W. E. BUSBY.

AMALGAMATOR.

APPLICATION FILED DEC. 17, 1909.

988,288. Patented Mar. 28, 1911.

Fig 1.

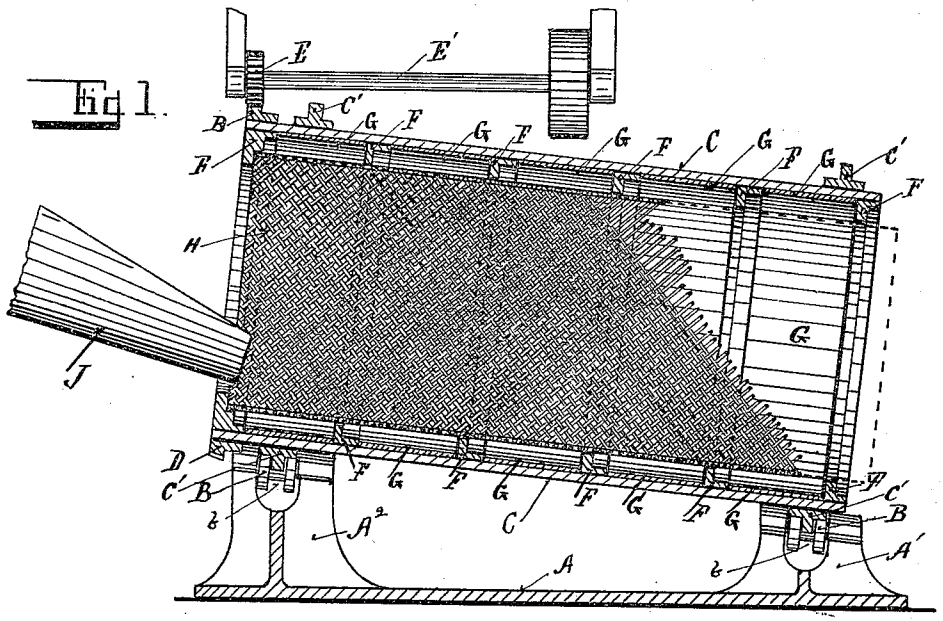
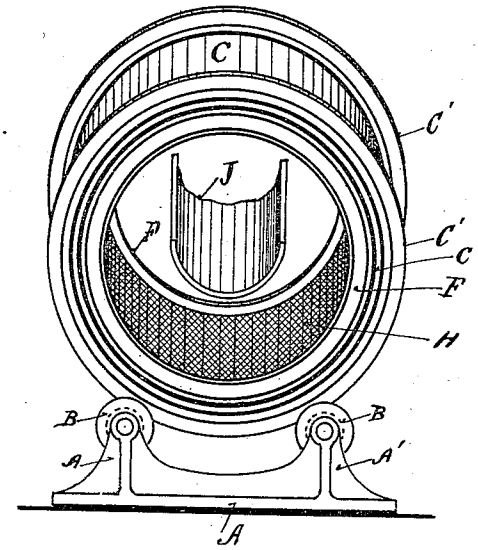


Fig 2.



Witnesses.

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WILLIAM E. BUSBY, OF McALESTER, OKLAHOMA.

AMALGAMATOR.

988,288. Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed December 17, 1909. Serial No. 533,592.

To all whom it may concern:

Be it known that I, WILLIAM E. BUSBY, a citizen of the United States, residing at McAlester, in the county of Pittsburg and State of Oklahoma, have invented certain new and useful Improvements in Amalgamators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to new and useful improvements in amalgamators used in extracting amalgamable metals from their ores, and consists substantially of a fluid tight cylindrical shell having on its inner surface annular raised ribs, between which annular amalgamator-plates resting upon the inside of the shell, are placed, together with a removable screen resting upon and supported by the raised annular ribs in the shell, to prevent material which will not pass through the screen from contacting with the amalgamating plates, and means for supporting and rotating said cylindrical structure in an inclined position so that material placed in the higher end thereof will gradually work down to and pass out of the lower end thereof.

The features of my invention are hereinafter fully set forth and explained and illustrated in the accompanying drawings in which:

Figure 1 is a vertical longitudinal section of my improved amalgamator, showing the interior arrangement of parts. Fig. 2 is a front end view of the same looking into the discharge end therein, with the driving gear removed from above the same.

In these drawings, C, indicates a hollow fluid tight cylindrical shell, preferably made of metal, which is provided near each end thereof with circumferential ribs having outwardly projecting tongues, C′, thereon. For supporting this shell, I provide a base A, having uprights, A′, and, A², thereon, the uprights, A², being higher than the uprights, A′, and in the uprights, A′, A², there are mounted rollers, B, provided with circumferential grooves, *b*, which receive the tongues, C′, on the shell, C, and operate to support the shell, C, in an inclined position and at the same time permits it to rotate readily without any endwise movement thereof.

Surrounding the shell, C, preferably at the higher end thereof I secure a spur gear, D, adapted to intermesh with a spur gear, E, upon a shaft, E′, which shaft is preferably driven by a belt operating on a pulley thereon, or in any other convenient manner, whereby the shell, C, can be rotated at such speed as may be desired.

To the inside of the shell, C, I secure a number of inwardly projecting annular ribs or rings, F, which operate to retard the travel of the water and other material passing through the shell, C, from the higher to the lower end thereof. Between these annular rings, F, I secure annular amalgamator-plates, G, of the usual type, which plates rest upon and substantially cover the inside surface of the shell, C, and operate to collect the particles of gold in the material passing through the shell, C, in the usual manner, the residue of water, sand, gravel, &c., passing onward through and out of the lower end of the shell, C, the rings F, meanwhile so delaying the traverse of the material through the shell, C, that all portions thereof are brought into contact with the amalgamator-plates, G, during its traverse through the shell.

In the inside of the shell, C, and resting upon the inner edges of the annular rings, F, I removably secure a cylindrical screen, H, which operates to prevent any coarse gravel, or other material from contacting with the amalgamator-plates, G. This screen is so secured in the shell, C, that the lower end thereof preferably projects somewhat beyond the end of the shell, C, (as illustrated by broken lines in Fig. 1) and can readily be removed when it is desired to have access to the amalgamator-plates, G, to remove and clean off the accumulated gold thereon, and again replace them in the shell, C. Projecting into the higher end of the shell, C, there is a chute, J, for supplying material thereto.

In operation the shell, C, is rotated at suitable speed upon its supporting rollers, B, by means of power applied to the shaft E′. Gold bearing material and water are then supplied through the chute, J, this material falling upon the screen, H, the finer material gradually passing through the same

into contact with the amalgamator-plates, G, where it is for a time retained by the rings F, thereby retaining the material in contact with the amalgamator-plates, G, for some time, and as fresh material is supplied it gradually works over the rings, F, until it, together with the coarser material, which will not pass through the screen, passes out of the lower end of the shell, C, and this operation is continued until it is necessary to remove and clean the amalgamator-plates, G. It is manifest that the length of the shell, C, and screen, H, may be of any length that experience may show to be desirable and necessary to extract all of the gold from the material passed therethrough.

Having thus described my invention so as to enable others to construct and utilize the same what I claim as new and desire to secure by Letters Patent is:

The combination, in an amalgamator, of a cylindrical shell, annular ribs on the inside of said shell, amalgamator-plates covering the inside of the shell between and in contact with said ribs, a removable screen within said shell resting on the annular ribs therein, and means for rotating the shell and the screen therein, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

WILLIAM E. BUSBY.

Witnesses:
M. H. HUMPHREY,
CARL MATHIS.