(No Model.) 2 Sheets—Sheet 1.

J. A. MATHEWS & H. T. SCURRY.

SUBMARINE MINING MACHINE FOR DREDGING AND SEPARATING THE PRECIOUS METALS.

No. 436,181. Patented Sept. 9, 1890.

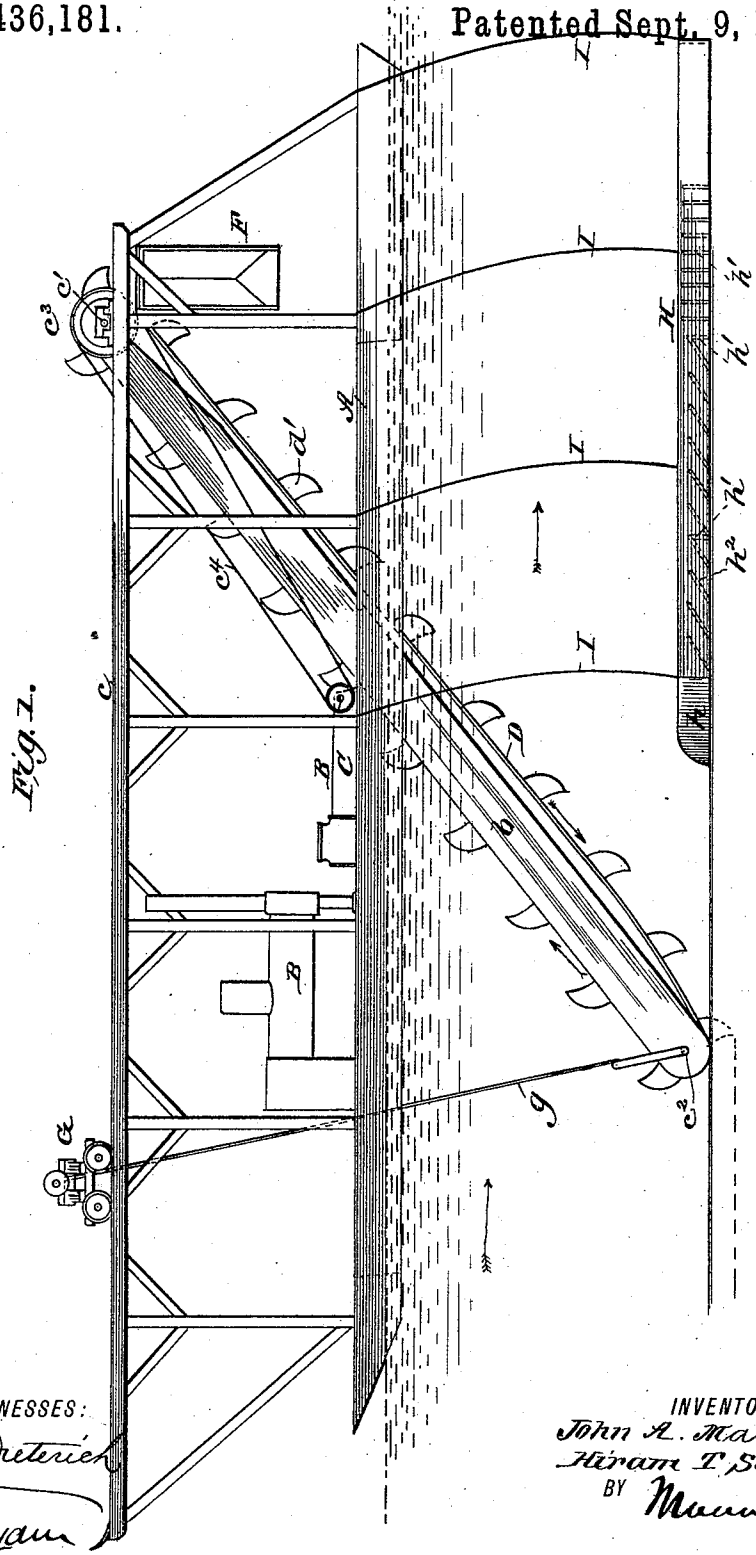


Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

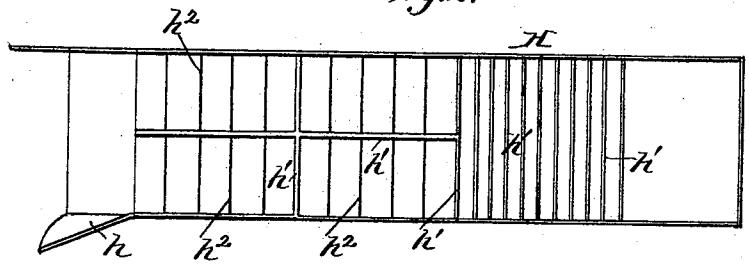


Fig. 4.

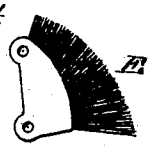
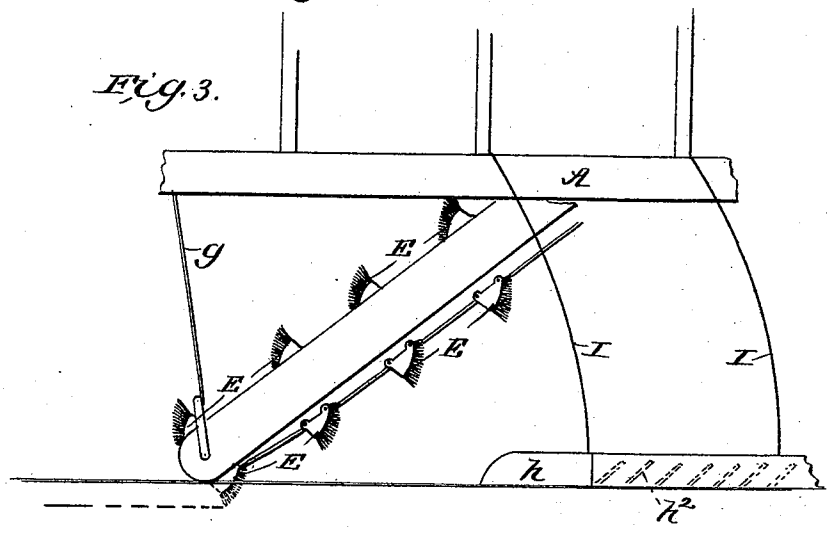


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN A. MATHEWS AND HIRAM THOMAS SCURRY, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

SUBMARINE MINING-MACHINE FOR DREDGING AND SEPARATING THE PRECIOUS METALS.

SPECIFICATION forming part of Letters Patent No. 436,181, dated September 9, 1890.

Application filed June 17, 1889. Serial No. 314,681. (No model.) Patented in Canada May 27, 1889. No. 31,445.

To all whom it may concern:

Be it known that we, JOHN ABRAM MATHEWS and HIRAM THOMAS SCURRY, both subjects of the Queen of Great Britain, and residing in the city of Vancouver, in the Province of British Columbia and Dominion of Canada, have invented a new and useful Improvement in Submarine Mining-Machines for Dredging and Separating the Precious Metals, of which the following is a specification.

The object of this invention is to provide an apparatus for effectually and economically dredging the beds of rivers having deposits of the precious metals.

The invention relates particularly to an apparatus designed to be attached to a boat, scow, or raft, which apparatus embraces a vertically-adjustable dredging mechanism worked by steam-power and adapted to operate in water of various depths for excavating and elevating gravel, &c., in connection with an ore-washer and separator arranged in connection with the said dredging apparatus.

The invention consists in the peculiar construction of several parts and their novel combination and arrangement, such as shown in the accompanying drawings, and hereinafter referred to.

In the drawings forming a part of this specification, Figure 1 is a side view of the machine. Fig. 2 is a top plan view of the separating-flume. Fig. 3 is a detail view of a portion of the belt with brush attached. Fig. 4 is a detail view.

Referring to the drawings, A indicates a boat, raft, or ponton, upon which is placed an engine B, adapted to drive the machine.

C indicates the dredging apparatus, which travels along the elevated track *c*, bent upon the boat or ponton. The dredging apparatus consists of the side beams *b*, the upper roller-shaft *c'*, and the lower roller-shaft c^2, and around the said roller-shaft is passed the endless belt D, to which are secured the dredging-buckets D' and the brushes E. The belt is driven by the wheel c^3 upon the shaft *c'*, said wheel being connected with the drive-wheel of the engine by a belt c^4. A discharge-chute F is arranged directly beneath the upper end of the belt, which receives the dredged matter and conducts it to a scow or barge adapted to receive such deposits.

G indicates a crane traveling upon the track forward of the shaft *c'*, said crane being connected with the lower end of the beams *b* by means of rod or chain *g*, and said crane is employed for raising and lowering said beam when raising bowlders from the river-bed, and for various other purposes.

A submerged iron flume and separator H is arranged to the rear of elevator and beneath the same, said flume resting on the bed of the river and being connected with the boat or ponton by means of the cables I, by which it is raised and lowered when desired. The flume is provided at its forward end with a side wing or wings *h*, and along its length is provided with a series of transverse vertical partitions *h'* and oblique partitions h^2, thus forming a series of pockets or riffles adapted to receive and retain the precious metals. The object of the flume is to retain the precious metals which may be stirred up by the buckets when the elevator is running, and when bed-rock or hard pan is reached the buckets are revolved and the wire brushes placed on the belt and the engine reversed. The brushes thus scratch up the bed-rock or hard pan and sweep it to the rear into the flume. The current of the river also assists in this operation. As soon as the flume is filled it is raised to the surface of the water and there emptied, when it is again lowered and moved into the most advantageous position. The dredging is then again resumed and continues as before.

The dredging apparatus may be arranged between two floats or alongside a single float, or it may pass through the bottom of the same, as desired.

Having thus described our invention, what we claim is—

1. In an apparatus for dredging and separating gold, the combination, with a float, of a traveling crane, endless belt carrying wire

brushes, and a flume located beneath the said belt and resting on the bed of the river, substantially as shown and described.

2. The combination, with the float, of the dredging apparatus C, the track *c*, traveling crane G, and the flume and separator H, constructed and arranged substantially as shown and described.

The foregoing specification of our new and improved subaqueous miner signed by us in the presence of the below-subscribed witnesses.

JOHN A. MATHEWS.
HIRAM THOMAS SCURRY.

Witnesses:
JOHN BOULTBEE,
B. C. KENWAY.