Feb. 2, 1960 F. TSCHMELITSCH 2,923,410

PORTABLE FLEXIBLE SLUICE BOX

Filed April 29, 1957

FIG. 1.

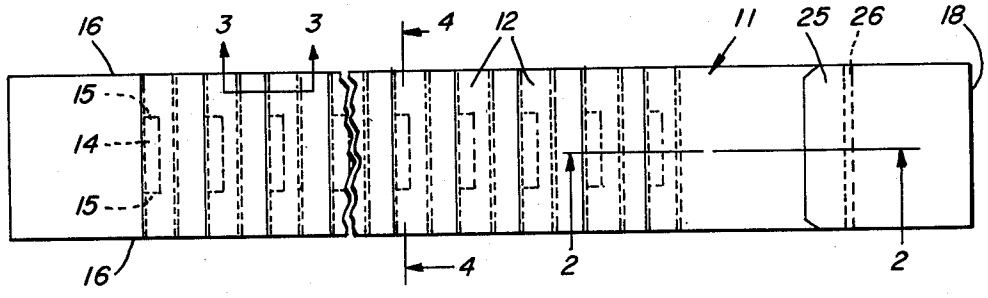


FIG. 2.

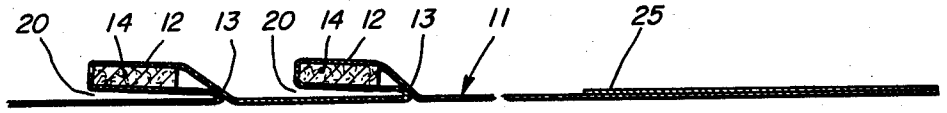


FIG. 2A.



FIG. 3.

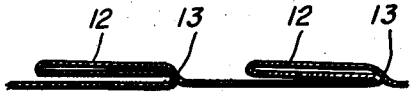


FIG. 4.

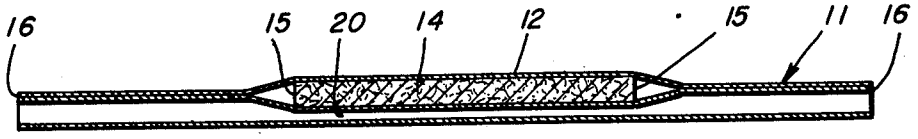
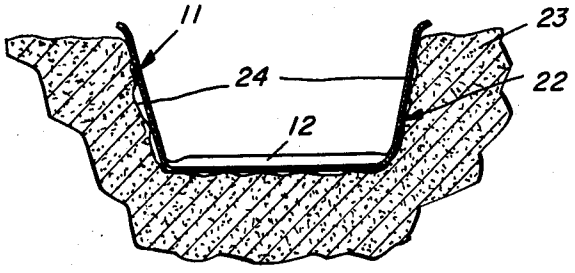


FIG. 5.



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PORTABLE FLEXIBLE SLUICE BOX

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5 Claims. (Cl. 209—506)

This invention has to do with sluices or sluice boxes such as are used in placer mining and prospecting.

Conventional sluices are usually constructed of wood or wood and metal and are consequently heavy, cumbersome, and difficult to transport, either assembled or disassembled, over the rugged terrain encountered in placer mining and prospecting. Conventional sluices, therefore, are unsuitable for use by persons who operate on a small scale, such as hobbyists who can only devote limited time to prospecting.

An object of my invention is to provide a novel, lightweight, highly portable sluice device.

A further object is to provide a sluice device of the type indicated which can be collapsed and folded into a small unit, rendering the device especially suitable for hobbyists.

Another object is to provide such a device which is flexible and thus adaptable to various types of terrain, including terrain where a conventional sluice could not be set up. In this connection it is an object to provide a device which is adapted to be supported by the ground itself within a ditch formed therein.

Still another object of the invention is to provide a device which is adjustable as to width so that it can be shaped to compensate for the amount of water available for the operations.

A further object is to provide a device of the type indicated which has integral riffles of novel construction and an integral gate or dam portion.

Still another object is to provide a relatively inexpensive device which can be economically manufactured and sold.

These and other objects will be apparent from the drawing and the following description. Referring to the drawing:

Fig. 1 is a plan view showing a device embodying the invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1, but on an enlarged scale;

Fig. 2A is a fragmentary view similar to Fig. 2 showing a riffle in reverse position;

Fig. 3 is a fragmentary sectional view on line 3—3 of Fig. 1, but on a larger scale;

Fig. 4 is a transverse sectional view on line 4—4 of Fig. 1, but on a larger scale; and,

Fig. 5 is a sectional view transversely through the device showing it supported in a ditch in the ground in one manner as a trough-like liner therefor in which it may be used.

Referring in more detail to the construction of the device, numeral 11 designates a flexible sheet member which is elongated and for convenience may be rectangular in shape. This is preferably made of water-impervious material such as one of the so-called flexible, tough plastics.

The sheet member 11 is provided with a plurality of riffles 12 formed as transversely extending tucks or pleats spaced longitudinally of the member 11 and laterally with respect to each other. Each riffle is formed by doubling the material upon itself and securing it in the region 13 by any suitable means, such as cement. Where the material of the member 11 is a thermoplastic substance, the parts may be united in the regions 13 by the application of heat and pressure.

In order to have riffles of suitable thickness, I provide a filler 14 in each riffle. The filler preferably extends only partially across the sheet 11, as best shown in Fig. 1, so that the ends 15 terminate in spaced relation to the side edges 16 of the sheet member 11. However, if desired, the fillers may extend the full width of the member 11. Various materials may be used as fillers and I have found that a spongy plastic is suitable.

By referring to Fig. 2, it will be seen that in their normal position the riffles 12 project downstream with reference to the head end 18 of the device. Also, it should be noted that each riffle provides with the adjacent portion of the sheet member a pocket or space 20 thereunder in which to entrap the heavier particles, that is, "values" or ores having relatively high specific gravity.

In the use of the device any suitable means may be used for supporting the device with the longitudinal side portions thereof folded up in the shape of a trough between as best shown in the cross-sectional view, Fig. 5, where the device is shown supported in a ditch 22 formed in the ground 23. It will be apparent from this that the riffle-like tuck or pleat members 12 extend at least across the floor of the sluice between the longitudinal side portions which are bent upwardly to form sides 24. Where it is impracticable to provide the device as a liner for a ditch, boards, stones and other objects can be used to support the device in the shape of a trough. Being extremely flexible, the device does not need to be disposed in a straight line but may be in a curved or zigzag shape as required by local terrain.

After sluicing has been completed, the cleanup operation can be easily carried out since the individual riffles can be readily tilted backward as shown in Fig. 2A to expose the pocket areas 20. Also, in this connection, I provide an integral dam or gate flap 25, secured at 26 to the sheet 11 in any suitable manner, by means of which I can control the flow of water.

Although I have shown and described a preferred form of my invention, I contemplate that various changes and modifications can be made without departing from the scope thereof as indicated by the claims.

I claim:

1. A portable sluice forming and/or lining device comprising an elongated, normally flat, water-impervious sheet member, said member being formed to provide a plurality of transversely extending tucks or pleats forming riffles closely spaced longitudinally along the member and normally overlying adjacent portions of the member in a common direction, said riffles being manually reversible to expose the normally overlain portions of the member, said sheet member being longitudinally foldable inwardly of each side thereof to provide a trough for support in a ditch in the ground or the like.

2. A sluice forming and/or lining device for placer mining and the like, comprising an elongated normally flat foldable water-impervious sheet member having longitudinally foldable side portions, said member being provided on one side thereof with a plurality of transversely extending tucks or pleats, said pleats being of increased thickness between the foldable side portions thereof to overlie the adjacent portions of that member and provide therewith ore receiving pockets.

3. A sluice-forming device as set forth in claim 2, in which the thickened portion of each tuck or pleat comprises a filler member.

4. A sluice-forming device as set forth in claim 2 in which the sheet member is formed of a plastic material.

5. A sluice-forming device as set forth in claim 2 in which the filler member is a resilient material.

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