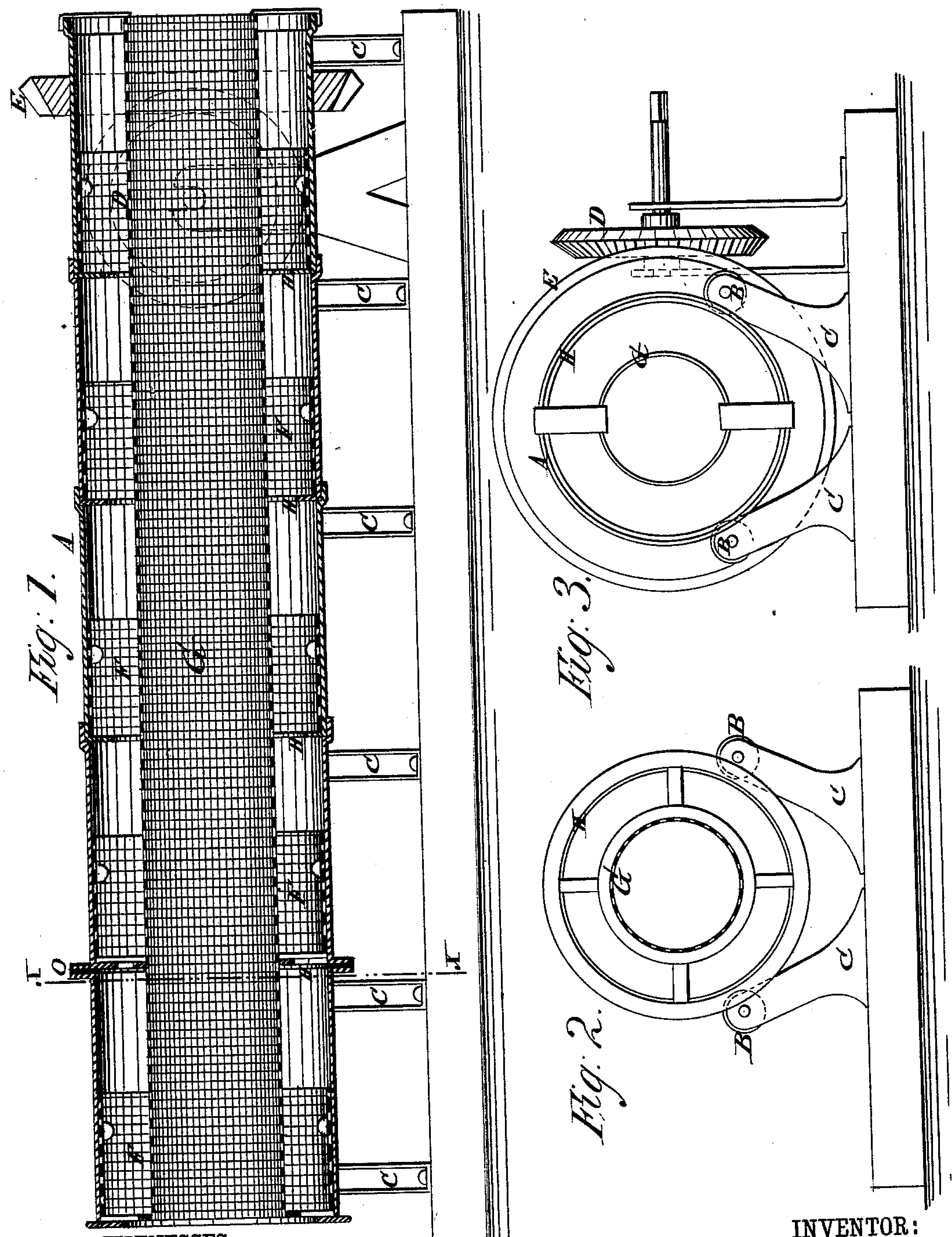
W. H. PILLINER.
Gold-Washer.

No. 220,656. Patented Oct. 14, 1879.



WITNESSES:

Achilles Schehl.
C. Sedgwick

INVENTOR:

W. H. Pilliner

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D C.

UNITED STATES PATENT OFFICE.

WILLIAM H. PILLINER, OF ELKO, NEVADA.

IMPROVEMENT IN GOLD-WASHERS.

Specification forming part of Letters Patent No. **220,656,** dated October 14, 1879; application filed February 3, 1879.

To all whom it may concern:

Be it known that I, WILLIAM H. PILLINER, of Elko, in the county of Elko and State of Nevada, have invented a new and Improved Gold-Washer, of which the following is a specification.

Figure 1 is a longitudinal sectional view of the washer. Fig. 2 is a section through *x x*. Fig. 3 is an end view at *y*.

Similar letters of reference indicate corresponding parts.

The object of this invention is a gold-washer and amalgamator of simple construction, designed for the purpose of obtaining gold, either in the wet or dry way, from the ores containing it.

The apparatus consists of a cylinder, A, resting on friction-rolls B B, which are supported by standards C C, and made to revolve by means of the engagement of the gear-wheel D into the gear-wheel E, which embraces the end Y of the cylinder. The cylinder is made in sections—as many as may be requisite for the work—which are flanged, as shown at O, and secured together with bolts, packing being placed between the flanges to make tight joints.

Perforated copper or zinc plates F F, coated with quicksilver, are used as a lining to the cylinder, being firmly secured to its inner face.

Fixed to the longitudinal axis of the cylinder, and continuing through its length, is a cylindrical screen, G, preferably constructed in sections, into which the ore to be treated is first introduced. The ore that is fine enough for treatment falls through this screen upon the perforated lining-plates, while the coarser particles may be gradually ejected at one end of the screen as the cylinder revolves.

At each joint of the cylinder there is also an inner flange or riffle, H H, whose function is to check the outward movement of the particles of gold, and to retain them in sufficiently long contact with the amalgamated perforated lining-plates, and with the quicksilver which has been introduced for securing the gold.

When in operation the apparatus may be set at a slight inclination, say of an inch to the foot, more or less, and after the introduction of sufficient quicksilver the ore to be treated may be introduced continuously into it by a stream of water, in which case the rate of revolution of the cylinder will be determined by the inclination given to it, the velocity of the water-current passing through it, or the character and fineness of the ore treated, or by a consideration of all these conditions; or the cylinder may be set on a horizontal level, and one charge of ore be introduced and worked, and the gangue washed out before a second one is put in for treatment.

The gold-washer consisting of a trough with riffles for retaining the quicksilver and gold is a well-known device and in common use in gold-mining, especially in hydraulic and placer mining; but as it fails to secure the finer particles of gold present in the ore, its use is rarely economical.

Amalgamated copper plates moved with a reciprocating motion, and called "shaking-tables," are, it is well known, often used for gold-amalgamating purposes; but the same objections apply to their use, for in both cases it is merely the effect of its own gravity that brings the gold in contact with the mercury. When ore is worked by these methods, then, the contained particles of gold can have but very slight and brief contact with the detaining quicksilver, and in consequence, under ordinary circumstances, much of it must escape.

It is obvious that in the washer herein described the particles of gold must be rubbed, as it were, into the quicksilver by the revolutions of the cylinder, and that such forcible contact must of itself very considerably increase the percentage of amalgamation, while the much longer exposure of the gold to the mercury, which is possible in this washer, cannot fail to add still more to its advantage.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the cylinder A, rolls B B, standards C C, cylindrical screen G, perforated plates F F, and inner rings or riffles, H H, substantially as herein shown, and for the purposes described.

WILLIAM HENRY PILLINER.

Witnesses:

SAMUEL MITCHELL,

A. J. ELLIS.