

No. 776,269.

PATENTED NOV. 29, 1904.

S. R. STILL.

SCREENING APPARATUS.

APPLICATION FILED SEPT. 24, 1903.

NO MODEL.

Fig. 1.

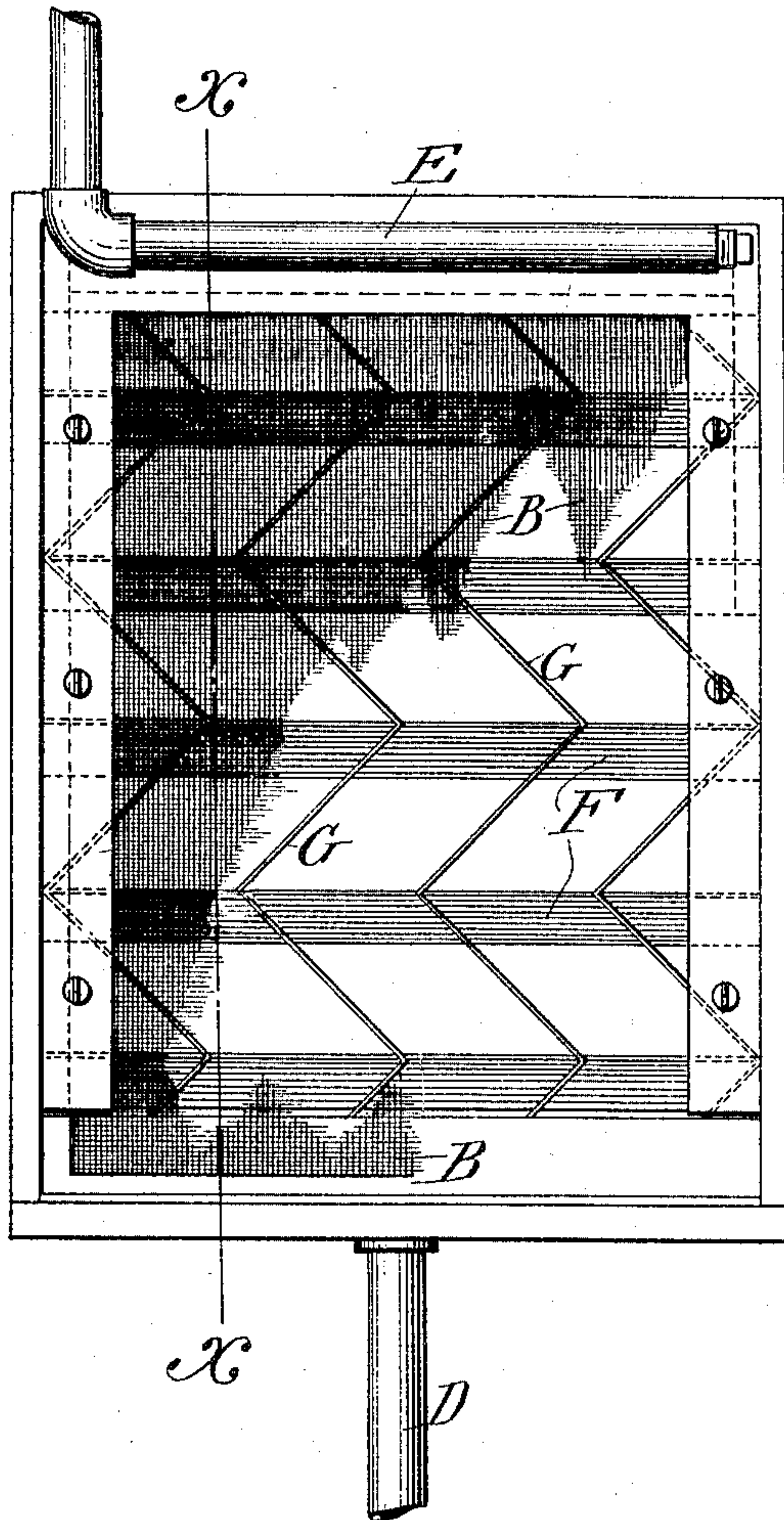
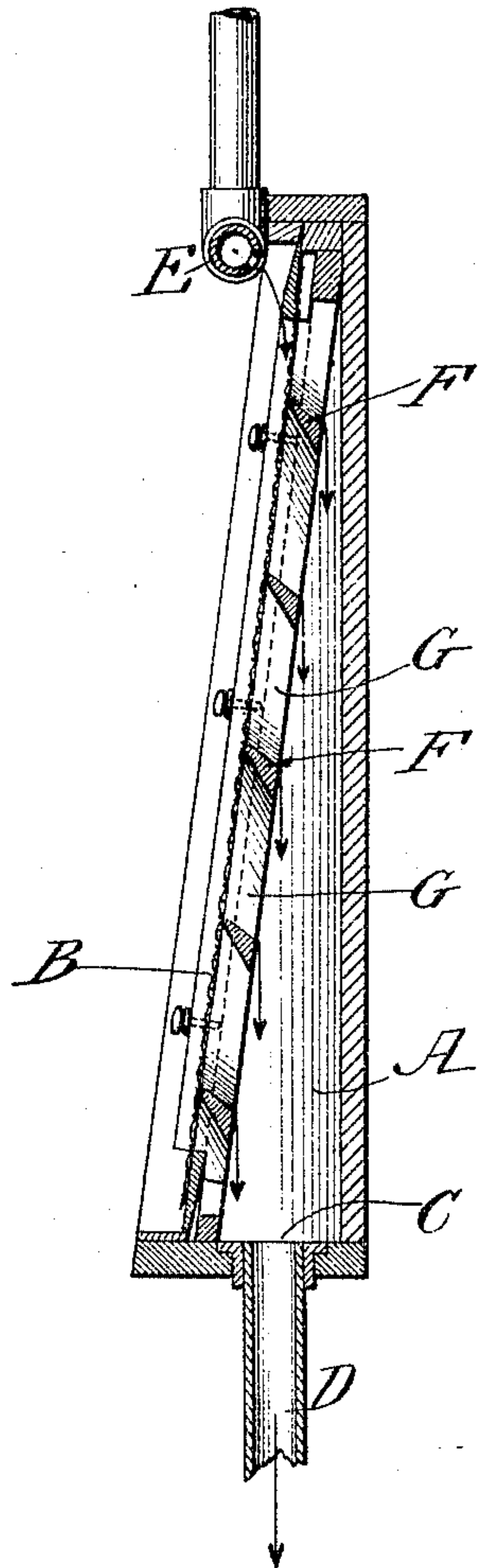


Fig. 2.



Witnesses

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SCREENING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 776,269, dated November 29, 1904.

Application filed September 24, 1903. Serial No. 174,408. (No model.)

To all whom it may concern:

Be it known that I, STANLEY R. STILL, a citizen of the United States, residing at Carlisle, Cumberland county, State of Pennsylvania, have invented a new and useful Improvement in Screening Apparatus, of which the following is a specification.

My invention consists of improvements in screening apparatus of that class employing a substantially upright screen of fibrous material, and has for its object to provide a construction by which the efficiency of the screening operation is increased.

My invention further consists of the features of construction hereinafter fully described and claimed.

Figure 1 is a front elevation of a screening apparatus constructed in accordance with my invention. Fig. 2 is a vertical section thereof, taken on line *x x*.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, in the class of screening apparatus to which my invention relates a box A is employed, over the one open side of which is stretched a screen B, of fibrous material, preferably silk of the finest mesh. At the lower end of this box is an outlet-port C, communicating with the outlet-pipe D. The material to be screened is fed thereto suspended in water by means of a feed-pipe E, extending transversely across the upper end of the screen and having a plurality of small openings, so as to supply the material across the entire face of the screen. Except for the interstices through the fibrous screen and outlet-port C the box A is closed, and the screen B stands in substantially an upright position, being preferably a little inclined, with the lower end in advance.

Although it is obvious that a screen of this class can be employed in separating and screening various materials and in different arts, it is especially applicable in the art of separating clay. In this art the crude clay and water are mixed to form slip, and after the very coarse particles have been removed the slip is supplied by the pipe E to the face of this upright screen of fibrous material,

which allows the finest particles of the clay and the water in which it is suspended to pass through the screen in the box A, while the larger particles of grit, silica, and other deleterious matters pass across the screen and off from the lower end thereof. To secure the best results in the separation of these finest particles of an even grade, it is obvious that the inclination of the silk screen should be the same throughout—that is to say, the screen throughout should be in as near the same plane as it is possible to secure it in view of the nature of the material of which it is formed and the use to which it is subjected. To secure this end, I support this screen B from within. In a screen of this construction it is usual to employ transverse deflectors F to lead the material suspended in water that passes through the screen away from the inner face thereof at intervals; but even with these transverse deflectors it has been found that the screen bulges inwardly between each pair of deflectors F, so as to form a plurality of concave surfaces extending across the front face of the screen. This of course makes the angle of the screen just below a deflector different from the angle of the screen just above the deflector next below, which causes a different grade of material to pass through these portions of the screen of different angularity. To overcome this, I employ upright supports G, extending between the deflectors F from the upper to the lower end of the screen, the same being preferably disposed parallel at intervals throughout the screen with their front edges in the same plane. These front edges being sharp do not reduce the screen area, yet serve to maintain the screen B in practically the same plane throughout. Besides serving to hold the screen in practically the same plane I employ these upright supports for another purpose—that is, to deflect the path of the water and suspended material as it crosses over the face of the screen. By doing this the material suspended in water is kept upon the face of the screen a longer period than if it passed in a straight path, so that a greater opportunity is afforded the finer particles of clay to pass through the

screen. These means for deflecting the passage of the water and suspended material can be variously arranged, and as a convenient embodiment I have selected these supports G, 5 which are set in zigzag fashion, which obviously will cause the water and suspended material to pass in zigzag path down the front face of the screen.

Although the longitudinal deflectors of the 10 supports G are shown as arranged in zigzag fashion, yet it is understood that my invention is not limited to this specific circuitous arrangement, as others may be employed so long as such arrangement causes the material 15 passing across the front face of the screen to pass in a deflected or circuitous path, that the path in which it passes across the front face of the screen is greater than if it passed directly from top to bottom in a straight path.

20 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An upright screen of fibrous material, having means situated at the back thereof for 25 deflecting the path of the material passing across the front face thereof in combination with means for feeding over the face of the screen a thin stream of liquid containing such material.

30 2. A screen of fibrous material, provided with transverse and longitudinal deflectors set at intervals in contact with the back thereof in combination with means for feeding over the face of the screen a thin stream of liquid 35 containing the material to be screened.

3. An upright screen of fibrous material, having longitudinal deflectors in contact with the back thereof for deflecting the material 40 passing over the front face of the screen in combination with means for feeding over the face of the screen a thin stream of liquid containing such material.

4. A screen of fibrous material, having longitudinal circuitous deflectors in contact with 45 the back thereof in combination with means

for feeding over the face of the screen a thin stream of liquid containing the material to be screened.

5. A screen of fibrous material, having longitudinally-disposed zigzag deflectors in contact 50 with the back thereof in combination with means for feeding over the face of the screen a thin stream of liquid containing the material to be screened.

6. A screen of fibrous material having means 55 in contact with the back thereof for causing the material to be screened to pass across the face thereof in a circuitous path, in combination with means for feeding over the face of the screen a thin stream of liquid containing 60 such material.

7. An upright screen of fibrous material having transverse deflectors at the back thereof and diagonally-disposed supports between 65 said deflectors, said deflectors and said supports being in contact with the back of said screen in combination with means for feeding over the face of the screen a thin stream of liquid containing the material to be screened.

8. An upright screen of fibrous material 70 having transverse deflectors at the back thereof and zigzag supports between said deflectors, said deflectors and said supports being in contact with the back of said screen in combination with means for feeding over the face of 75 the screen a thin stream of liquid containing the material to be screened.

9. An upright screen of fibrous material having transverse deflectors at the back thereof and a plurality of parallel zigzag supports 80 between said deflectors, said deflectors and said supports being in contact with the back of said screen in combination with means for feeding over the face of the screen a thin stream of liquid containing the material to be screened. 85

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Witnesses:

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