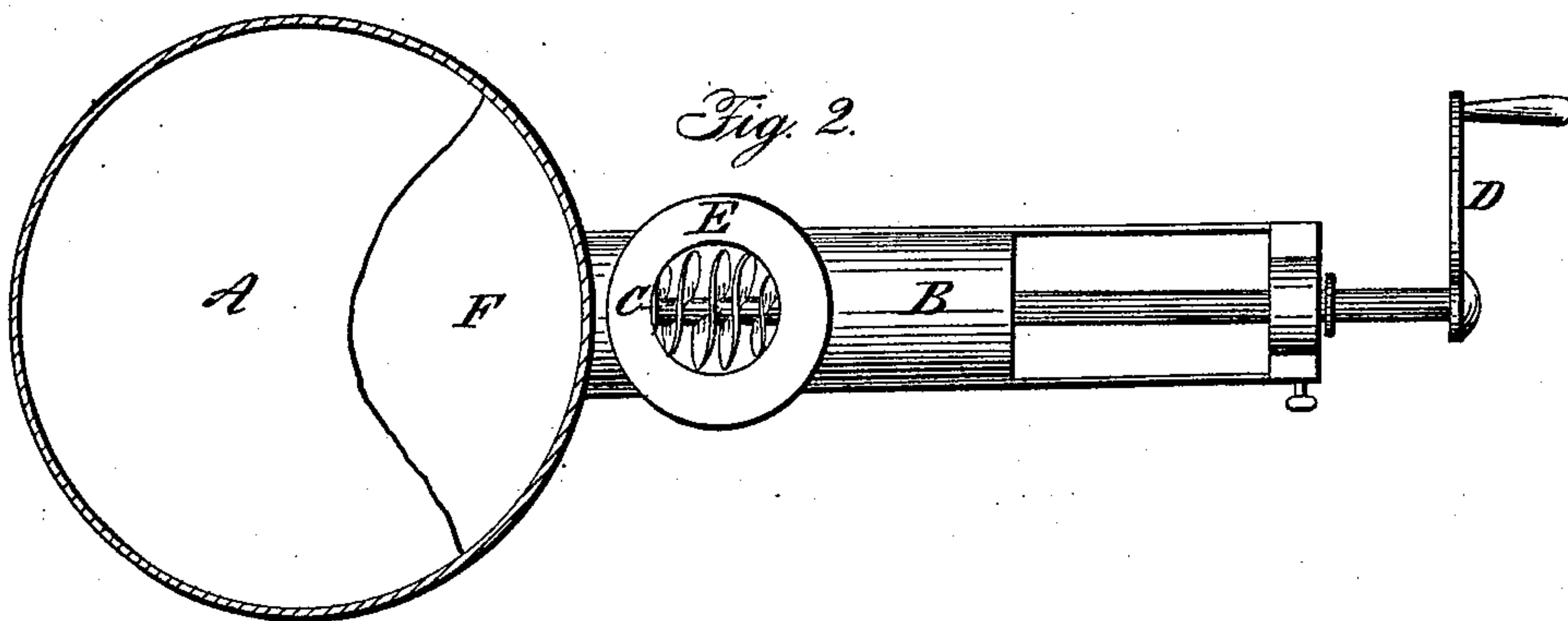
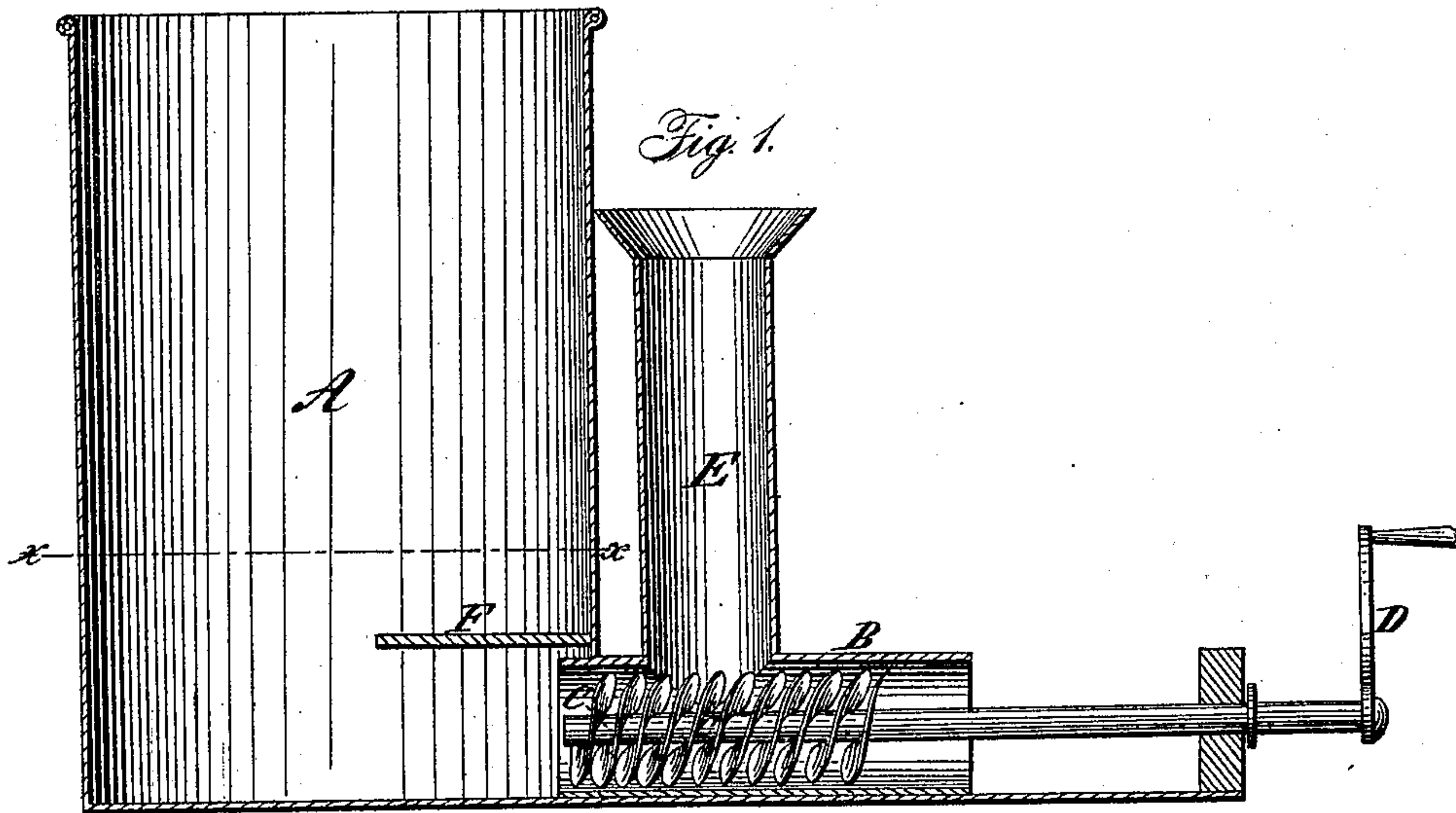


CURTIS & TRIPP.  
Ore Amalgamator.

No. 54,062.

Patented Apr. 17, 1866.



**Witnesses:**

*W. E. Mann*  
*Richard Tripp*

**Inventor:**

*George S. Curtis*  
*Thomas Tripp*

# UNITED STATES PATENT OFFICE.

GEORGE S. CURTIS AND THOMAS TRIPP, OF CHICAGO, ILLINOIS, ASSIGN-  
ORS TO THEMSELVES, E. G. L. FAXON, AND HENRY S. DODGE.

## IMPROVED AMALGAMATOR.

Specification forming part of Letters Patent No. 54,062, dated April 17, 1866.

*To all whom it may concern:*

Be it known that we, GEORGE S. CURTIS and THOMAS TRIPP, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Amalgamators; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

The nature of our said invention consists in a novel arrangement or device for submerging disintegrated ores and sands containing the precious metals beneath or in a bath of mercury or other liquid metal with a view to the separation of the precious metals from the ores and sands in which they are contained, and for diffusing or dispersing said submerged ores and sands in the bath, so as to bring all the particles of the ores in contact with the amalgamating-bath, and thus save and obtain a greater percentage of the precious metals than can otherwise be done.

To enable those skilled in the art to understand how to construct and use our invention, we will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents a central vertical section of our invention, and Fig. 2 is a horizontal section of the same at  $x$  in Fig. 1.

Similar letters of reference in the different figures denote the same parts of our invention.

A represents the vessel containing the amalgamating-bath; B, a tube opening into the same at the bottom, as shown; and C is a screw used for the purpose of conveying the disintegrated ores into the amalgamating-bath, arranged within the tube B and extending nearly to its inner end, being revolved by means of the crank D or any other appropriate means.

E represents a vertical tube, into the upper end of which the sand and ores are fed, whose lower end opens into the tube B and upon the conveyer C, as shown.

F represents a diaphragm or plate attached to that side of the vessel A at which the pulverized ores or sand is introduced, which may incline upward from the side of the amalgamator if desired. This diaphragm is for the purpose of preventing the ore from rising in a mass at one point through the bath, in which case the separation of the precious metals

would be very imperfect and much would be lost.

By the arrangement of the said plate F as the ores rise from the mouth of the conveyer and strike against the under side of the plate they are dispersed and scattered so as to come up all around the curved edge of the dispenser or plate F in small and separate particles, and are thus thoroughly subjected to the amalgamating-bath, and consequently the precious metals are thoroughly separated from the ores and sand and saved.

It may be observed that the screw C does not extend out to the end of the inclosing-tube. This arrangement is to allow the end of said tube to be filled with the disintegrated ores through the tubes E and B before the bath is placed in the amalgamator, which thus prevents the heavy liquid metal composing the bath from getting possession of the conveyer to the exclusion of the ores and insures the successful operation of the apparatus.

We are aware that a screw-conveyer arranged vertically has been employed for the purpose of submerging ores beneath the amalgamating-bath; but our own experience proves this method to be impracticable, as it will not operate successfully.

Our invention consists in the employment of a horizontal screw-conveyer arranged in connection with the amalgamating-vessel, as described, and a vertical feed-pipe opening upon said screw in the manner shown and described, by which arrangement the submerging of the ores is successfully and uninterruptedly accomplished.

Having described our invention, we will now specify what we claim and desire to secure by Letters Patent:

1. The combination of the vertical feed-pipe E and the horizontal conveyer B C with the amalgamating-vessel A, arranged and operating substantially as and for the purposes shown and described.

2. In combination with the amalgamator A and conveyer B C, the arrangement of the diaphragm or dispenser F, substantially in the manner and for the purposes described and shown.

GEO. S. CURTIS.  
THOMAS TRIPP.

Witnesses:

W. E. MARRS,  
RICHARD TRIPP.