July 25, 1933. L. E. SOLDAN 1,919,485

SCREENING APPARATUS

Filed Oct. 1, 1928 2 Sheets-Sheet 1

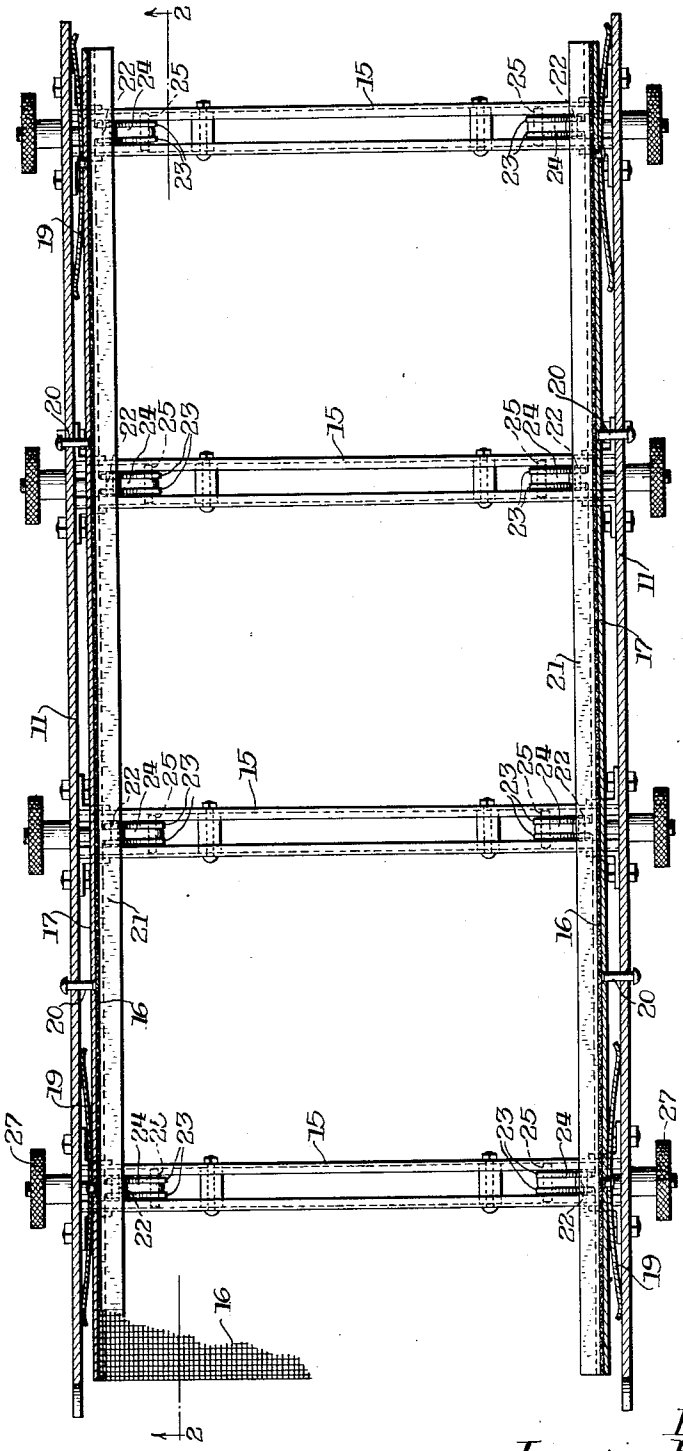


Fig. 1.

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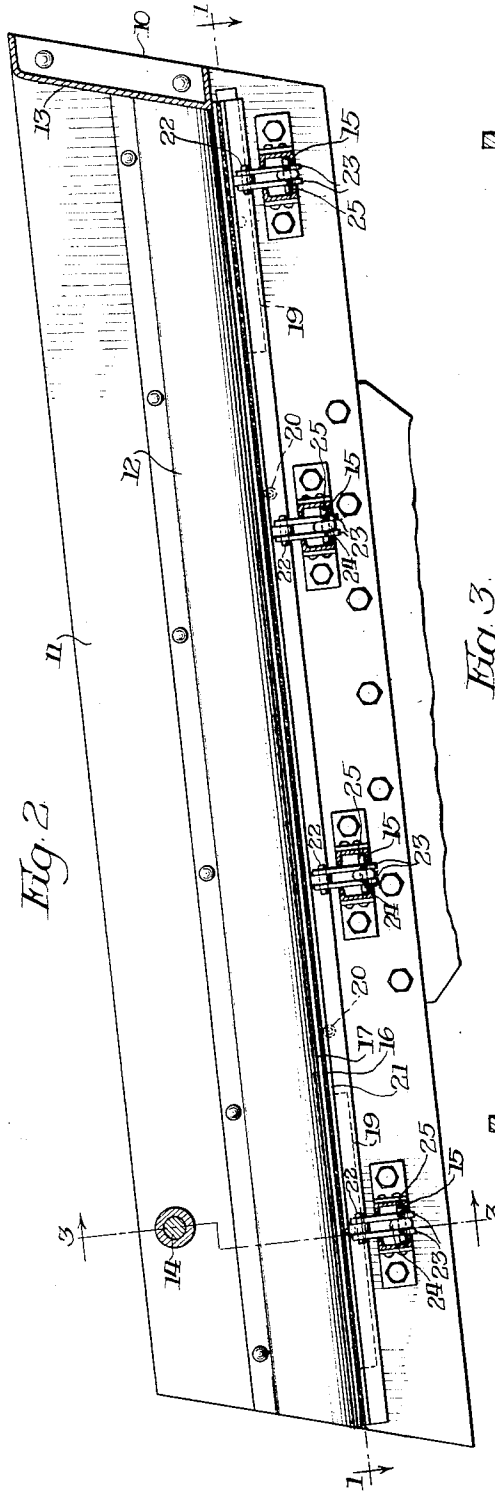


Fig. 2

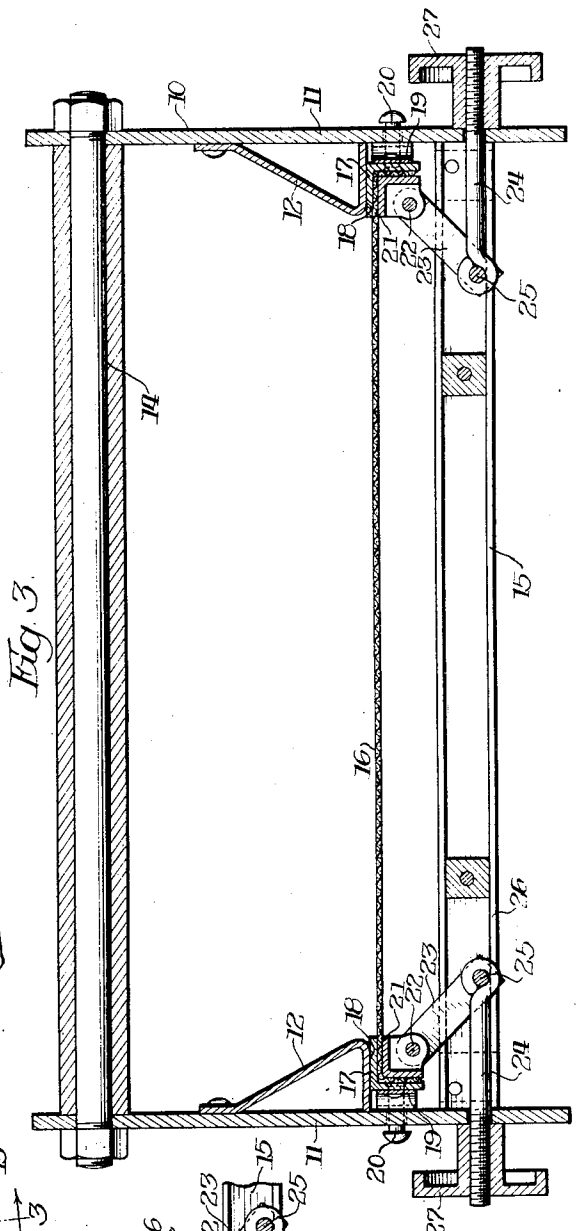


Fig. 3

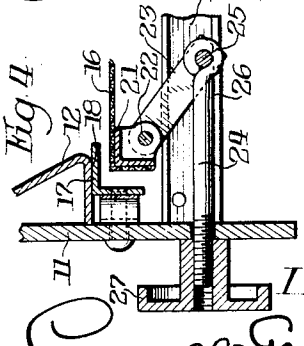


Fig. 4

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UNITED STATES PATENT OFFICE

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SCREENING APPARATUS

Application filed October 1, 1928. Serial No. 309,405.

The present invention has to do with screening apparatus, and is particularly concerned with the manner in which the wire cloth is fastened in position in such apparatus.

The principal object of the invention is to provide an improved device by means of which the wire cloth in a screening apparatus may be quickly and securely fastened in position under tension and readily re-tensioned from time to time.

Another important object of the invention is to provide a device of the character described which is extremely inexpensive to manufacture, is very easy to manipulate, and is equally applicable to different types of screening apparatus.

Other objects and advantages of the invention will be evident to those skilled in the art upon a full understanding of the construction, arrangement and operation of the improved fastening device.

One form of the invention is presented herein for the purpose of exemplification, but it will of course be appreciated that the invention is susceptible of embodiment in other structurally modified forms coming equally within the comprehensive scope of the claims.

In the accompanying drawings:

Fig. 1 is a substantially horizontal section through a screening apparatus equipped with the fastening device of the invention, taken on the line 1—1 of Fig. 2;

Fig. 2 is a vertical longitudinal section through the screening apparatus, taken on the line 2—2 of Fig. 1;

Fig. 3 is a vertical transverse section through the screening apparatus, taken on the line 3—3 of Fig. 2; and

Fig. 4 is a fragmentary view, corresponding to a portion of Fig. 3, showing the fastening device before the wire cloth is tensioned.

The screening apparatus shown in the drawings includes an inclined rectangular frame 10 which is composed of two side plates 11, two side shields 12 secured to the side plates, an end plate 13 secured to the upper ends of the side plates, a cross brace 14 connecting the lower ends of the side plates above the side shields, and a number of cross members 15 connecting the side plates below the side shields.

A wire cloth 16, which is positioned in the frame, constitutes the screening element of the apparatus. The present invention resides in the hereinafter described means for both fastening the wire cloth in position and tensioning the same.

Two angle strips 17 are arranged in spaced relation to the side plates 11 of the frame immediately beneath downwardly facing shoulders 18 presented by the side shields 12. The angle strips 17 are separated from the side plates 11 by resiliently compressible leaf springs 19 and are limited as to separation by headed studs 20.

Two other angle strips 21 are nested within the angle strips 17, and the side edges of the wire cloth are disposed between the angle strips 17 and 21, being bent downwardly as shown in order to conform with the shape of the same. The angle strips 21 are pivotally attached at 22 to the upper ends of inclined toggle links 23, and the lower ends of the toggle links are connected to the inner ends of rods 24 by pins 25 which ride upon inturned flanges 26 of the cross members 15, which cross members are of double channel formation for that purpose. The outer ends of the rods 24 are threaded and project through apertures in the side plates 11 into threaded engagement with hand wheels 27 which bear against the outer surfaces of the side plates.

In fastening the wire cloth 16 in the frame 10, the hand wheels 27 are first unscrewed and pushed inwardly in order to allow the angle strips 21 to move downwardly and inwardly away from the angle strips 17, as shown in Fig. 4, thereby making room for the insertion of the side edges of the wire cloth. If desired, the side edges of the wire cloth may be bent downwardly before insertion and then slid between the spaced angle strips from either end of the frame.

After the wire cloth has been approximately positioned in the manner above described, with the side edges of the same between the angle strips, the hand wheels 27 are screwed

up. The initial movement of the rods 24 under the action of the hand wheels serves to clamp the angle strips 21 tightly against the angle strips 17 on the side edges of the wire cloth, and the subsequent movement of the rods serves to force the angle strips as a unit tightly up against the shoulders 18 on the side shields and outwardly along said shoulders as far as necessary in order to impart the desired degree of tension to the wire cloth.

I claim:

1. In a screening apparatus, a frame, a wire cloth, and means for fastening the wire cloth in position in the frame comprising strips resiliently yieldable toward the sides of the frame, other strips movable into clamped relation with the first mentioned strips with the edges of the wire cloth therebetween, and single operating means for first moving the second mentioned strips into clamped relation with the first mentioned strips whereby to grip the edges of the wire cloth therebetween and for then moving the first and second mentioned strips together toward the sides of the frame whereby to tension the wire cloth.

2. In a screening apparatus, a frame, a wire cloth, and means for fastening the wire cloth in position in the frame comprising angle strips resiliently yieldable toward the sides of the frame, other angle strips movable into nested relation with the first mentioned angle strips with the edges of the wire cloth therebetween, and single operating means for first moving the second mentioned angle strips into such nested relation whereby to clamp the edges of the wire cloth and for then moving the first and second mentioned angle strips together toward the sides of the frame whereby to tension the wire cloth.

3. In a screening apparatus, a frame, a wire cloth, and means for fastening the wire cloth in position in the frame, comprising spaced parallel strips for engagement with the side edges of the wire cloth, spaced parallel members against which the edges of the wire cloth are adapted to be pressed by the strips, and upwardly and outwardly inclined toggle links pivotally connected with the strips for forcing the same upwardly and outwardly against the members whereby to both clamp the edges of the wire cloth and draw the same taut.

4. In a screening apparatus, a rigid frame having fixed downwardly facing shoulders at the sides thereof, a wire cloth positioned in the frame beneath the shoulders, floating means for gripping the side edges of the wire cloth, and means carried by the frame adjacent the sides thereof for forcing the gripping means upwardly toward the shoulders and outwardly toward the sides of the frame with an equalization of pressure in both directions.

5. In a screening apparatus, a rigid frame having spaced parallel sides, a rectangular wire cloth, and means for fastening the wire cloth in position in the frame comprising two spaced parallel angle strips having horizontally and vertically extending surfaces carried by the sides of the frame, two other spaced parallel angle strips having horizontally and vertically extending surfaces movable into nested relation with the first mentioned angle strips with the side edges of the wire cloth between such surfaces, and means for moving the second mentioned angle strips away from each other in a direction inclined to the horizontal into such nested relation whereby to clamp the edges of the wire cloth between both the opposed horizontal surfaces and the opposed vertical surfaces.

6. In a screening apparatus, a rigid frame having fixed downwardly facing shoulders at the sides thereof, a wire cloth positioned in the frame beneath the shoulders, means for gripping the edges of the wire cloth, guides extending from one side of the frame to the other beneath the cloth, inclined toggle links pivotally connected at their upper ends to the gripping means and slidably mounted at their lower ends on the guides, rods slidably mounted in the sides of the frames and pivotally connected at their inner ends to the lower ends of the toggle links, and hand wheels threaded on the outer ends of the rods for drawing the lower ends of the toggle links toward the sides of the frame whereby to cause the toggle links to force the gripping means upwardly and outwardly beneath the shoulders.

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