

No. 858,706.

PATENTED JULY 2, 1907.

W. R. CUNNINGHAM.

SCREEN.

APPLICATION FILED APR. 13, 1907.

Fig. 1.

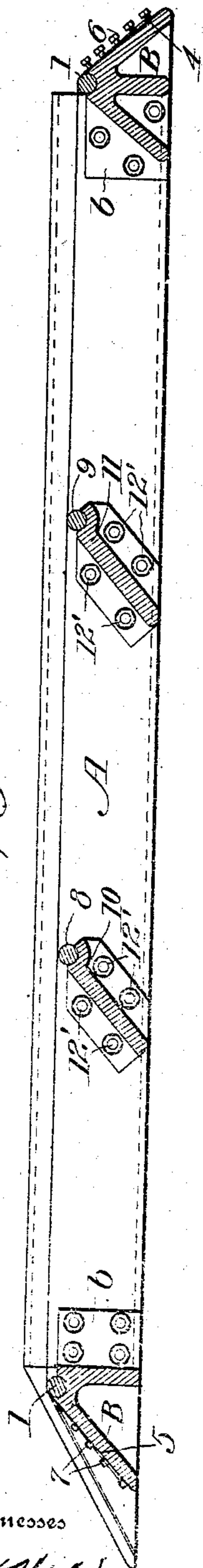


Fig. 2.

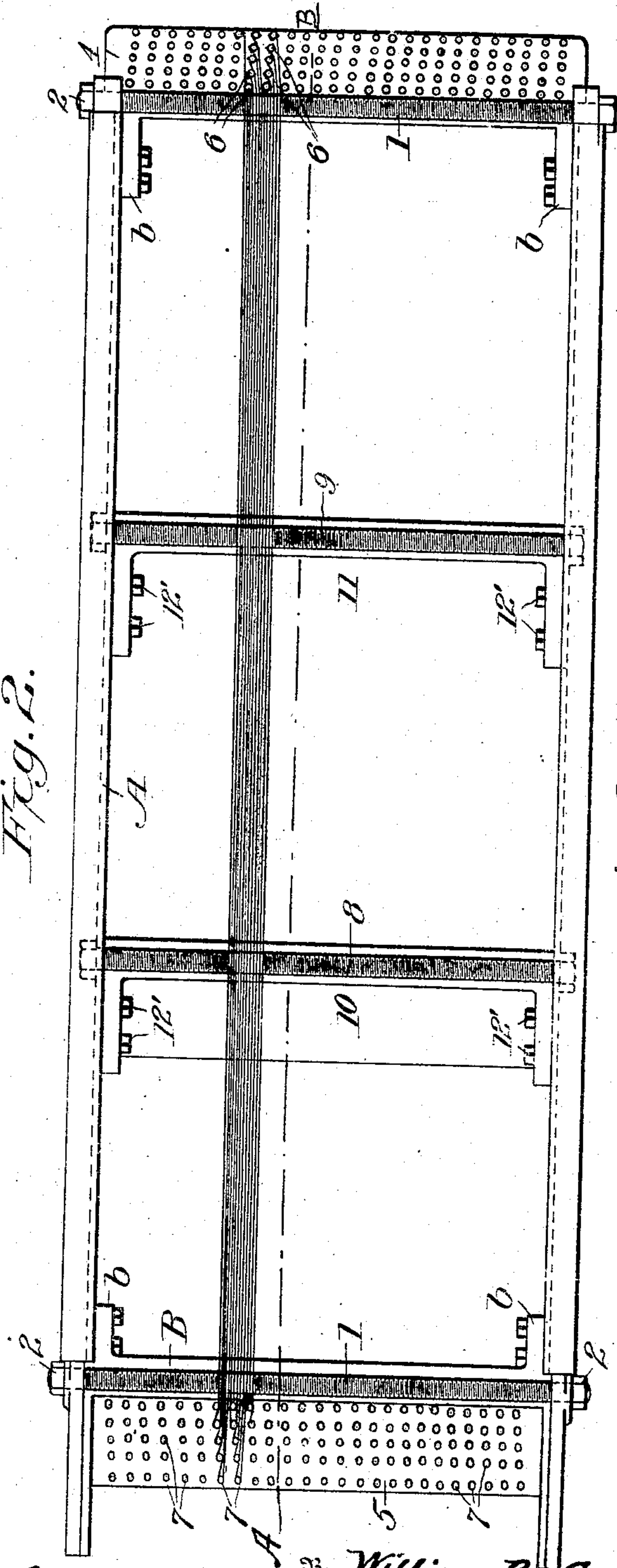
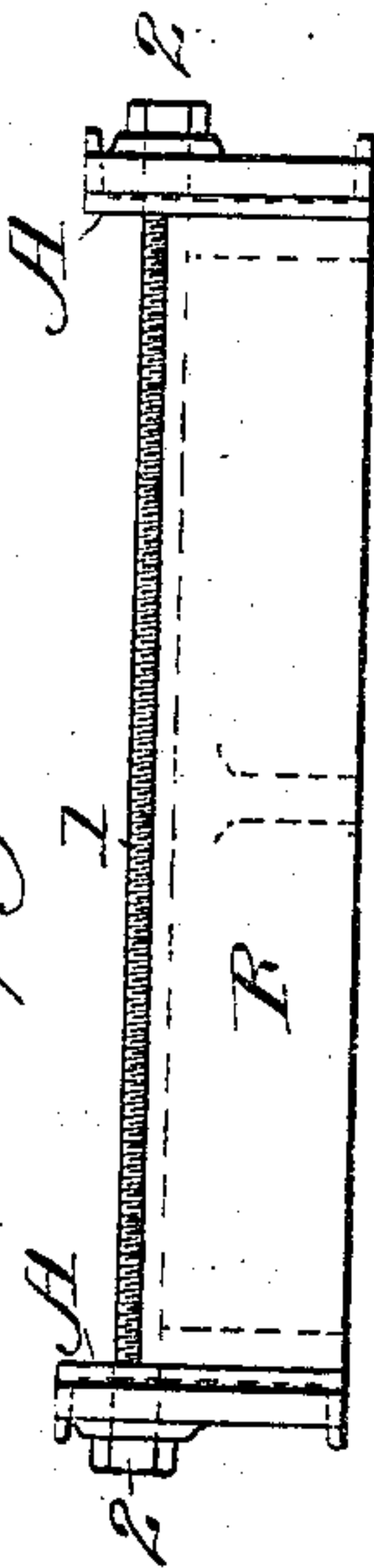


Fig. 3.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM R. CUNNINGHAM, OF BUCYRUS, OHIO, ASSIGNOR TO THE AMERICAN CLAY MACHINERY CO., OF BUCYRUS, OHIO, A CORPORATION.

SCREEN.

No. 858,706.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed April 13, 1907. Serial No. 368,115.

To all whom it may concern:

Be it known that I, WILLIAM R. CUNNINGHAM, a citizen of the United States, residing at Bucyrus, in the county of Crawford and State of Ohio, have invented new and useful Improvements in Screens, of which the following is a specification.

This invention relates to certain new and useful improvements in screens especially designed for the screening of clay and like material, although it may be used for other purposes.

The type of screen shown is known to the trade as a "piano-wire screen," the screen-surface being composed of a series of longitudinally-extending steel wires which are connected to turning-pins in a manner substantially like the well known method of stringing of the strings or wires of pianos and like musical instruments.

The present invention relates particularly to the reinforcement of the wires at intermediate points of the screen surface to prevent the wires from spreading under the weight or influence of material passing over or through them, and thereby permitting coarse material to pass through the wires.

The invention consists of the parts and the constructions and combinations of parts forming the improved screen which I will hereinafter describe and claim.

In the accompanying drawings forming part of the specification and in which similar reference numerals indicate like parts in the several views, Figure 1 is a longitudinal sectional view on the line A—B of Fig. 2. Fig. 2 is a top plan view of the screen. Fig. 3 is an end view.

As before stated, screens of the general type of the one herein shown are well known, such screens comprising a rectangular frame either cast as one part or built up of several parts and then appropriately bolted or otherwise secured together.

The screen-frame comprises longitudinally extending sides, A, which are preferably made of structural-steel or channel-irons, said sides being connected together at their ends by means of the transverse castings, B, each of which is substantially angular in cross section and has an outer inclined wall, 4, 5, which is drilled or tapped at suitable points throughout its surface to respectively receive the cap-screws, 6, and pins, 7. The end portions of the castings, B, are formed or provided with appropriate flanges, b, which fit snugly against the inner sides of the side pieces, A, of the screen-frame and are bolted thereto by suitable bolts as shown in Fig. 1. At each end of the screen-frame and above and resting in a groove formed in the top of the end castings, B, is a rod or bar, 1, the ends of which

project through appropriate holes in the extremities of the sides and receive nuts, 2, by means of which the rods or bars are secured.

The bars, 1, are threaded or transversely grooved throughout substantially their entire length, the pitch of the thread being substantially equal to the thickness of the wires and the space required between them, which space varies according to the character of material to be screened. The threads or grooves which are formed in the bars, 1, serve to appropriately space the wires from each other and also form seats for said wires. In the drawings, I show only a portion of the screen as having these wires, but it will be understood that the wires extend the whole length of the screen and that they occupy the entire area included between the inner sides of the side bars of said frame.

The cap-screws, before mentioned, are turnably-mounted in the holes drilled or tapped in the inclined outer walls, 4, 5, of the end castings, B, and each of these screws has a small hole drilled close to the head through which hole the ends of the wires pass. In practice, one piece of wire furnishes two strands for the screen, which is done by looping the wire at the center and passing these looped portions over the pins, 7, at one end of the screen and then passing the two loose ends of the wire through the aforesaid holes in the cap-screws, 6, at the other end of the screen, after which the said cap-screws are turned within their tapped holes, to apply the necessary tension to the wires and securely hold said wires in position, it being understood that each strand of the wire lies in one of the threads or grooves formed in the transverse bars, 1, before mentioned, which bars are located at the opposite ends of the screen-frame as shown in Figs. 1 and 2.

Practical experience with screens of this character has demonstrated when the substance to be screened is clay, that when the clay is sliding over the screen, if the screen is long, which is necessary in order to obtain the capacity which modern brick or tile machines require, the wires spread very readily and this permits coarser material to pass through other portions of the wires. In order to overcome this objection to this style of otherwise desirable screen, I interpose in the length of the screen at one or more points between the end castings, B, the intermediate rods or bars, 8 and 9, which rods or bars extend from side to side of the screen-frame and have their ends projecting through suitable holes in the sides, A, and engaged by appropriate nuts, as shown in Fig. 1. In this figure I show two of such intermediate rods or bars, which bars are threaded or provided with the annular grooves similar to the end-bars, 1, and the wires which pass across the end-bars and seat in the threads or annular grooves thereof, also

extend across the intermediate bars and correspondingly seat in the threads or grooves on said bars. The number of intermediate bars used will, of course, depend upon the length of the screen, and the said bars
 5 have the pitch of their screw-portions substantially equal to the thickness of the wire and the space required between the wires. The intermediate bars are appropriately seated upon the upper end of distance-pieces, 10 and 11, which pieces have grooves in their
 10 upper surfaces to receive the intermediate bars, and said distance-pieces have flanges at the ends arranged parallel with the inner sides of the screen-frame, said flanges being bolted directly to said frame by means of the bolts 12', as shown in Figs. 1 and 2. From this
 15 description it will be seen that the wires are stretched under suitable tension and extend the full length of the screen, and that by reason of the intermediate bars, 8 and 9, the intermediate and heretofore unsupported portions of the wires are supported directly upon the
 20 intermediate bars, 8 and 9, and seat in the threads or annular grooves therein and are thereby prevented from sagging downwardly under the weight of the material passing over them, and also prevented from spreading laterally to permit undesirable coarse ma-
 25 terial to pass through the spaces between the wires.

I thus obtain a more uniform screened product and at the same time provide a screen which is reinforced or strengthened at points intermediate of its length.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:— 30

An improved screen consisting of a frame having parallel sides, and parallel ends, said ends being formed of members angular in cross-section and having end flanges by which they are bolted to said sides, one of said end members having an inclined wall provided with pins and 35 the other member having an inclined wall provided with turning-pins, rods or bars fixed to the sides of the frame and extending longitudinally along the upper portions of the end-members, said rods or bars being provided with screw-threads, wires strung between the pins at the op- 40 posite ends of the frame, and seating in and being spaced by the threads of the rods or bars, distance-pieces intermediate of the end-members and bolted to the sides of the frame, and rods or bars fixed in the sides of the frame and 45 extending along the distance-pieces, and having threads across which the wires extend and in which they are seated and their intermediate portions held in spaced relation.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM R. CUNNINGHAM.

Witnesses:

G. F. ACKERMAN,

J. S. DE LASHMUTT.