Aug. 7, 1928. 1,679,757

F. M. ANDERSON ET AL

SAND GRADING DEVICE

Filed June 5, 1926

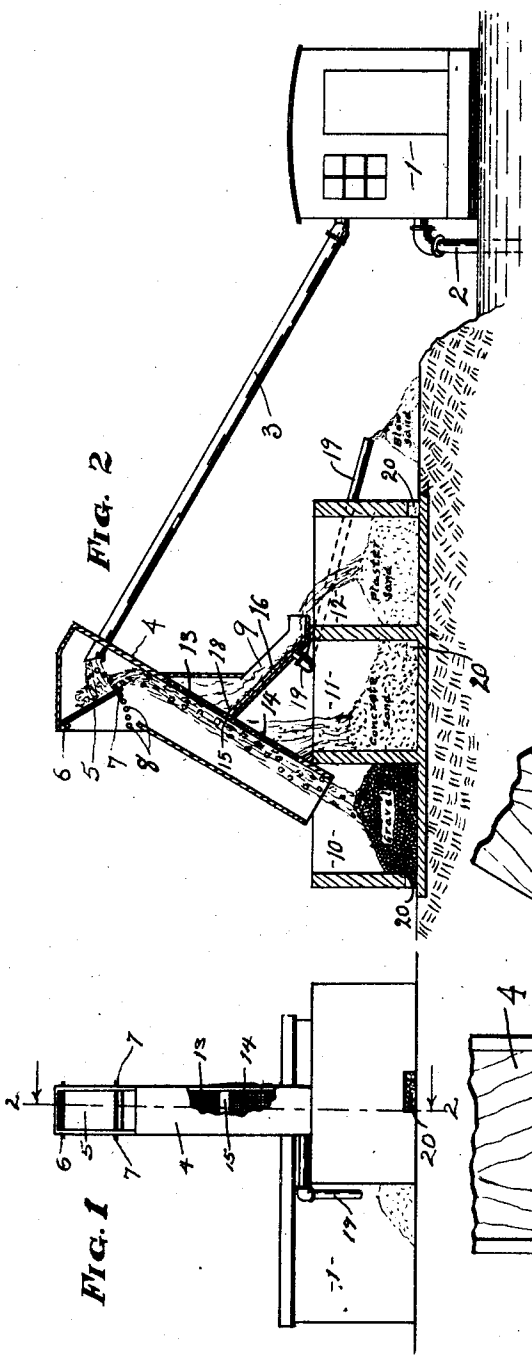


FIG. 2

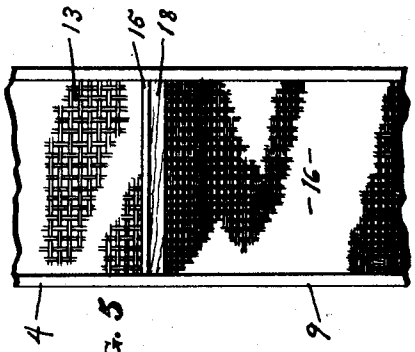


FIG. 5

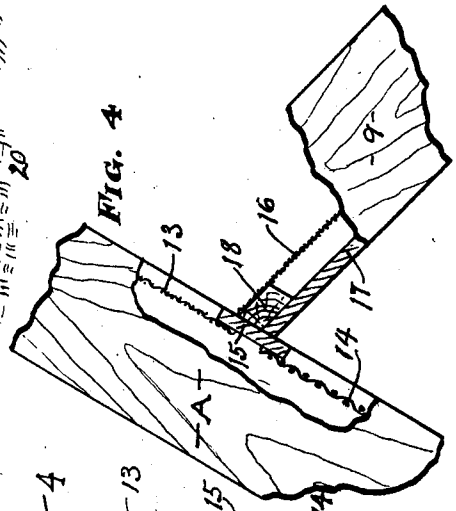


FIG. 4

FIG. 1

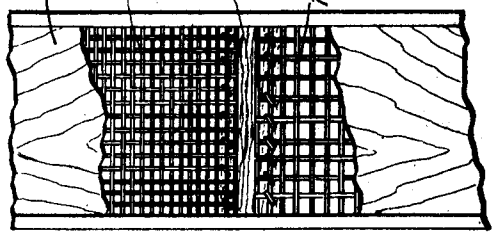


FIG. 3

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UNITED STATES PATENT OFFICE.

FRANK M. ANDERSON AND CHESTER O. ANDERSON, OF ST. JOSEPH, MISSOURI.

SAND-GRADING DEVICE.

Application filed June 5, 1926. Serial No. 113,892.

Our invention relates to a sand grading device, and has for its chief object to grade the sand as it is pumped from the river bed.

A further object of our invention is to provide means for separating the sand into three or more grades.

A still further object of our invention is to remove from the sand that portion that is too fine for concrete or plaster purpose, commonly known as blow sand.

A still further object of our invention is to provide a mechanism that will deposit the grades of gravel or sand in separate compartments simultaneously.

A still further object of our invention is to provide a baffle distributing means for the aggregate to pass evenly over or through the screens.

These and other objects will hereinafter be more fully explained.

Referring to the drawings:

Fig. 1 is a front elevation of the mechanism, parts removed for convenience of illustration.

Fig. 2 is a cross section taken on line 2—2 in Fig. 1.

Fig. 3 is an enlarged detailed fragmentary view of the main chute, parts removed for convenience of illustration.

Fig. 4 is a transverse view partly broken away of Fig. 3 showing a rearwardly extending trough and screen.

Fig. 5 is a rear view of Fig. 4.

The mechanism herein disclosed consists of a pump house 1 positioned within a stream. The said house has a power means installed therein actuating a pump to raise water and sand through a dredge pipe 2, discharging the same through a pipe 3 into the upper extremity of a chute 4. The said chute has a pivotally connected baffle plate 5 swinging from the upper edge as at 6, the lower edge stationarily supported by a rod 7; the ends of which are adapted to engage in apertures 8 as supporting means for the desired slant of the plate; said apertures being in the sides of the chute and in an arcuated position, the radius of which is positioned at the pivot point 6.

The object of the baffle plate is to discharge the aggregate on a solid portion of the bottom of the trough above the series of screens so that the flow of the substance (which is sand and water) is evenly distributed over the screened panels hereinafter described.

Laterally extending from the underside of the chute 4 is a chute 9, the last said chute having sides and a panel of screen spaced from the bottom, for the purpose later described.

Beneath the chutes and in working relation thereto are a plurality of bins designated by numerals 10, 11 and 12. In the bottom and upper end of the chute 4 is a panel of wire screening 13 being of fine mesh and in close proximity thereto and in alignment therewith is a panel of wire screening 14 of larger mesh. The said panels are separated by a cross bar 15 as supporting means for the adjacent ends of the screening and connecting means for a laterally extending chute. The side edges of the screen are supported by the sides A of the chute. The screen 13 being of small mesh will allow the water and the finer portions of the sand to pass therethrough and deposit on a screen 16 of a still smaller mesh which is spaced from the bottom 17 by a bar 18, as the sand and water passing through the screen 13 pass over the screen 16 in their downward course the water and blow sand will pass through the last said screen and be conveyed from the chute near the lower end thereof by means of a pipe 19. The portion of sand passing over the screen will deposit in the bin 12, which sand is appropriate for wall plaster. That portion of sand that will not pass through the screen 13 will pass through the screen 14 depositing in the bin 11, graded as concrete sand. That portion of the sand that is too large to pass through the screen 14 will deposit in the bin 10 and is of such size to be called gravel.

It will be understood that the chutes may be of greater length to permit the installation of other screening of different mesh by which means other grades of sand may be had. In such arrangement other bins will be provided to receive the respective grades. As the water flows freely with the sand it naturally deposits in the different bins; therefore we have provided openings 20 positioned near the bottom of each bin so that the accumulation of water will flow freely therethrough.

The mechanism herein disclosed is a simple means for separating the sand and

gravel as it is pumped from the stream bed. Being so graded and housed it is very convenient to load the purchaser with the grade he desires. Furthermore the sand and gravel is well washed in the process.

Such modifications may be employed as lie within the scope of the appended claim.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

In a sand grading device, a chute having screened openings in the bottom as distribution means for the graded sand and an extension on the upper end thereof in which to pivotally connect a baffle plate and means to stationarily place the angle of the plate relative to the longitudinal plane of the chute so that the discharge from a pumping plant will be spread thereby to equally distribute on the bottom of the chute in its downward travel, a chute laterally extending from the under side of the first said chute to register with the upper screened opening, a screening spaced from the bottom of last said chute, a spout registering between the last said screening and the bottom of the last said chute as conveying means for silt, fine sand or the like from the graded sand, all as, and for the purpose described.

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