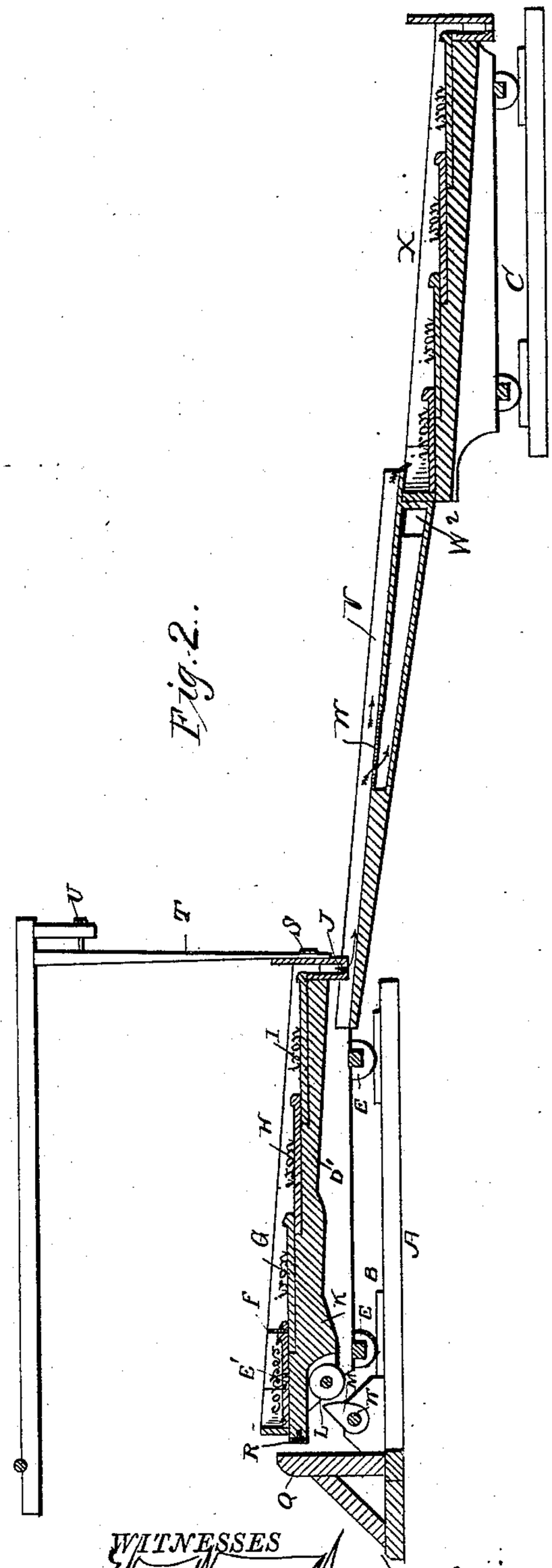
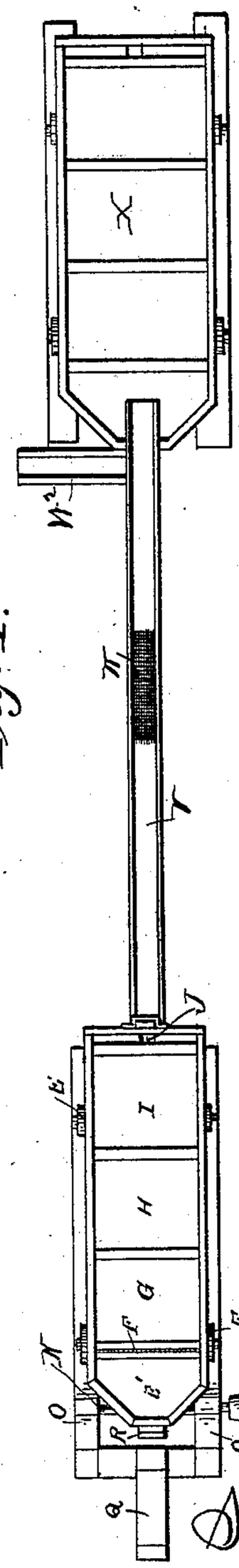


Fig. 4.



WITNESSES

W. W. Mortimer

W. L. Harris

INVENTOR

by Lockwood & Lockwood

Attorneys

UNITED STATES PATENT OFFICE.

SIMEON TRUBY, OF ALMA, COLORADO.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 304,765, dated September 9, 1884.

Application filed June 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, SIMEON TRUBY, a citizen of the United States, residing at Alma, in the county of Park and State of Colorado, have invented a new and useful Amalgamator, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to amalgamators for amalgamating, concentrating, and separating the gangue from comminuted mineral; and it has for its object to produce a machine of the class above referred to that shall possess advantages in point of simplicity, cheapness, durability, and general efficiency; and the invention consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a view in perspective of a machine embodying my improvements. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a vertical transverse sectional view, and Fig. 4 is a plan view of the concentrator and the slimes-table.

Referring by letter to the accompanying drawings, A designates the sleepers, and B the track-rails, of the iron track for the concentrator, and C designates the track for the slimes-table.

D designates the ore-concentrator, which consists of a frame of wood mounted on iron wheels E, which run on the track-rails B when the concentrator is operated. The frame D is three feet wide and eleven feet long, and inclines from the head to the tail, as shown. The bottom of the concentrator is composed of one copper plate, E′, of the shape shown, and three iron plates three feet square, having their lower edges lapping the upper edges of the plates next below each, which produces an offset or riffle at each lap equal in height to the thickness of the plate, which is about one-fourth inch. At the lower edge of the copper plate E′, on which the amalgamation is performed, is a fine screen, F, which prevents any coarse material from running onto the iron plates G H I below. The tail end of the frame D inclines from the sides to the middle, and is provided with a discharge-opening, J. The central beam, D′, of the frame is provided near its upper end with a shoulder, K, which is bifurcated in its end, and is provided with a metal friction-roller, L, against which the operating-cam M on the shaft N strikes to drive the frame D forward on the track. This shaft N has its bearings in boxes O on the sleepers of the track, and is provided with a cone-pulley, P. At the head of the track I provide a stop, Q, against which the cushion R on the end of the central beam, D′, which forms the bumper of the machine, strikes when the concentrator is in operation. The tail end of the frame D is provided with bracket S, in which the lower end of a wooden spring, T, is entered. This spring T is secured at its upper end to the floor or joist above, and is provided with an iron bench-screw, U, for tightening up or loosening the spring as the different ores may require. When the cam drives the concentrator forward, the spring T returns it, and it is thus given a reciprocating motion. A double sluice-box, V, is provided in its main portion with a fine screen, W, through which the finer sands, &c., pass into the branch portion W^2, while the coarser material passes over and upon the slimes-table. The sluice-box V is divided for a portion of its length by a horizontal partition, as shown in Fig. 2, and the branch portion W^2 extends from the lower passage in said sluice-box.

The slimes-table X is of the same construction as the concentrator with two exceptions: the plates are to be all of iron, and four feet wide. This table will be eleven feet long, but without the copper plate and screen.

The crushed ore is carried from the stamp-mill in small sluice-boxes, the ore being first mixed with water, and water flowed through said sluice-boxes to carry it to the amalgamator and concentrator, and deposited on the copper plate, where it is amalgamated. The amalgamation is performed by bringing the free particles of gold in contact with mercury on the copper plate, and the reciprocating motion shakes the crushed ore up, and the water spreads it over the amalgamating-plate, and enables the mercury and gold particles to come in contact. The sulphurets and other heavy particles contained in the ore pulp, sand, and gravel are carried on over the iron plates and gradually separated from the lighter particles, and as the separation of the sulphurets and other particles has not been completed on the concentrator, the slimes are run onto the slimes-

table and over it in a similar manner to complete the separation. The slimes-table is run at the rate of about thirty-five strokes per minute. The concentrating-table is run at the rate of fifty-five to sixty strokes per minute, according to the different kinds of ore. One concentrating-table will run the ore produced by five stamps or batteries, and one slimes-table will run the products of four concentrating-tables, and one man can attend to five concentrating-tables. It takes but little power to run the tables. A six-inch belt will easily run twelve tables. There is no leakage from them, so that the attendant can keep his feet dry.

Any person of ordinary intelligence can be taught to run the machines properly in two hours' time. The machines are run by steam or water power, as may be most convenient.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the amalgamator and concentrator, as described, and the slimes-table, of the double sluice-box having the screen and branch portion, said sluice-box being arranged between the concentrator and the slimes-table, and mechanism, substantially as described, for reciprocating the concentrator and slimes-table, as set forth.

2. The combination, with the concentrator and amalgamator, and mechanism, substantially as described, for operating it, of the double sluice-box having the screen and the slimes-table, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

SIMEON TRUBY.

Witnesses:
S. W. KUNZ,
FRANK WALTER.