

(No Model.)

T. G. BARLOW-MASSICKS.
WASHER FOR AURIFEROUS GRAVEL, &c.

No. 565,151.

Patented Aug. 4, 1896.

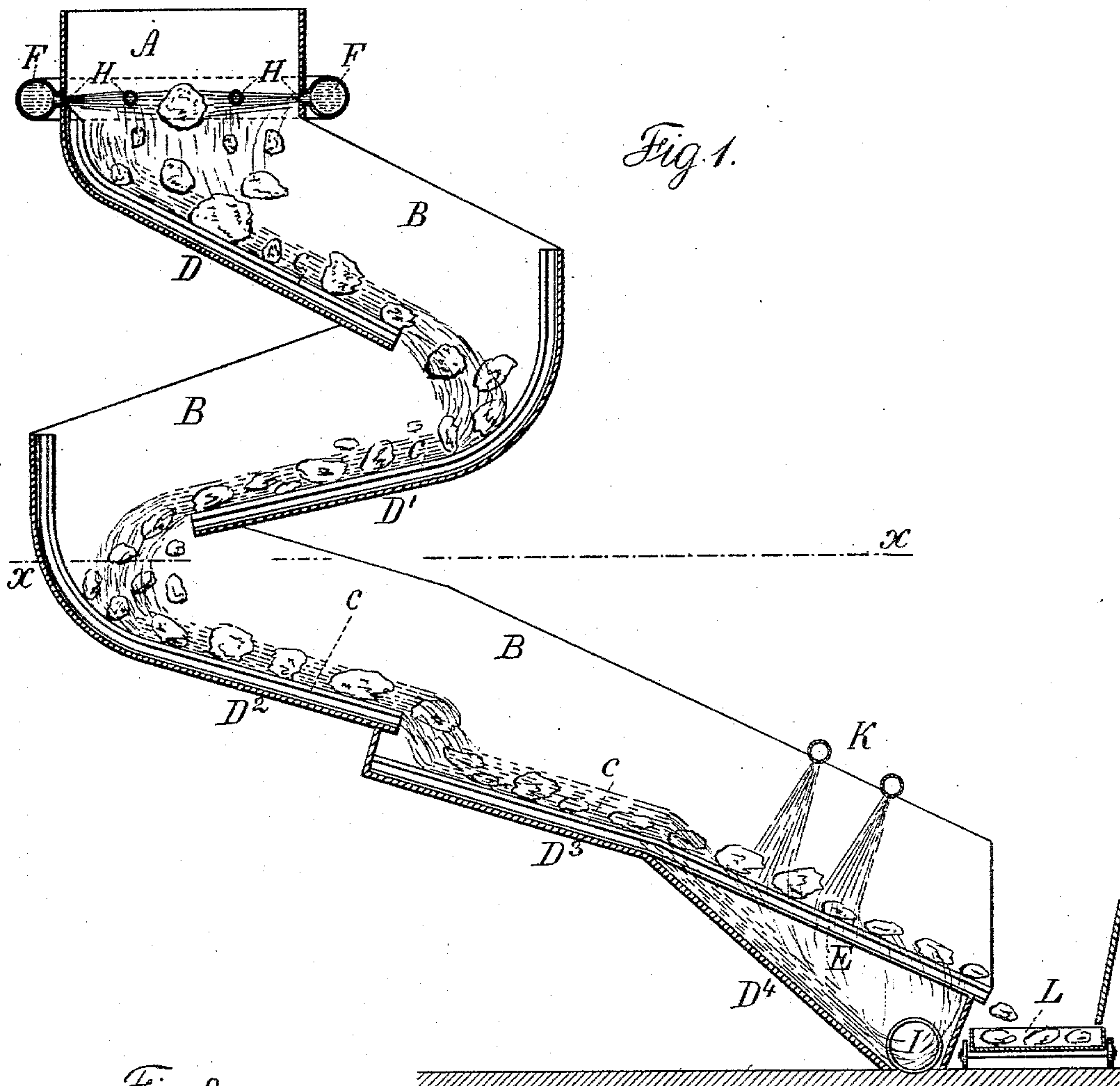
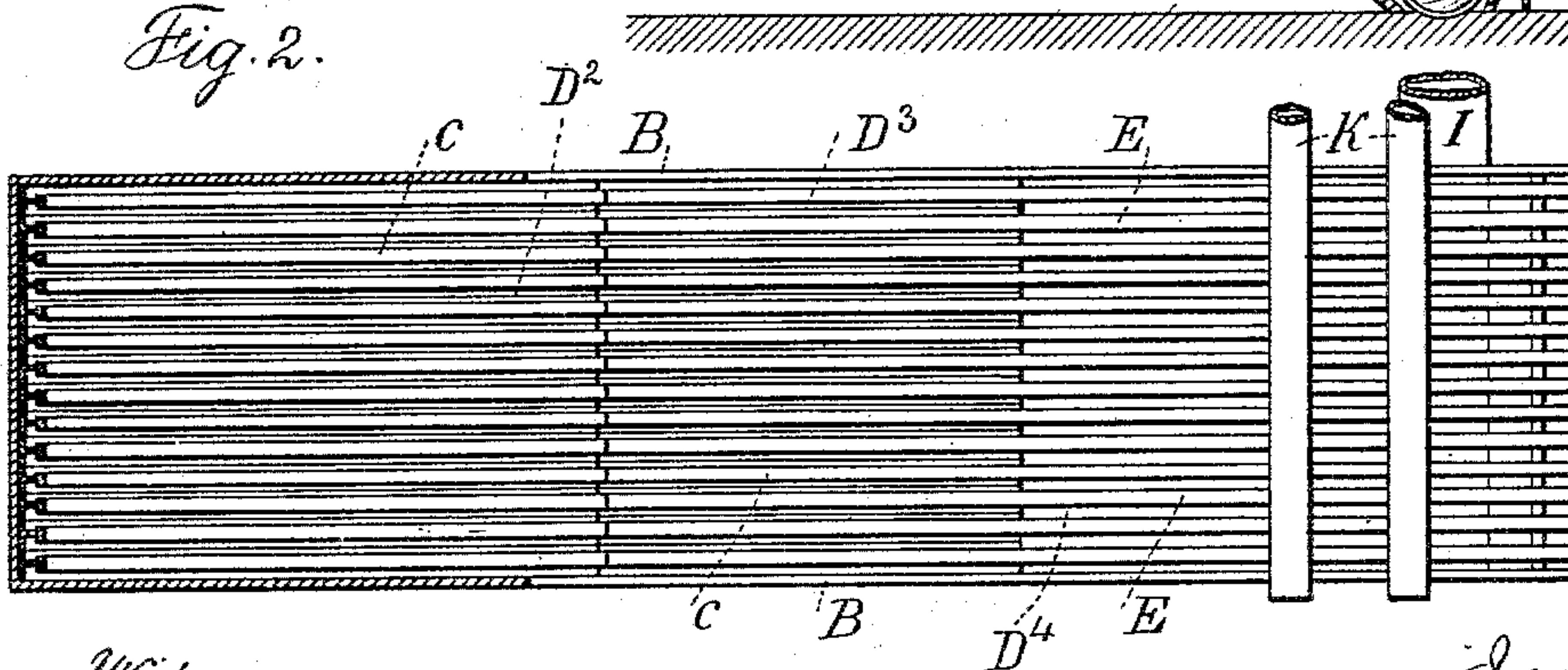


Fig. 2.



Witnesses:
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Att'y.

UNITED STATES PATENT OFFICE.

THOMAS G. BARLOW-MASSICKS, OF PRESCOTT, ARIZONA TERRITORY.

WASHER FOR AURIFEROUS GRAVEL, &c.

SPECIFICATION forming part of Letters Patent No. 565,151, dated August 4, 1896.

Application filed January 23, 1895. Serial No. 535,912. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. BARLOW-MASSICKS, a subject of the Queen of Great Britain, residing at Prescott, in the Territory of Arizona, have invented an Improvement in Washers for Auriferous Gravel and other Materials, of which the following is a specification.

In placer-mining especially it is important to wash the gravel and finer materials from the stones and boulders, and in effecting this operation sufficient agitation and concussion are important to break up the harder lumps and prevent them remaining intact, so that all the gravel and finer materials will be loosened from the fine particles of gold and allow them to subside as the earthy materials are washed away.

The present apparatus is made with reference to effecting these operations and for rendering the apparatus durable under the severe concussion frequently arising from the larger stones or boulders that may pass through the apparatus.

In the drawings, Figure 1 is a vertical section of the apparatus, and Fig. 2 is a sectional plan at the line *x x*.

The hopper A is provided for the reception of the gravel and other materials as discharged from any suitable apparatus, such as the dipper of a steam-shovel, and the bottom of this hopper is made as an incline D, there being upon the surface of the incline plates or bars *c*, which are of suitable size and strength for receiving and supporting the stones and larger pieces of material that may be deposited in the hopper, the finer materials running down in the grooves between the bars, and there is a second hopper D', having an incline extending in the opposite direction and a rounded portion opposite to the delivery end of the hopper D and having bars *c*, which are curved upward to conform to the hopper at the receiving side, so that the materials sliding down the incline of the hopper D pass by gravity and the larger pieces fall upon the bars *c* of the hopper D' and the finer particles in the grooves, and so in like manner a third hopper D², of similar curved form and opposite position, is provided for receiving the materials from the hopper D', and water is sup-

plied into the hopper A in suitable quantities, preferably through the pipes F, running around the hopper and having lateral discharge-nozzles H, so that the jets of water are forcibly directed toward each other and upon the materials supplied into the hopper A, so as to wash such materials and separate the finer earthy matters from the stones and boulders, such stones or boulders being supported on the top edges of the bars *c* and sliding down upon the same, and the finer materials running down in the grooves between such bars, and by the alternate positions of the hoppers D D' D² the earthy materials are subjected to concussion as the stones or boulders fall by gravity from the lower ends of one hopper upon the bars of the next hopper below.

I have represented the sides B of the hoppers as substantially continuous and forming a descending flume for the materials to pass from the hopper A downwardly to the point of delivery, and it is advantageous to provide a step or depression in the continuation D³ of the hopper D², and at the lower end of the said continuation D³ a screen E is provided, which is advantageously made of iron bars or a perforated plate, so that the water and fine materials will pass freely through this screen, leaving the boulders and coarse material to slide over this screen and discharge into any suitable receptacle or conveyer L, by which the boulders and coarser materials are delivered. This washer may be mounted and used in any usual manner, either stationary or movable.

The pipes K with openings or nozzles are provided above the screen E for the supply of water that effects a final washing of any fine materials from the stones or boulders that slide over the screen E.

The hopper-bottom D⁴, which is advantageously a continuation of the hopper-bottom D³, descends below the screen E sufficiently for receiving the water and fine materials that are washed from the stones and boulders, and from this hopper or tank the water and fine materials pass by any suitable pipe or opening I to an amalgamator for extracting the gold in any suitable manner.

This apparatus is very efficient in separating the fine from the coarser materials by the

expenditure of as small a volume of water as possible.

I claim as my invention—

1. The combination in a washer for auriferous gravel and similar materials, of a hopper into which such materials are dumped, pipes running around the hopper having lateral discharge-nozzles for directing the jets of water toward each other, a series of alternating inclined hoppers beneath each other and the receiving-hopper and having a rounded portion and receiving the material discharged from the hopper above, longitudinal bars conforming to the hoppers and upon the surfaces thereof with spaces or grooves between, said bars receiving and supporting the larger stones or boulders and the finer materials passing down the grooves, and a screen at the lower end for separating the boulders and larger pieces of material from

the water and fine materials, a hopper for receiving such water and fine materials and delivering the same for subsequent treatment, substantially as specified.

2. The combination in a washer for auriferous gravel, of hoppers with inclined bottoms and curved upper portions protected on their upper surfaces by parallel bars that are curved at their upper ends to correspond in shape to the hoppers, such hoppers being placed at opposite inclinations so that the earthy and watery materials from the lower edge of one hopper fall upon the curved upper part of the hopper next below, substantially as specified.

Signed by me this 14th day of January, 1895.

THOS. G. BARLOW-MASSICKS.

Witnesses:

JOHN N. McCONNEL,
EDITH McCONNEL.