H. W. FRY.

SLUICE BOX.

APPLICATION FILED JULY 16, 1913.

1,117,828. Patented Nov. 17, 1914.

Fig. 1.

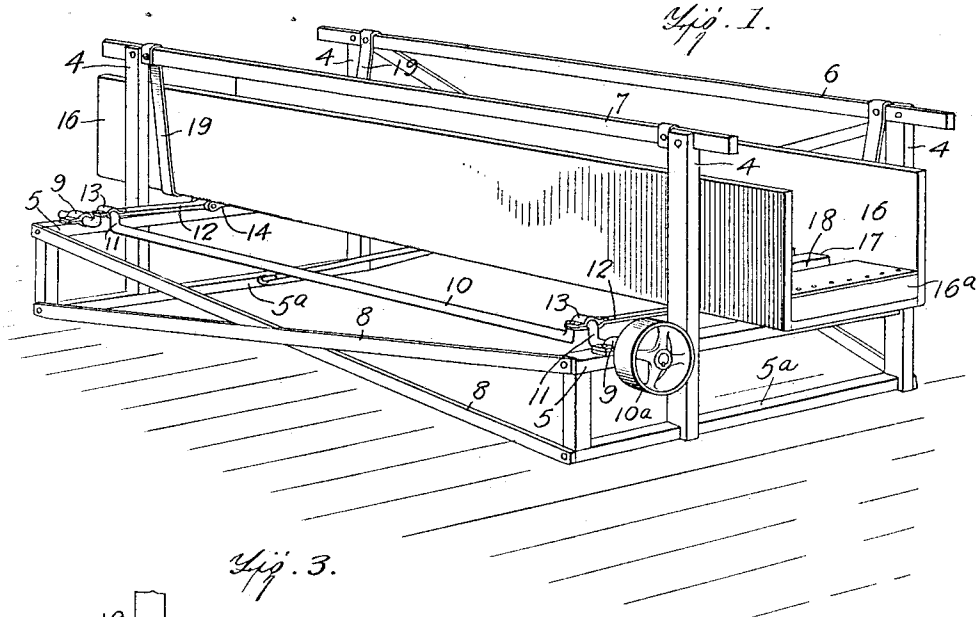


Fig. 3.

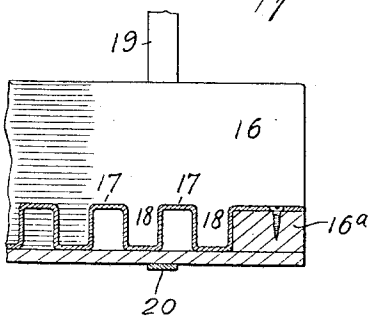


Fig. 2.

WITNESSES

L. H. Schmidt.
Walton Harrison

INVENTOR

HENRY W. FRY,
BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY WILBER FRY, OF DENNY, CALIFORNIA.

SLUICE-BOX.

1,117,828. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed July 16, 1913. Serial No. 779,331.

To all whom it may concern:

Be it known that I, HENRY W. FRY, a citizen of the United States, and a resident of Denny, in the county of Trinity and State of California, have made certain new and useful Improvements in Sluice-Boxes, of which the following is a specification.

My invention relates to sluice boxes, my more particular purpose being to produce a simple and efficient sluice box provided with means for conferring upon it a peculiar rocking motion which is very effective for separating the fines from broken or granular material, such as gold bearing sand, and crushed quartz.

Reference is made to the accompanying drawing forming a part of this specification, and in which like letters indicate like parts.

Figure 1 is a perspective of my improved sluice box complete. Fig. 2 is a substantially central vertical cross section through the mechanism showing the means for conferring upon the box, the peculiar rocking movement above mentioned. Fig. 3 is a fragmentary longitudinal section through a portion of the box, showing the riffles.

A number of posts 4 extend upwardly and are secured to frame pieces 5, 5ª. Mortised upon the tops of these posts 4 are two rails 6, 7. Braces 8 are connected with the frame pieces and serve to render the framework rigid. Two bearings 9 are mounted upon the framework and supported by these bearings is a revoluble shaft 10, preferably made of steel. This shaft is provided with cranks 11 integral with it.

A power wheel is shown at 10ª and may be of any desired pattern suitable for turning the shaft 10, and may be driven from any suitable source of power. Fitted upon the cranks 11 are bearings 13 which are carried by pitmen 12. These pitmen are connected with brackets 14 by pivot pins 15. These brackets 14 are secured rigidly to the underside of a trough-like box 16. Mounted within the lower portion of this box is a metallic plate 17 bent or corrugated as indicated in Fig. 3 or bent to form a number of pockets or ripples 18. The ends of the plate are secured upon blocks, one of which is shown at 16ª in Fig. 3. Two metallic straps 19 support the box, and for this purpose are each provided with a horizontal portion 20. The straps 19 are further provided with hooked portions 21 which partially encircle the rails 6, and are secured to the latter by fastenings 22. A link 23 having in this instance the form of a rod, is provided at its ends with eyes 24, 25, the eye 24 being connected with an eye 26 carried upon the bottom of the box 16, and the eye 25 being connected with an eye 27, the latter being secured upon one of the frame pieces 5ª.

The sand, crushed quartz, gravel, or other form of finely divided or comminuted ore is fed, along with water, into one end of the box, and as it travels along, the fines or concentrates collect in the riffles. Mercury or other appropriate amalgamating material being placed on the riffles, the precious metals are amalgamated and held within the riffles. In order to recover the concentrates or fines, the box 16 is lifted from its normal position and is inverted, the amalgam, carrying the concentrates or fines, being thus discharged.

As the straps 9 are each substantially U-shaped, and have sufficient flexibility to allow the trough or box to swing in a direction lateral to its length, and as the link 23 extends in the proximate general direction of the length of the box or trough, the swinging of the box or trough is caused by the link to describe the arc of a circle. This confers upon the material operated upon a gentle undulating side movement, more or less independent of the swinging movement of the trough. In other words the swinging movement tends to cause the material to move longitudinally of the riffles, whereas the circular movement tends to cause the material to move in directions other than the length of the riffles.

The operation of my device is as follows: The parts being assembled and arranged as described, and the ore or equivalent material being fed into the box along with a supply of water, power is applied to the shaft 10 so as to turn the same at a suitable rate of speed. This causes the box 16 to rock, the straps 19 having sufficient elasticity and flexibility for this purpose. The link 23, however, causes the box to swing, from its center, upon an arc of which the rod 23 is the radius. This gives the box a slightly curved or arcuate motion as it is rocked, and causes the precipitation of the fines or concentrates to better advantage than would be the case if the link 23 were not employed.

I do not limit myself to the precise arrangement shown, as variations may be

made therein without departing from the spirit of my invention.

I claim:—

1. A device of the character described comprising a frame provided with horizontally disposed rails, metallic straps provided with hooked portions resting upon and partly encircling said rails, each of said straps having a general U-form, a trough resting upon said straps and adapted to swing slightly by aid of the flexibility thereof, and means for conferring upon said trough a swinging motion lateral to the general direction in which said rails extend.

2. A device of the character described, comprising a frame provided with horizontally disposed rails, metallic straps provided with hooked portions resting upon and partly encircling said rails, each of said straps having a general U-shaped form, a trough resting upon said straps and adapted to swing slightly by the aid of the flexibility thereof, means for conferring upon said trough a swinging motion laterally to the general direction in which said rails extend, and means for confining said lateral motion to the arc of a circle.

HENRY WILBER FRY.

Witnesses:
GUY OYLE ROYLSTEN HISS,
MICHAEL REIDY.

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