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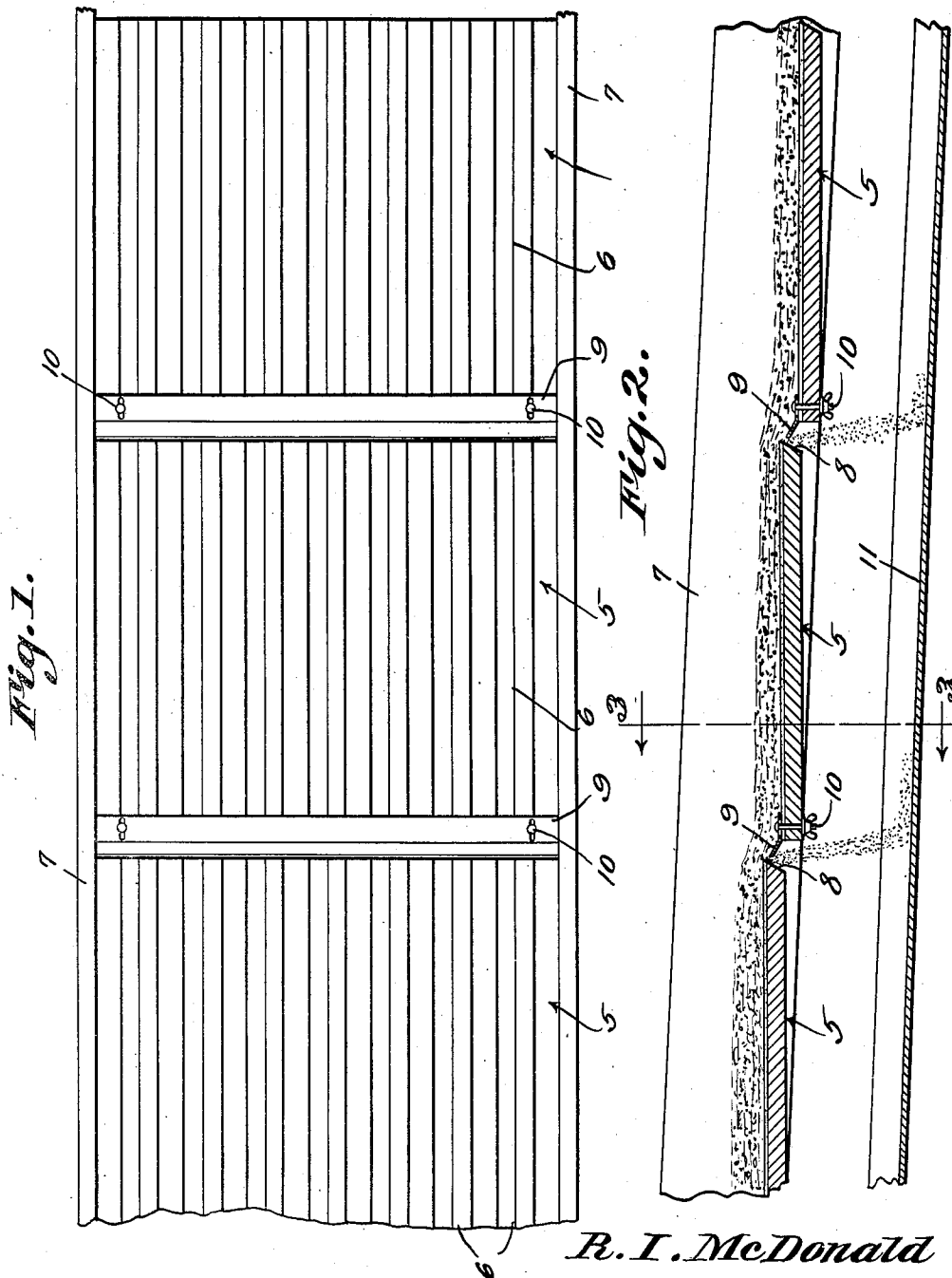
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2,228,607

SLUICE RIFFLE

Filed March 24, 1939

3 Sheets-Sheet 1



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*Fig. 3.*

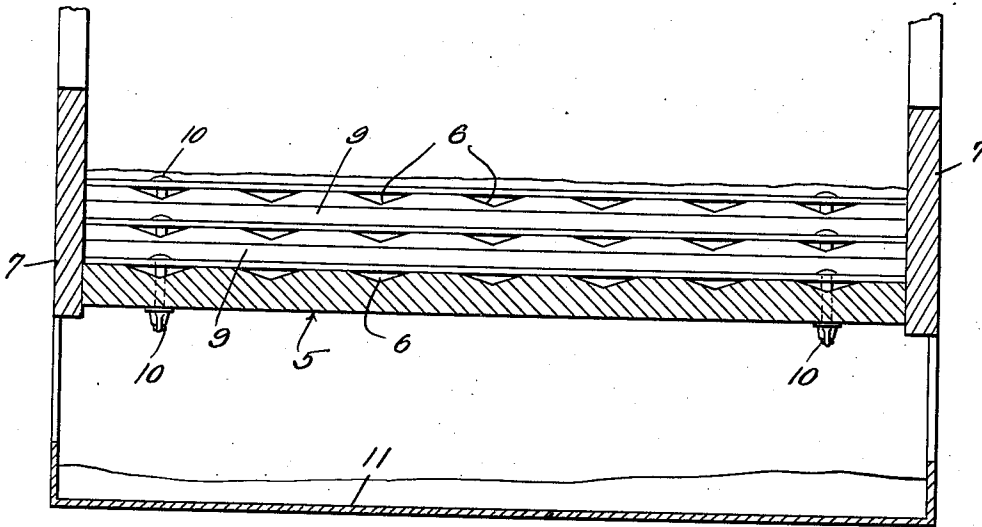
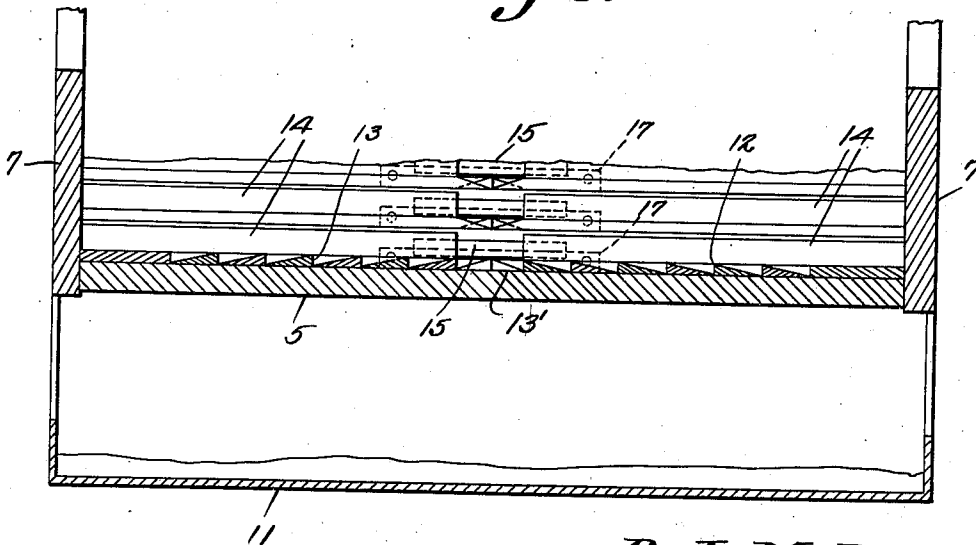


*Fig. 6.*



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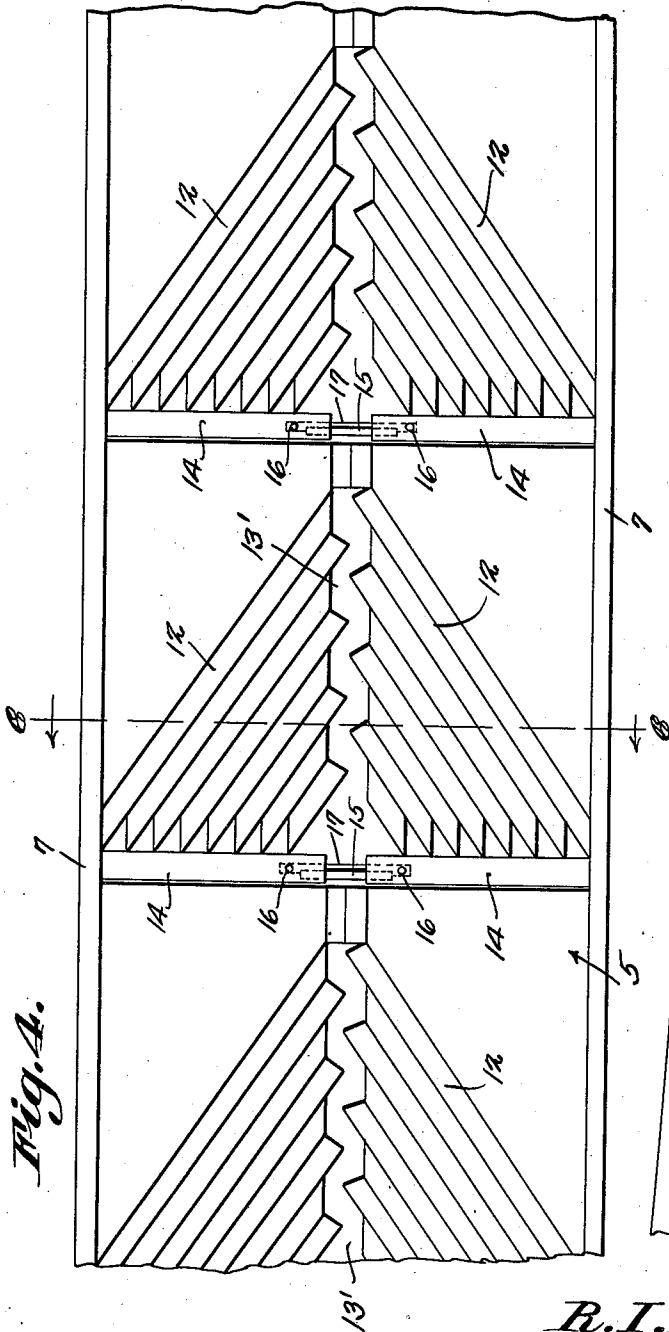
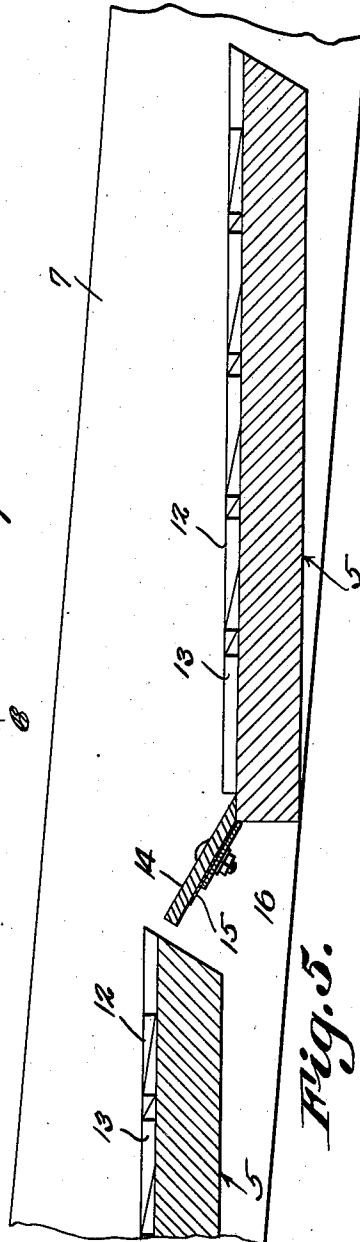
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## UNITED STATES PATENT OFFICE

2,228,607

## SLUICE RIFFLE

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2 Claims. (Cl. 209-458)

This invention relates to sluice riffles, the primary object of the invention being to provide means whereby the riffle may be adjusted to adapt it for use in riffing materials having various degrees of specific gravity.

Another object of the invention is to provide a sluice riffle of the type which will treat a concentrated product having a higher specific gravity than the bulk of the original material, to separate the material of high specific gravity, in a continuous operation.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a plan view of a riffle constructed in accordance with the invention.

Figure 2 is a sectional view taken on line 2-2 of Figure 1.

Figure 3 is a transverse sectional view taken on line 3-3 of Figure 2.

Figure 4 is a plan view of a modified form of riffle surface.

Figure 5 is a longitudinal sectional view taken on line 5-5 of Figure 4.

Figure 6 is a transverse sectional view taken on line 6-6 of Figure 4.

Referring to the drawings in detail, the sluice bottom is indicated by the reference character 5, the bottom being made up of a plurality of independent sections, the adjacent ends of the sections being spaced apart as clearly shown by Figure 2 of the drawings. The upper surfaces of these sections are formed with longitudinal V-shaped grooves 6 through which the material having a higher specific gravity than the bulk of the original material, passes in flowing over the riffle.

These riffle sections, of which the bottom is formed, are secured to the side members 7 which guard the side edges of the sections of the riffle, to confine the material passing over the riffle, to the sluice bottom.

It will of course be understood that the sluice box is supported in the usual way, so that the sluice bottom over which the material moves, is inclined, the material gravitating to the bottom of the sluice box.

As clearly shown by Figure 2 of the drawings, the lower edge of one section of the sluice bot-

tom, is slightly elevated and spaced from the upper edge of the adjacent lower sluice bottom section, the lower edges of the sluice bottom sections being beveled as at 8. Mounted on each bottom section, and arranged adjacent to the upper edge thereof, is an adjusting plate 9, the plates being of lengths to extend the entire width of the bottom of the sluice box. As shown, each of these plates is formed with elongated openings for the reception of the bolts 10, which bolts also extend through the bottom sections, so that by loosening the bolts, the adjusting plate may be moved to adjust the free edge thereof with respect to the lower edge of the adjacent upper bottom section, widening or narrowing the space between the adjusting plate and adjacent upper bottom section, adapting the sluice box for use in treating various grades of material. These adjusting plates 9 extend upwardly at oblique angles with respect to the bottoms of the sections, presenting inclined surfaces over which the material passes.

From the foregoing it will be seen that material gravitating over the bottom of the sluice box, will pass over the adjusting plates 9, and material of high specific gravity, will fall downwardly between the free edges of the adjusting plate 9 and adjacent lower edges of the upper bottom sections, where the material will fall into the launder 11 supported directly thereunder.

In the modified form of the invention as illustrated by Figures 4, 5 and 6 of the drawings, each bottom section of the sluice box is provided with angularly disposed riffle plates 12, the riffle plates 12 having their upper surfaces beveled towards the outer edges thereof, providing wide shoulders 13 against which the material contacts in flowing over the bottom of the sluice box.

In this form of the invention, each bottom section of the sluice box is formed with a longitudinal passageway 13' into which material passes in flowing over the bottom of the sluice box.

In the construction of the sluice box, the sections of which the bottom is constructed, are arranged so that the lower edge of the adjacent upper sections are elevated slightly with respect to the upper edges of the adjacent lower sections, and spaced apart. The space between the sections of the sluice box bottom, are partially closed by the inclined plates 14 which have their inner ends spaced apart providing a space directly opposite to the discharge ends of the passageways 13. In order that the sluice box may be used in treating materials of various specific gravities, the spaces at the discharge ends of the passageways 13 may be regulated as to width, and with

this end in view, I have provided an adjusting plate 15 which is held in position on the plate 14, by means of bolts 16 which extend through registering openings in the plates 14 and 17, the plates 17 clamping the plates 15 against the lower surfaces of the plate 14. Thus it will be seen that by loosening the bolts, the plates 15 may be extended, and since these plates 15 are disposed adjacent to the spaced ends of the plates 14, the width of the space may be adjusted.

It might be further stated that these rifle plates 12 cause the material passing through the sluice box, to have a boiling action to separate the various grades of material in the mass, according to the specific gravity of the materials.

From the foregoing it will be seen that due to the construction shown and described, concentrate can be drawn off in a continuous operation, eliminating the necessity of cleaning riffles in a batch operation, and thus increasing greatly the volume of material that can be run through the sluice box.

What is claimed is:

1. A sluice box including an inclined body portion, a bottom for the sluice box, said bottom comprising a plurality of spaced bottom sections,

said bottom sections being upwardly inclined in the direction of flow of the material passing through the body portion, the discharge end of each section being above the adjacent end of the adjacent section, and an adjustable upwardly inclined plate between the adjacent ends of the sections whereby the widths of the spaces between the adjacent ends of the sections, are regulated.

2. A sluice box including an inclined body portion, a bottom for the sluice box, said bottom comprising a plurality of spaced bottom sections, said bottom sections being upwardly inclined in the direction of flow of the material passing through the body portion, the upper surfaces of the sections having grooves formed therein, the discharge end of each section being above the adjacent end of the adjacent section, an upwardly inclined plate secured to one end of each section and having elongated openings, bolts disposed within the openings adjustably mounting the plates, said plates extending into the spaces between the adjacent sections, restricting the flow of material through the spaces between said sections.

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