

No. 694,496.

Patented Mar. 4, 1902.

W. N. RUMELY.
ADJUSTABLE SCREEN
(Application filed Aug. 5, 1901.)

(No Model.)

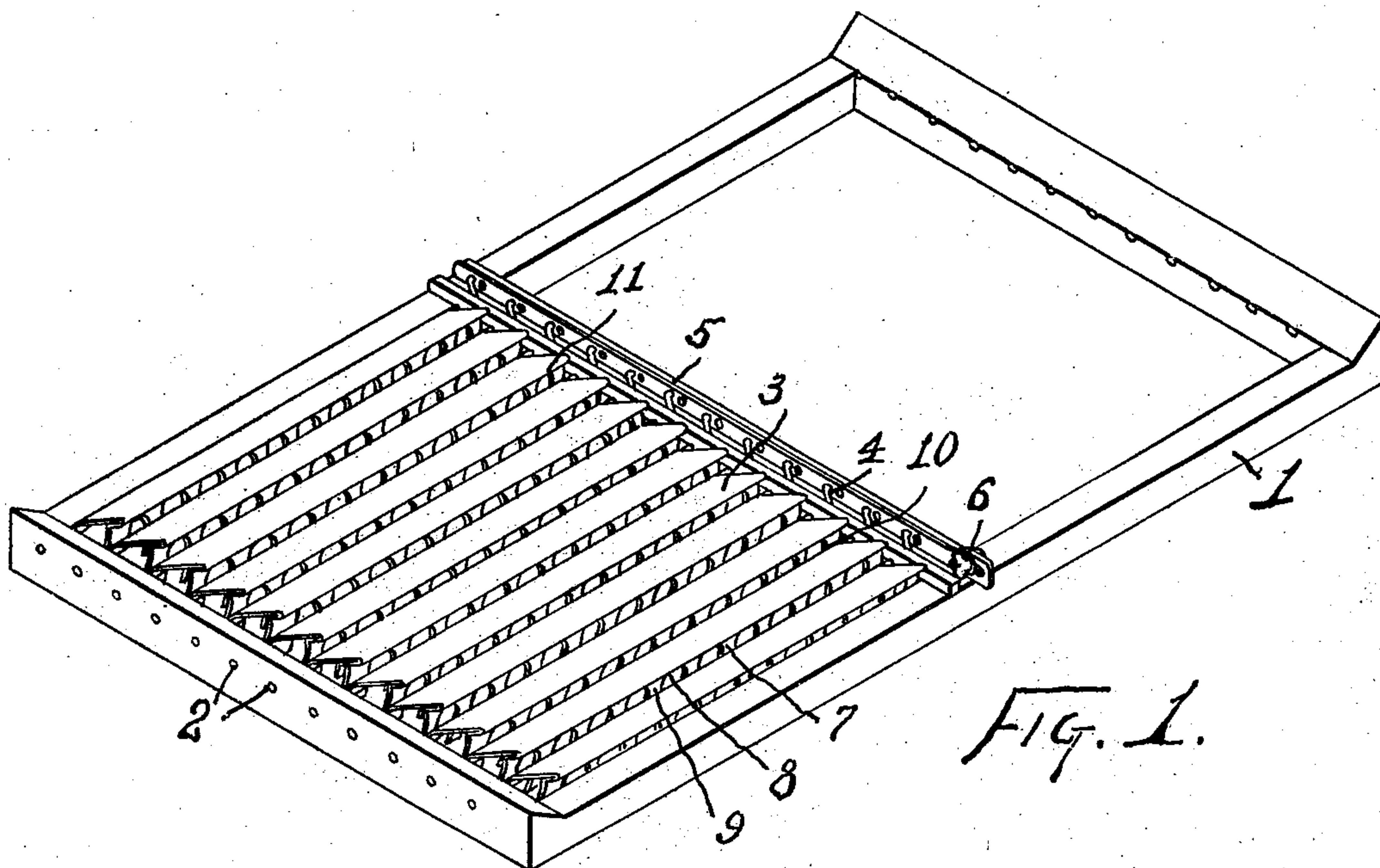


FIG. 1.

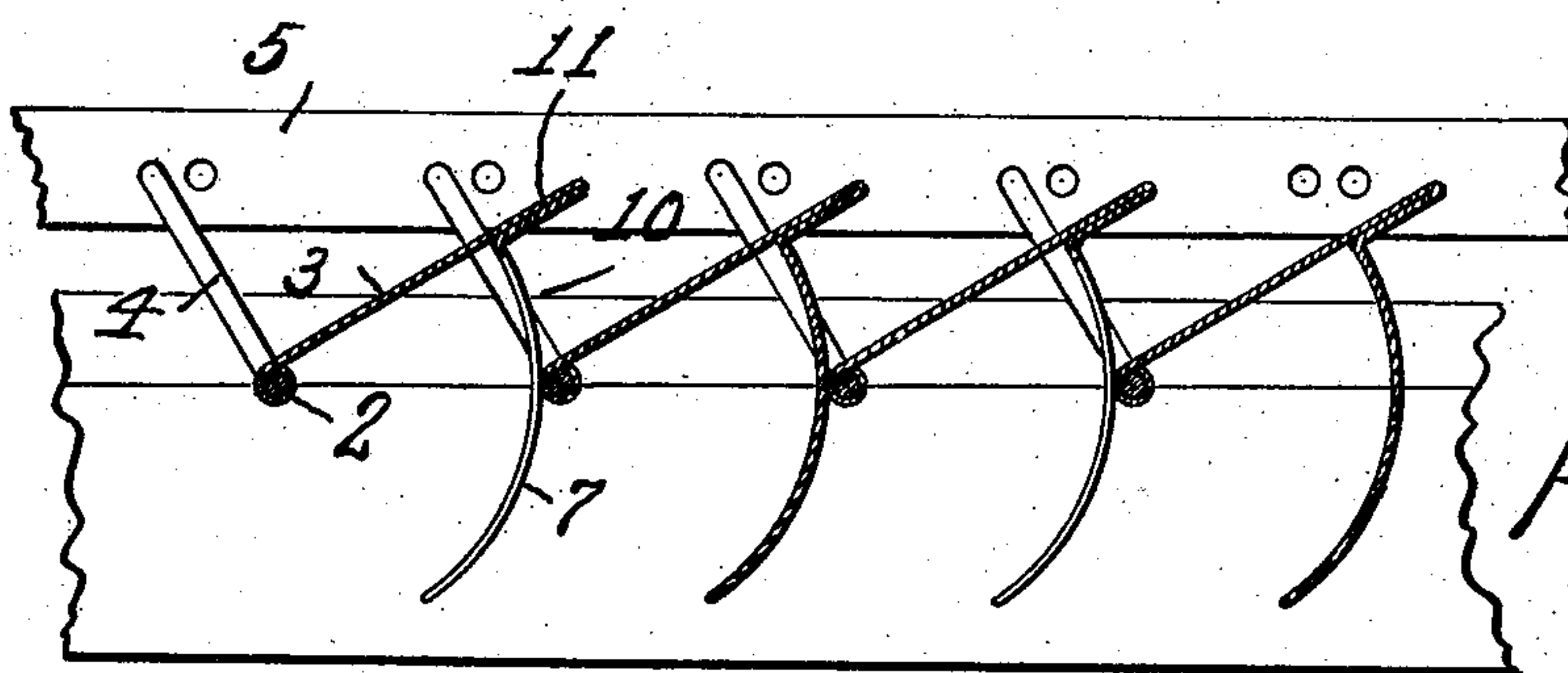


FIG. 2.

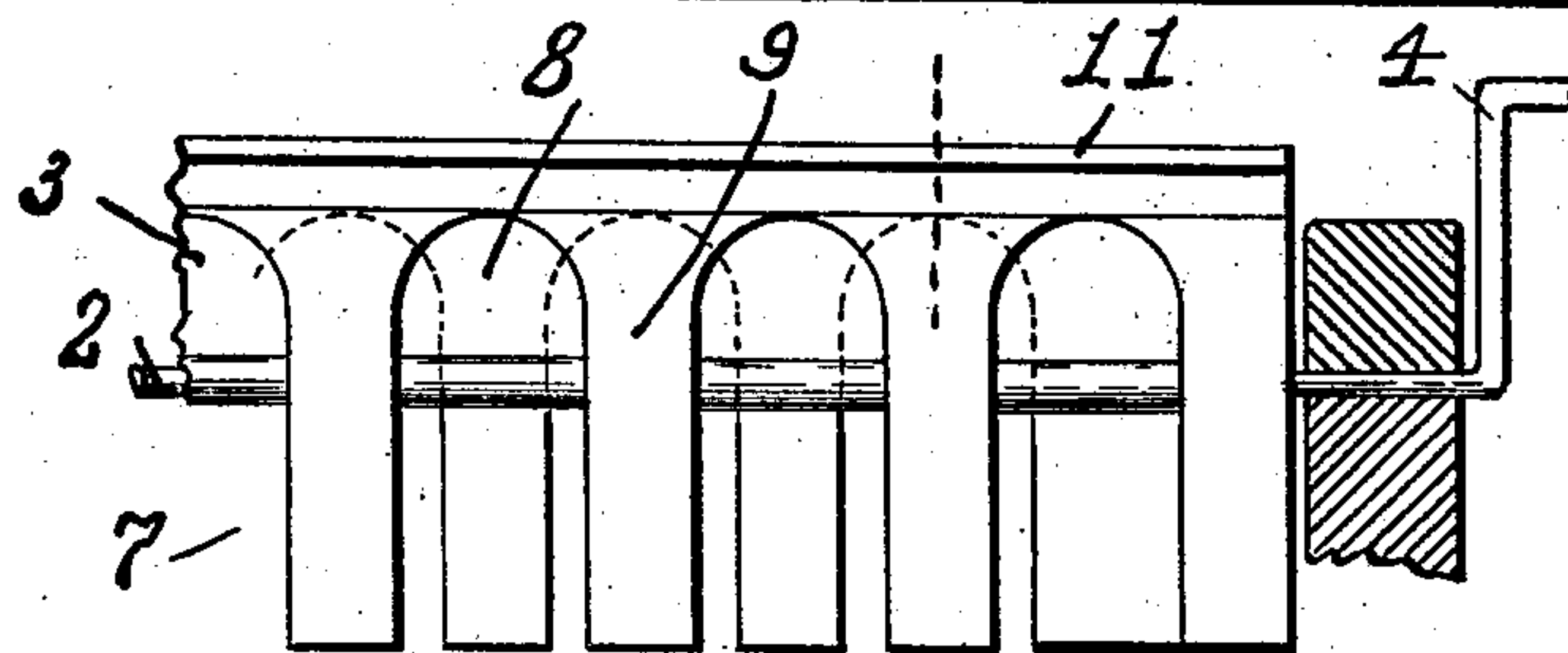


FIG. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM N. RUMELY, OF LAPORTE, INDIANA.

ADJUSTABLE SCREEN.

SPECIFICATION forming part of Letters Patent No. 694,496, dated March 4, 1902.

Application filed August 5, 1901. Serial No. 70,849. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. RUMELY, a citizen of the United States, residing at Laporte, Laporte county, Indiana, (post-office address Laporte, Indiana,) have invented certain new and useful Improvements in Adjustable Screens, of which the following is a specification.

This invention relates to improvements in adjustable screens designed, primarily, for use on separators, but manifestly capable of other uses; and the improvement will be readily understood from the following description, taken in connection with the accompanying drawing, in which—

Figure 1 is a perspective view illustrating a two-panel separator-screen, one of the panels only, however, being provided with the screenwork; Fig. 2, a vertical section in a plane transverse to the screen-slats, and Fig. 3 a front elevation of the screen-slats.

In the drawing, 1 indicates a skeleton frame, such as is ordinarily employed in separators to support and reciprocate the screens, this frame being illustrated as having a central bar, so as to form two screen-panels, the drawing showing only one of these panels as being provided with a screen; 2, pivots, with their axes extending across the screen-frame, these pivots being formed in the example of parallel wires, one for each screen-strip, journaled in the stiles of the frame; 3, strips of sheet metal extending endwise from stile to stile of the screen-panel, the rear edges of these strips being secured to the pivot-wires 2 and the front edge of the strip overlapping the inner edge of the strip in front of it; 4, cranks extending upwardly from one end of wires 2 to serve as means by which the horizontal transverse angle of the strips may be varied; 5, an adjusting-bar disposed along near one of the stiles of the frame and engaging the cranks 4, so that the endwise adjustment of the bar may serve in adjusting all the screen-strips; 6, a locking device, exemplified as a screw-and-slot arrangement, for securing the adjusting-bar in desired position of adjustment; 7, a curtain depending from near the front edge of each of the strips 3, this curtain having a transverse curvature concentric to its appropriate pivot 2 and being at such radial distance from its pivot as

to come against or very close to the rear of the heel of the strip in front; 8, a series of vertical apertures in the curtain 7, these apertures extending from near the top to the bottom of the curtain and giving to the curtain the characteristic of a comb; 9, the teeth of the comb, formed by the metal left standing between the apertures 8; 10, the exposed portion of the apertured curtains, being that portion of the curtains below the strip to which the curtain is attached and above the heel of the strip in front of it, the vertical extent of this exposure varying with the angular adjustment of the strips, and 11 the front portion of the strips 3, projecting forwardly beyond the upper part of the curtain.

The screen-frame will be reciprocated transverse to the strips, and consequently material resting upon the screen will advance to the right when the screen is viewed as in Fig. 2, the angularly-set strips acting as ratchet-teeth and permitting the material to flow to the right, but not to the left. Assuming the material fed to the screen to be straw and grain, the grain drops into the valleys and passes through the apertures 8, the straw passing onward. The size of the apertures can be varied by altering the angle of the strips. Thus when the strips are adjusted to their lowermost position there may be no exposure of the openings 8 to permit the passage of grain, and when the strips are adjusted to their greatest elevation then the openings 8 have great vertical length. The upper ends of the openings 8 are preferably given a rounding or analogous contour, so that under the closer adjustments of the screen the openings become adjusted in horizontal dimension as well as in vertical dimension. The projections 11 at the front of the strips make the ratchet-teeth, so to speak, more effective in producing the advance of the straw and in housing the grain and preventing its advance away from the screening-curtains.

Adjustable screens have heretofore been devised consisting of a series of tooth-edged angular adjustable screen-strips overlapping one another; but the screening-apertures formed between the teeth of the strips were in the lapping portion, and the angular adjustment of the strips had no effect in enlarg-

ing these screening-openings, the effect of the adjustment being to separate the strips so as to leave long slots of adjusted width between the strips, the screening-spaces between the teeth forming bays from said slots. Straws could go through these long slots, and these screens could never be given the qualities of a screen having longitudinal series of constantly-individualized screening-openings of adjustable area, for in the earlier screens above mentioned any adjustment of the screen to increase the screening area accomplished this result not by enlarging the area of the individual screening-openings between the teeth of the strips, but by producing and enlarging a longitudinal slot extending across the screen and destroying the individuality of the openings between the teeth. It is to overcome the defects in such screens that my present invention has been produced. Let it be particularly noticed that my improved screen never produces a horizontal slot in the valley, but that the screening-openings between the teeth always remain individualized, the effect of the adjustment being simply to increase their individual areas. Straws cannot go through my screen unless they go endwise through the openings between the teeth. The openings 8 in the several strips may, if desired, be arranged in direct fore-and-aft lines; but I prefer that they be staggered or arranged to break joint, so that a given vertical plane extending across all of the strips cannot cut through teeth only, but must cut through tooth-spaces on some of the strips. This staggering arrangement is illustrated in Fig. 3.

I claim as my invention—

1. In a screen, the combination, substantially as set forth, of a frame, a series of parallel axes supported thereby, strips having their rear edges mounted upon said axes, a curtain depending from the free portion of each strip and engaging with or near the rear of the heel of the strip next in front and projecting below said heel and having a transverse curvature concentric with the axis of its strip and formed with teeth separated by intervening spaces, and mechanism for adjusting said strips in unison upon their axes so that the curtains expose more or less of said spaces above the heels of their immediately forward neighbors.

2. In a screen, the combination, substantially as set forth, of a frame, a series of parallel axes supported thereby, strips having their rear edges mounted upon said axes, a curtain depending from the free portion of each strip and engaging with or near the rear of the heel of the strip next in front and projecting below said heel and having a transverse curvature concentric with the axis of its strip and formed with teeth separated by intervening spaces, forward projections from the top of each of said curtains in the plane of its strip, and mechanism for adjusting said strips in unison upon their axes so that the curtains expose more or less of said spaces above the heels of their immediately forward neighbors.

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