

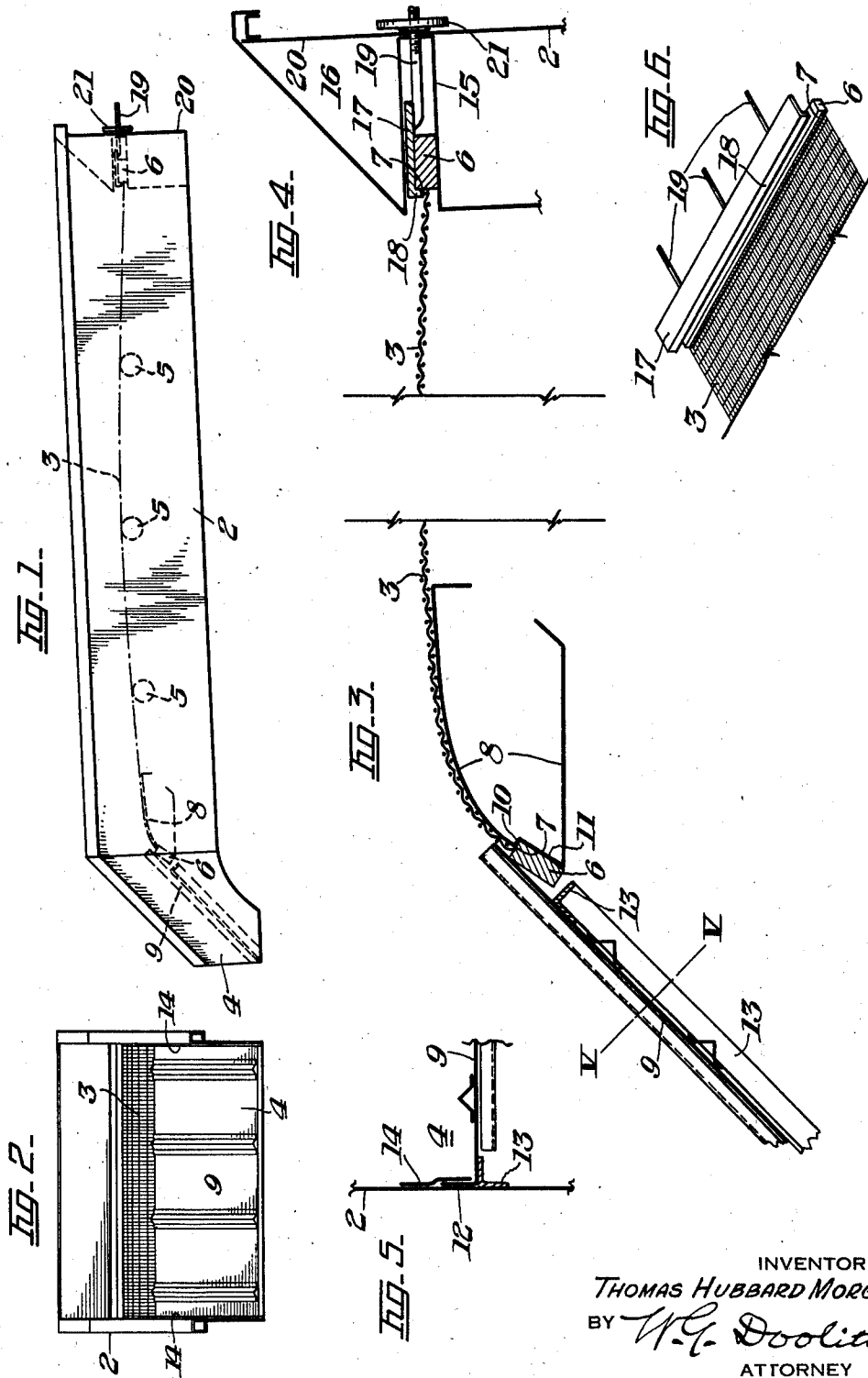
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SCREEN APPARATUS

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SCREEN APPARATUS

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5 Claims. (Cl. 209—403)

This invention relates to a new and improved screen apparatus employed in separating, grading and sizing materials and particularly embodies new and improved means for mounting the screen cloth employed in such apparatus.

In the grading and sizing of materials, it is highly important that the screen cloth be properly tensioned in use, and that it also be quickly removable to permit replacement thereof without delay, as for example, when screening as a step in a continuous material treatment process.

My invention contemplates an improved screen structure of the character stated, a mounting and attachment for the screen cloth, wherein the cloth may be easily and quickly applied to the screen frame or body, and readily removed therefrom, said mounting also providing the requisite adjustability for tensioning the cloth in use.

Additional features and advantages of the invention may be more readily understood from the following description, taken in connection with the accompanying drawing, wherein:

Fig. 1 is a side elevational view of a material separating screen embodying my invention;

Fig. 2 is an end view thereof, viewed from the discharge end of the screen;

Fig. 3 is an enlarged longitudinal sectional view taken through the discharge end of the screen, showing the manner of mounting one end of the screen cloth;

Fig. 4 is a view similar to Fig. 3, showing the manner of screen cloth mounting at the head end of the screen;

Fig. 5 is a cross-section taken on the line V—V of Fig. 3; and

Fig. 6 is a perspective view of the attaching means of Fig. 4.

Referring to the drawing, 2 designates generally the frame of a material-separating screen device upon which is mounted a screen cloth 3, the screen frame 2 being suitably supported in a manner (not shown), to be shaken or vibrated as is customary for screening action of the cloth upon the material supplied thereto.

The screen illustrated is of the type wherein the over-size material remaining on the screen cloth is discharged from an end thereof as by a discharge spout or chute 4, the material which passes through the mesh of the cloth being separately collected or supplied to another screen, as the case may be.

In applying the screen cloth mounting to such a screen, I prefer to extend the screen cloth 3 longitudinally of the frame 2, said cloth being

supported intermediate its ends by spaced transverse tubular supports 5 having proper vertical relation to impart the desired longitudinal curvature to the cloth.

In connection with the anchoring and tensioning of the screen cloth, I preferably employ a cloth having reenforced edges or edge strips 6, said strips having sufficient thickness to provide a transverse abutment or shoulder 7 on either side of the cloth. Such an edging may be provided by casting a metal strip upon the screen cloth or by various kinds of metal binding clamped thereto, as will be readily understood.

In applying such a screen cloth, one end having a strip 6 is laid over a supporting bulkhead or support 8 adjacent the discharge end of the screen, said bulkhead usually having a downward curvature toward the inclined plane of the bottom or floor 9 of the discharge chute or spout 4.

For anchoring the screen cloth at said bulkhead, I provide the latter with a cooperating transverse abutment or shoulder 10 for engagement by a shoulder 7 of the cloth edge 6. The abutment 10 is preferably formed by providing a depression or step 11 in the face of the bulkhead whereby the edge 6 of the screen cloth may be readily laid therein for anchoring engagement.

The step or depression 11 is preferably disposed slightly below the angular plane of the spout bottom 9, whereby the screen cloth edge 6 may be accommodated therebetween. Spout bottom member 9 is slidably mounted by side flanges 12 as in Fig. 5, and hence may be moved to cover or uncover the step 11 in the bulkhead 8. 13 designates supporting guides for the member 9, and 14 indicates slide-ways or guides for the flanges 12 thereof.

In this manner, the chute 4, and more particularly its bottom member 9, serves to secure the member 6 of screen cloth 3 in engagement with its cooperating anchoring abutment 10, and affords a ready means of permitting disengagement of the screen cloth when it is desired to remove the same.

At the head end of the screen device, the other reinforcing edge strip 6 is received upon a transverse support 15, preferably beneath an overhanging inclined hopper-like frame member 16, thereby enclosing the support 15. 17 designates a transverse bar or adjustable tensioning member having a hook flange 18 for engaging an abutment or shoulder 7 of the cloth edge 6. The space between the support 15 and member 16 is just sufficient to slidably accommodate the bar 17 and its engaged edge strip 6, whereby the

flange 18 is retained in engagement with said cloth edge.

A plurality of longitudinally extending studs 19 are secured to the bar 17 and project through the head end 20 of the screen frame or body 2, and are provided with threaded handwheels or the like 21 for exerting a tension on the screen cloth longitudinally of the screen device.

In applying the screen cloth 3, the tension-adjusting members 21 may be loosened to permit engagement of the flange 18 of member 17 with the screen edge 6, and the screen then tensioned against the fixed anchorage of the other end of said cloth at the discharge end of the device.

It will be noted that I have provided a simple, inexpensive and time-saving anchorage and tensioning device for a removable screen cloth, which will enable rapid changes to be made in the operation of screening equipment.

Various changes and modifications are contemplated within the scope of the following claims.

I claim:

1. In a screen device, a screen cloth having a reenforcing strip along one edge thereof having a thickness to provide a shoulder on one side of the cloth, an anchorage for the screen cloth at the discharge end of the device including a fixed abutment engageable by the shoulder of said strip, a discharge spout having a portion movable in an inclined plane in relation to said abutment to selectively maintain the strip in engagement with said abutment, and means for exerting a tension on the opposite edge of the screen cloth.

2. In a screen device, a screen cloth having a reenforcing strip along one edge thereof having a thickness to provide a shoulder on one side of the cloth, an anchorage for the screen cloth at the discharge end of the device including a fixed abutment engageable by the shoulder of said strip, a discharge spout movable in an inclined plane in relation to said abutment to selectively maintain the strip in engagement with said abutment, said screen cloth having a reenforcing strip along its opposite edge having a shoulder, a member engaging said last-mentioned shoulder strip, and adjustable means for moving said member to tension the screen cloth.

3. In a screen device including a supporting

frame, a transverse bulkhead adjacent the discharge end of the device having a downwardly curved portion and a transverse abutment thereon, a screen cloth extending over the curved portion and having a reenforcing strip along one edge thereof engageable with the abutment, a slidable discharge spout movable in an inclined plane adjacent the bulkhead and movable over the abutment to maintain the strip in engagement therewith, said screen cloth having a second strip along its opposite edge, a transverse support for receiving said second strip, a movable member having transverse engagement with said second strip to move the strip on the support in a direction to tension the screen cloth, and adjustable means for moving said member.

4. In a screen device including a supporting frame, a bulkhead adjacent the discharge end of the device having a downwardly curved portion and step recess formed therein including an abutment extending transversely of the frame, a supporting member at the head end of the frame, a movable member associated with said support and having an abutment extending transversely of the frame, a screen cloth extending over the curved portion and having opposite edge reenforcing strips, one of said strips entered in the bulkhead recess in engagement with its abutment and the other strip positioned on said supporting member in engagement with the abutment of the movable member, a movable discharge spout adjacent the bulkhead having a portion thereof slidable in an inclined plane over said bulkhead recess, and adjustable means for moving said movable member, as and for the purpose described.

5. In a screen device including a supporting frame, a bulkhead adjacent the discharge end of the device having a downwardly extending portion formed with a recess, a screen cloth extending over the bulkhead and having a strip adapted to be entered in the recess, an inclined elongated discharge spout adjacent the bulkhead having a portion movable in an incline plane towards and away from the said recess to selectively maintain the strip in the recess, said screen cloth having a reinforcing strip at its opposite end, and horizontally movable tensioning means for the screen cloth engaging said latter strip.

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