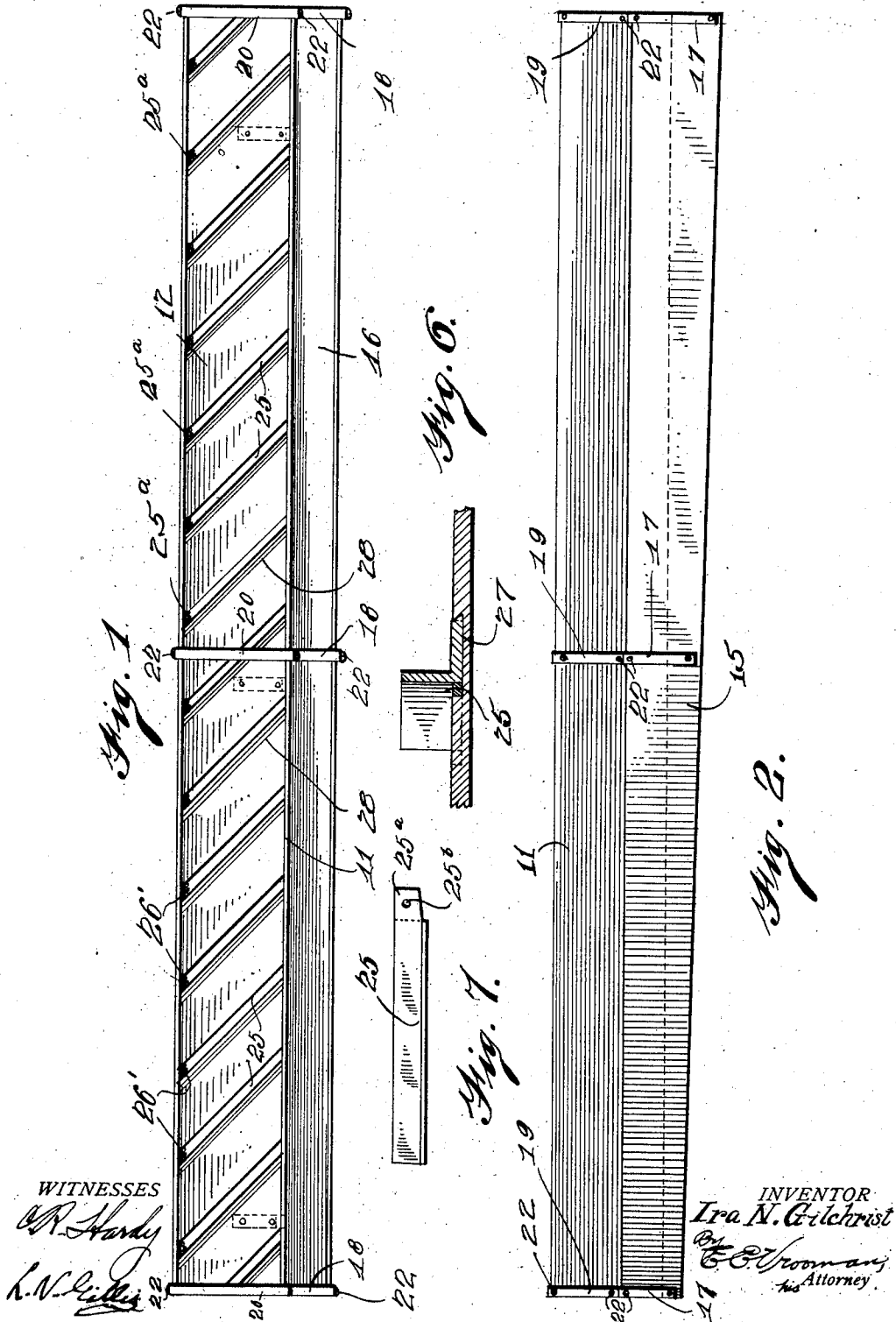


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SELF DISCHARGING RIFFLE BOX.
APPLICATION FILED JUNE 3, 1912.

1,044,373.

Patented Nov. 12, 1912.

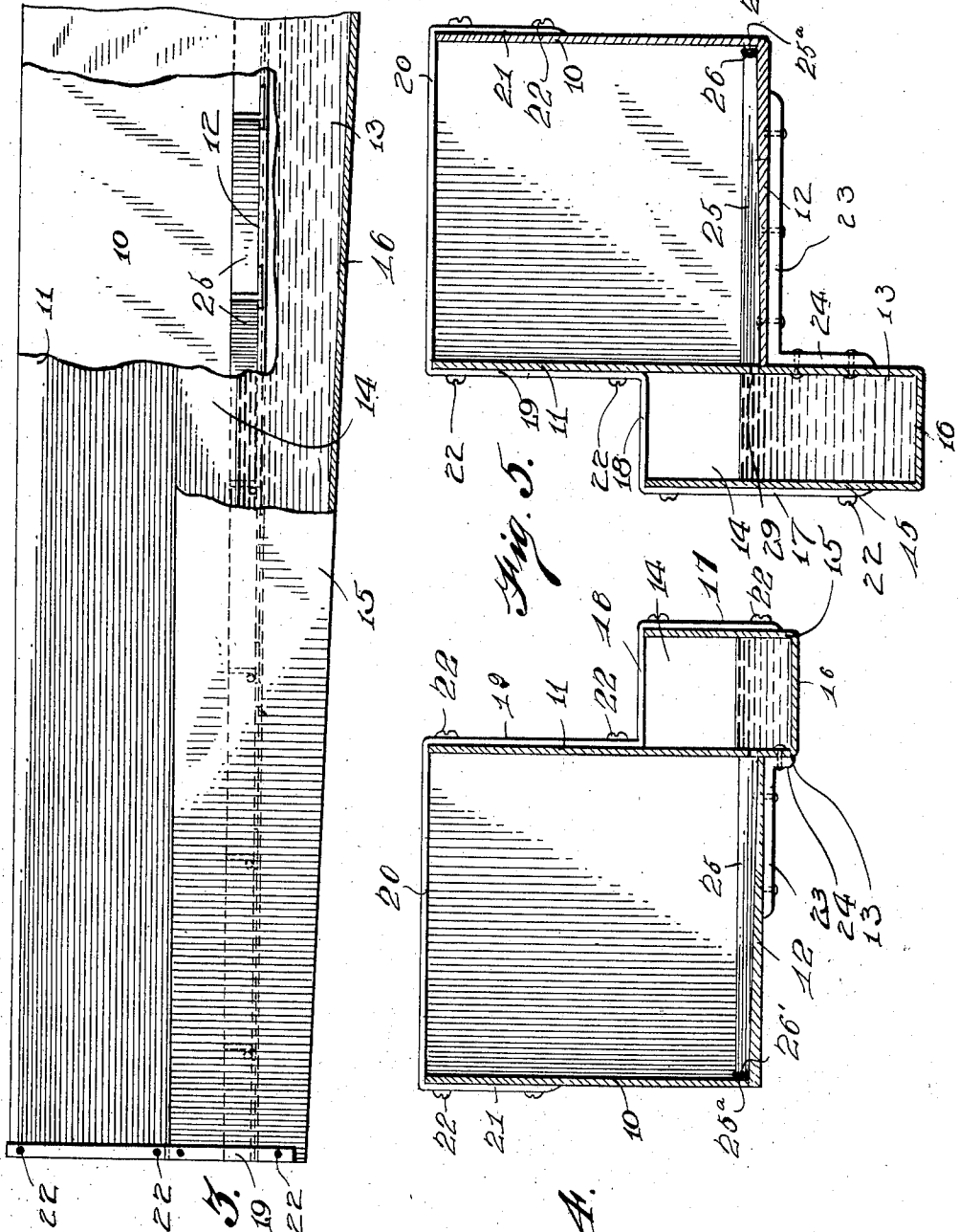
2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

IRA NUTON GILCHRIST, OF KELLOGG, IDAHO.

SELF-DISCHARGING RIFFLE-BOX.

1,044,373.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed June 3, 1912. Serial No. 701,421.

To all whom it may concern:

Be it known that I, IRA N. GILCHRIST, citizen of the United States, residing at Kellogg, in the county of Shoshone and State of Idaho, have invented certain new and useful Improvements in Self-Discharging Riffle-Boxes, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to mining machinery and has special reference to a combined riffle box and launder.

15 The principal object of the invention is to improve and simplify the general construction of devices of this character.

Another object of the invention is to provide a novel arrangement of this character wherein the ore, in pulverized condition, may be caused to pass over a series of riffles, the heavier particles falling into grooves arranged diagonally of the box so that they may be gradually washed from the riffles into the launder and there still further cleaned.

25 With the above and other objects in view this invention consists in general of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

30 In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a plan view of a riffle box constructed in accordance with this invention. Fig. 2 is a side elevation thereof. Fig. 3 is an enlarged detail side view in section, certain of the parts being broken away better to show the arrangement. Fig. 4 is a transverse section at the upper end of the box. Fig. 5 is a similar section at the lower end of the box looking in the opposite direction. Fig. 6 is a detail showing the method of holding the riffles in position. Fig. 7 is a detail view of one of the riffles one end being bent for attachment.

35 In carrying out the objects of the invention there is provided a rectangular riffle box having side walls 10 and 11 and a bottom 12. The side wall 11 extends down below the bottom 12 and forms the inner side 13 of a launder 14 provided with a second side wall 15 and a bottom 16. In order to support these parts certain brace irons are used, each of which consists of a downwardly extending portion 17 running verti-

cally on the outside of the side wall 15 of the launder. At its upper end this iron is continued directly inward as at 18 and then bent upward as at 19 to lie along the upper part of the wall 11; from thence it is carried across the top of the riffle box as at 20 and down the opposite side thereof in a terminal portion 21. It will be obvious that this brace iron is suitably secured to all the parts of the box against which it bears, being screwed or bolted thereto as indicated at 22. Extending along the underside of the bottom 12 is one leg 23 of a brace angle having the other leg 24 extending down on the outside of the side wall 13.

Running diagonally across the riffle box are riffles 25, each composed of a strip of angle iron and held in position by suitable set screws 26', passing through the holes 25^b in a bent up extension 25^a. In front of each of these riffles is a groove 28 and these grooves each terminate in an opening 29 made in the side wall 11. It is to be noted that the launder runs the whole length of the riffle box from end to end and gradually deepens with respect thereto so that the current through the launder is not only much faster by reason of its being unobstructed by the riffles but also is more rapid because of the increased height given by the sloping bottom thereof.

It is to be noted that the launder has its walls extending above the level of the groove outlets and is adapted to maintain a rapid current across said outlets in order to produce a suction through the outlets. It is also to be observed that the grooves in front of the riffles may be widened as at 27 in Fig. 6 to permit the setting of the riffles therein if desired.

95 In the operation of this invention the ore is fed in the upper end of the box and goes down over the riffles. This may be any gravity mixture of a fine mesh, such as black sands or any fine concentrates. The concentrates forming on the bottom of the riffle box feed through the grooves in front of each riffle, these grooves being deeper at the outlet end than at the opposite end, and pass out through the openings 29. By reason of this sloping bottom and the fast movement of the water in the launder a certain amount of suction is created which causes the gold to come out clean into the launder so that the device acts automatically as a self-cleaner.

There has thus been provided a simple and efficient device of the kind described, and for the purpose specified.

It is obvious that many minor changes
5 may be made in the form and construction of the invention without departing from the material principles thereof and it is therefore not wished to confine the invention to the exact form herein shown and de-
10 scribed, but it is wished to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:—

In a device of the kind described, a riffle
15 box having a series of diagonally arranged riffles extending thereacross in spaced relation, said box being provided with a bottom whereon said riffles rest, said bottom being provided with grooves extending along the
20 front of these riffles and depending toward

one end, said box being provided with a side wall rising from the bottom and having openings at the deep ends of said grooves, and a launder extending the full length of said riffle box to receive the concentrates
25 passing out of said openings, said launder having walls extending above the level of the openings at the tip ends of said grooves, said launder having a bottom inclined toward the outlet end with respect to the bot-
30 tom of the riffle box and being adapted to maintain a rapid current across said openings whereby suction is obtained at said openings.

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

IRA NUTON GILCHRIST.

Witnesses:

A. J. CHAMPAGNE,
A. F. MILLOT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."