April 17, 1945. D. S. UPHAM 2,373,931

RIFFLE

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Fig. 1.

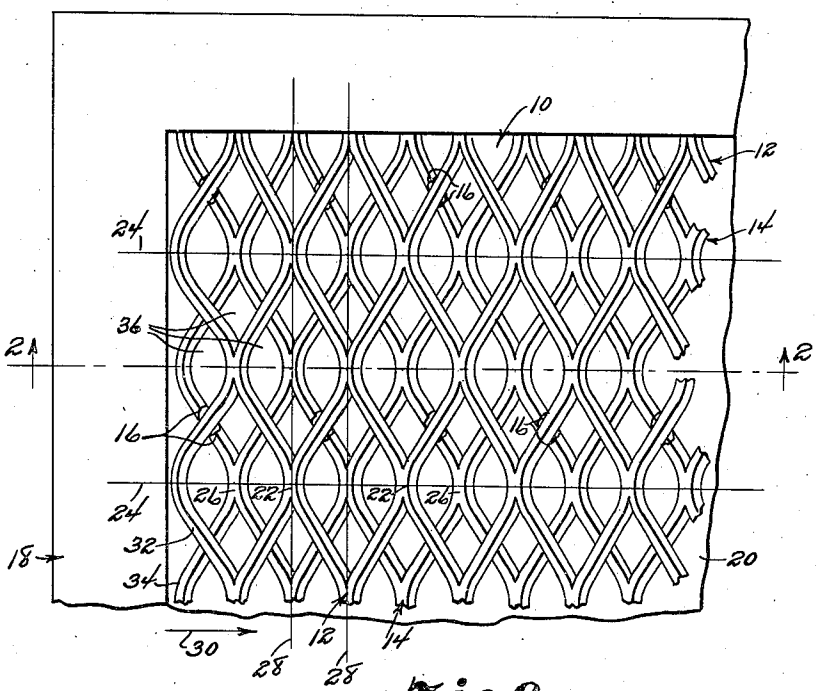
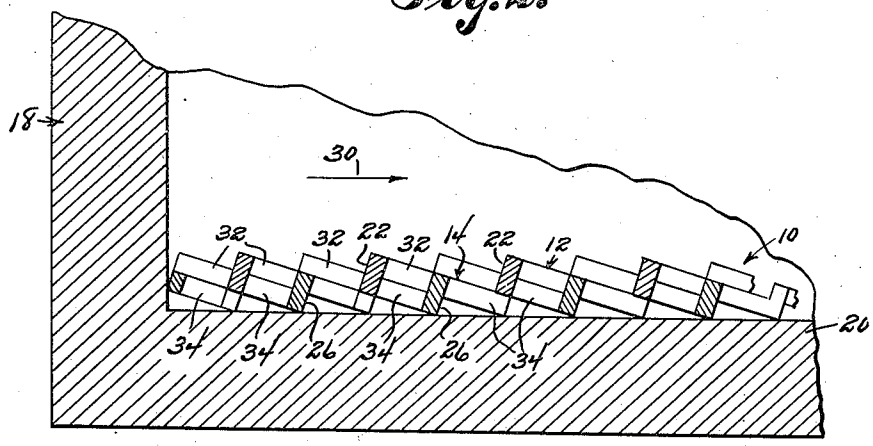


Fig. 2.



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RIFFLE

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3 Claims. (Cl. 209—458)

My invention relates to the separation of gold and other valuable metals from sand, gravel and the like, and has among its objects and advantages the provision of an improved riffle for use in sluice boxes, races and the like.

In the accompanying drawing:

Figure 1 is a plan view of a riffle in accordance with my invention; and

Figure 2 is a sectional view taken along the line 2—2 of Figure 1.

In the embodiment of my invention selected for illustration, the riffle 10 comprises two sheets 12 and 14 of expanded metal placed face to face and welded into a unitary structure, as at 16. One corner portion only of the riffle is shown in the drawing, but the construction is the same throughout the entire area of the riffle. A corresponding fragment 18 of a sluice box is also shown, the riffle 10 lying on the box bottom 20.

In Figure 1, the uncut portions 22 of the sheet 12 are spaced equal distances one from the other along the lines 24, this being true also of the uncut portions 26 of the sheet 14. Both uncut portions 22 and 26 are respectively spaced equal distances one from the other along the lines 28, and the sheets 12 and 14 are so arranged as to alternately position the portions 22 and 26 on the respective lines 24 and 28.

According to Figure 2, the portions 26 rest on the bottom 20, and the portions are of rectangular contour with their major axes arranged upright at acute angles to the bottom 20. The portions 22 are of the size and contour as the portions 26, as well as inclined in the same direction and degree, but these portions are spaced from the bottom 20. The water flows in the direction of the arrow 30, so that the fluid mixture impinges against the acute angle faces of the uncut portions 22 and 26 and the ribs 32 and 34 interconnecting the portions 22 and 26, respectively.

A riffle in accordance with my invention provides a network of uncut portions 22 and 26, ribs 32 and 34 and a system of interstices 36 which operate to separate, catch and retain the valuable metal in an efficient manner. The riffle is exceptionally durable and easily and cheaply constructed in all necessary sizes and lengths.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A riffle comprising similar sheets of metal each cut and expanded to provide ribs and uncut portions interconnecting the ribs, said sheets disposed face to face with the ribs of one sheet crossing the ribs of the other sheets, and contacting parts of said sheets secured together one to the other so that said sheets form a substantially integral unit, said uncut portions being rectangular in cross section with their major axes arranged at acute angles to planes of their respective sheets.

2. A riffle comprising similar sheets of metal each cut and expanded to provide ribs and uncut portions interconnecting the ribs, said sheets lying face to face in contacting relationship with the ribs of one sheet crossing and secured to the ribs of the other sheets, such securing means for the sheets one to the other forming a substantially unitary, integral, and reversible unit of the sheets, and a sluice means carrying the riffle, said uncut portions having upstream faces lying at acute angles to the planes of their respective sheets.

3. In apparatus of the character described, a sluice box having a flat floor surface, and a riffle laying upon the floor surface, said riffle comprising a pair of expanded metal screens each having relatively long divided ribs expanded in V-shaped formation and intermediate shorter uncut portions in staggered arrangement, said uncut portions being of elongated rectangular cross section and inclined to the plane of the screens and the floor surface, the contacting portions of said screens being rigidly secured one upon the other with the uncut portions of one screen disposed centrally of the expanded ribs of the other, the uncut portions of the lowermost screen resting on the floor surface of the sluice box and the uncut portions of the upper screen assuming a position raised above said surface a distance corresponding to approximately one-half the longitudinal cross sectional dimension of said portions.

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