

No. 789,966.

PATENTED MAY 16, 1905.

E. E. DITCH & F. M. HAWKINS.

CHAFFER.

APPLICATION FILED OCT. 24, 1904.

2 SHEETS—SHEET 1.

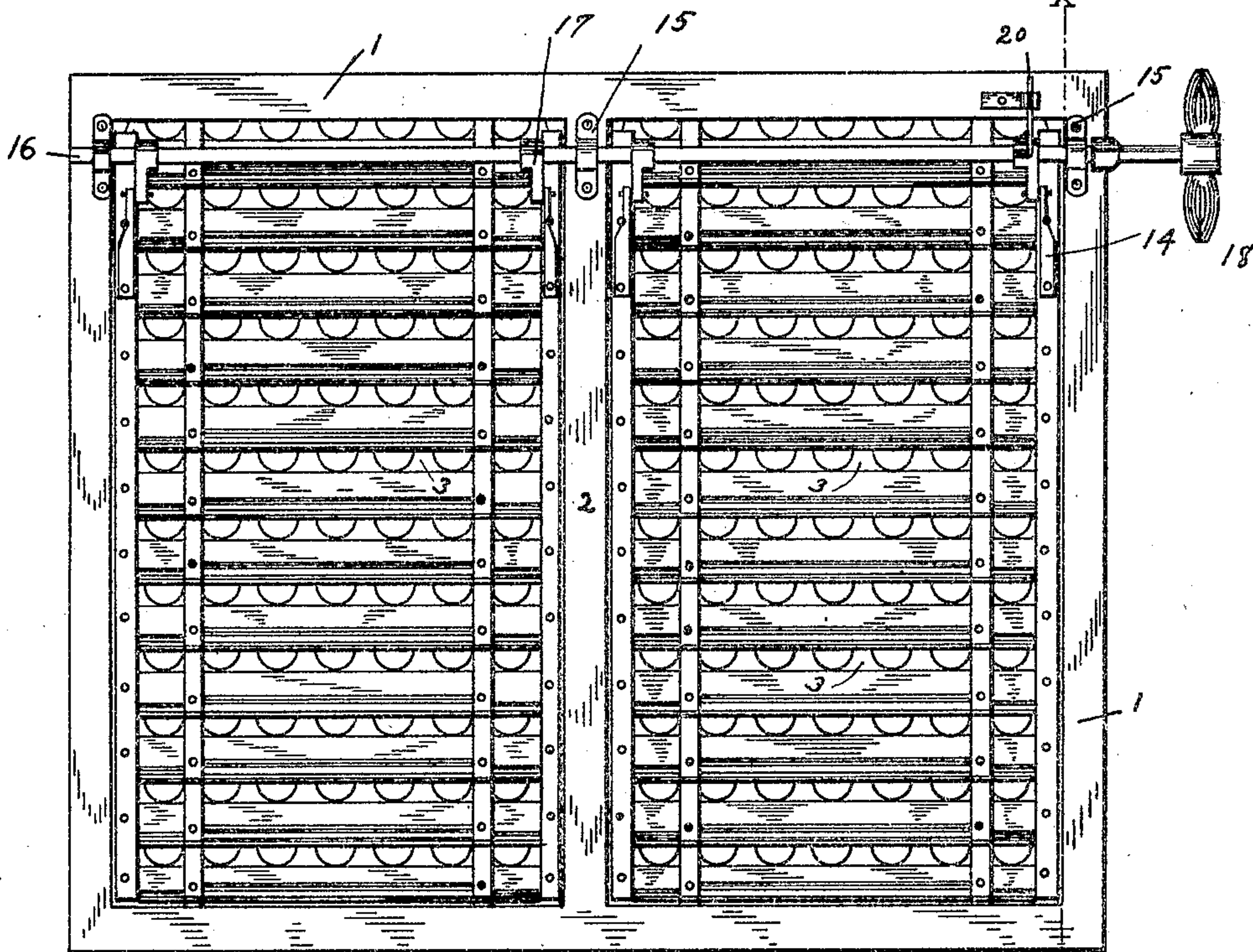


FIG. 1.

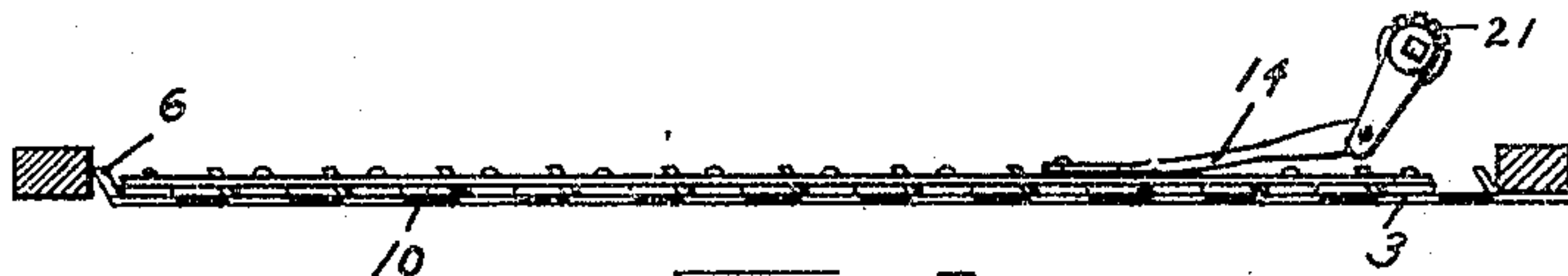


FIG. 2.

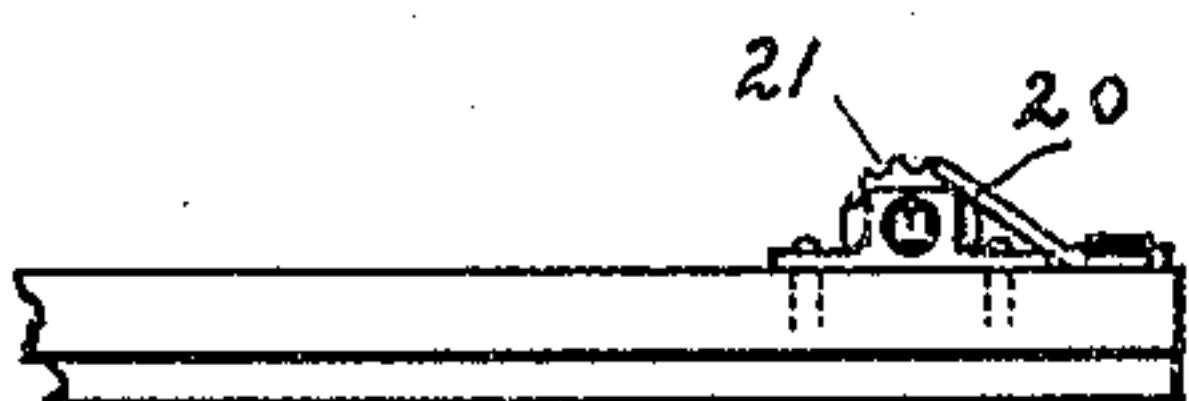


FIG. 3.

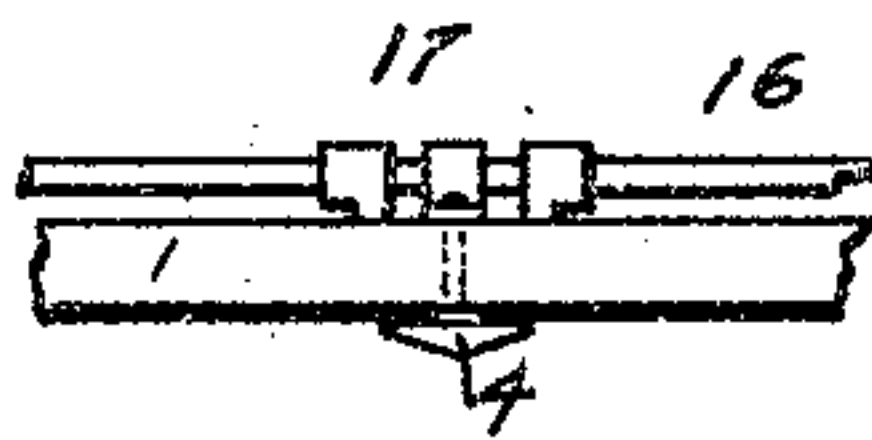
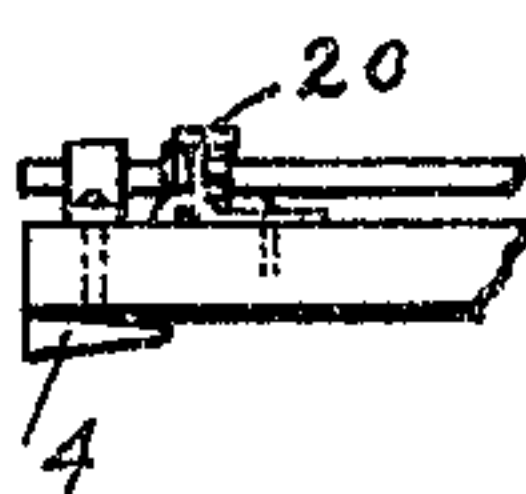


FIG. 4.

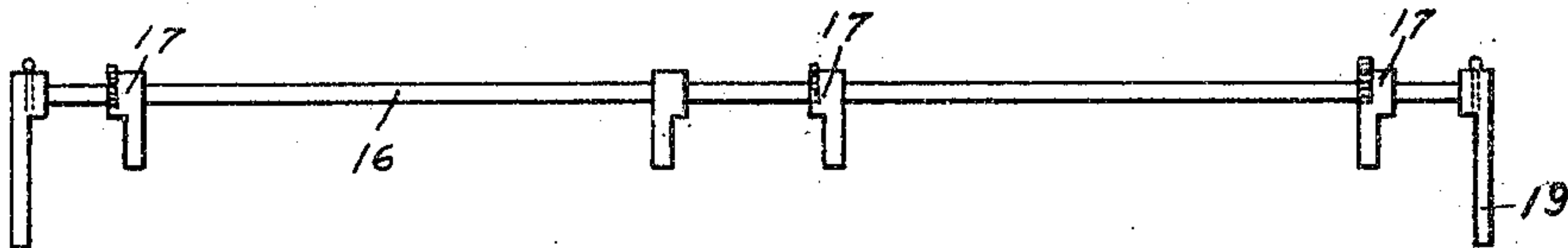


FIG. 5.

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2 SHEETS—SHEET 2.

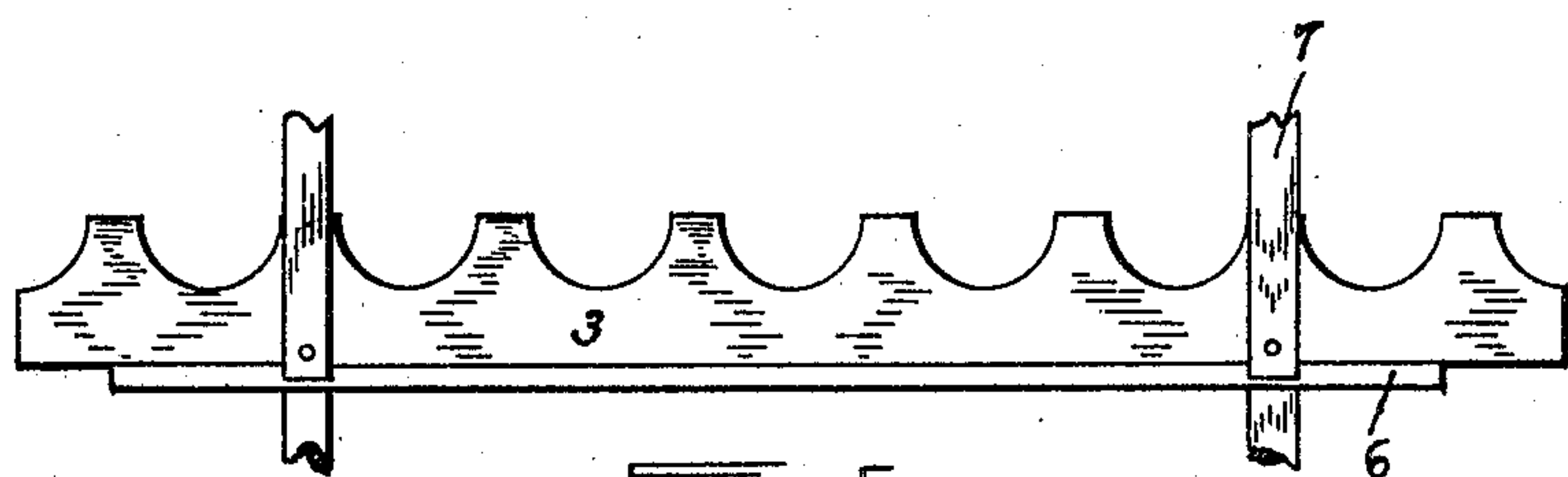


FIG. 6.

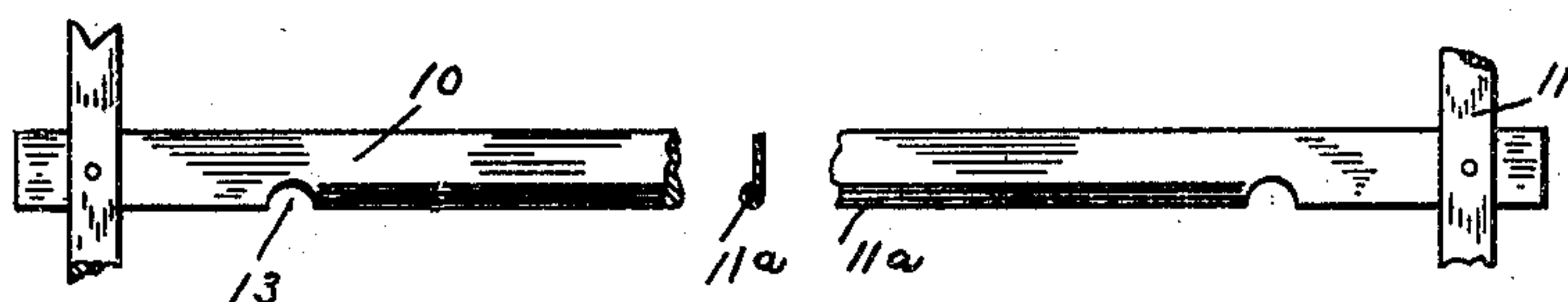


FIG. 7.

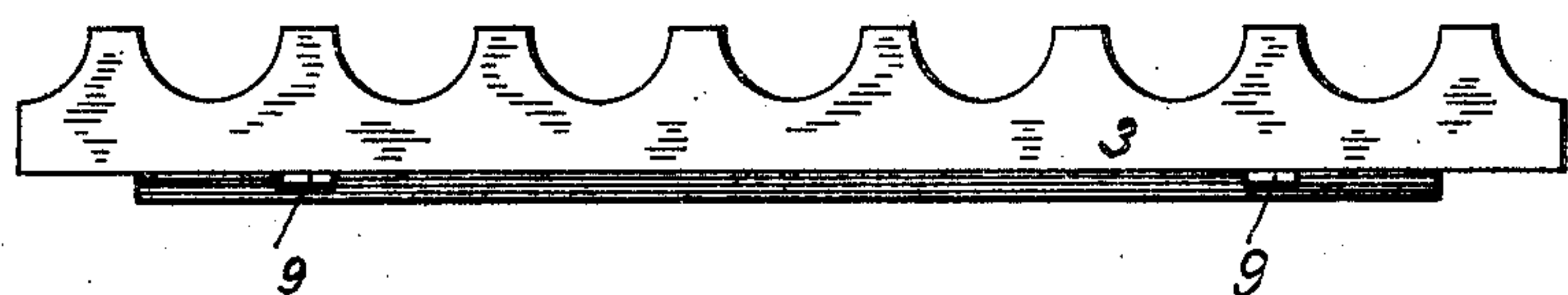


FIG. 8.

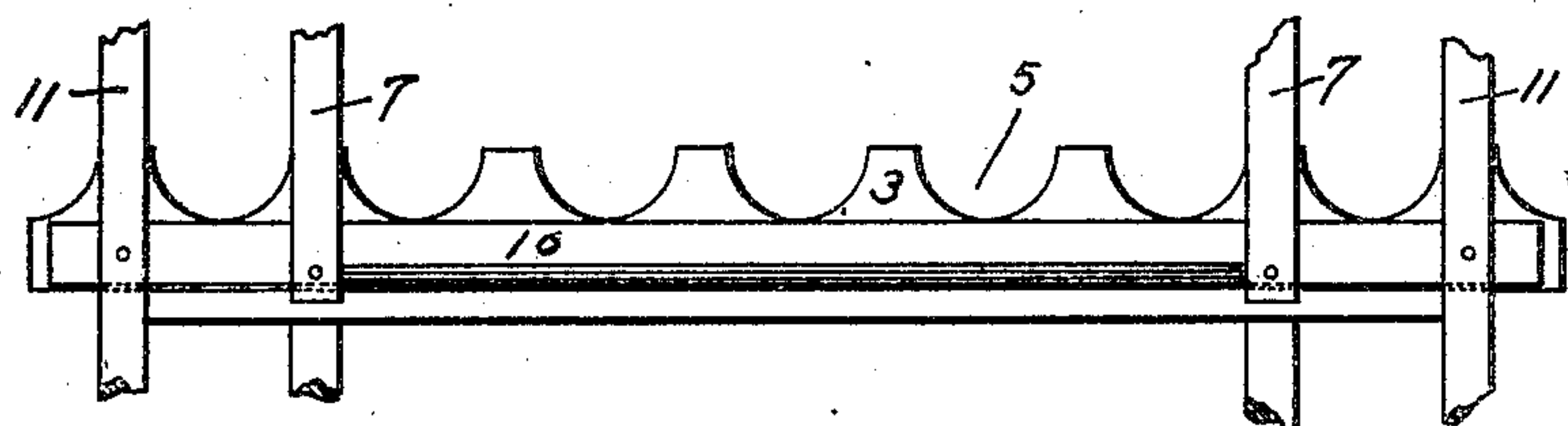


FIG. 9.

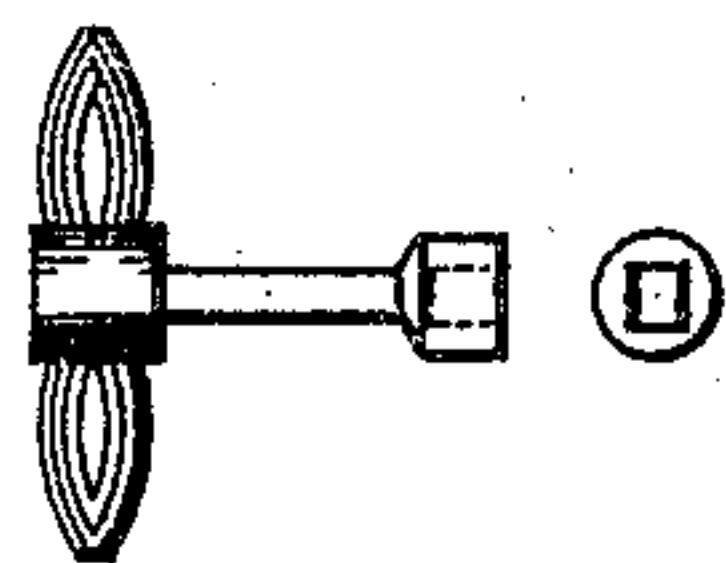


FIG. 10.

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# UNITED STATES PATENT OFFICE.

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## CHAFFER.

SPECIFICATION forming part of Letters Patent No. 789,966, dated May 16, 1905.

Application filed October 24, 1904. Serial No. 229,816.

*To all whom it may concern:*

Be it known that we, ELMER E. DITCH and FRANK M. HAWKINS, citizens of the United States of America, and residents of Mansfield, Richland county, Ohio, have invented certain new and useful Improvements in Chaffers, of which the following is a specification.

Our invention relates to adjustable chaffers; and it consists in mounting a series of slats having deflectors made integral therewith upon a rectangular frame in such a manner as to form an apertured plate, with the deflectors depending at an incline toward the air-blast deflecting the currents of air in an unbroken line and directing its course through each series of apertures.

A further object of our improvement is to construct a slat having a depending inclined portion formed on one edge with the opposite edge notched or serrated and suitable means of connecting a plurality of said slats in series forming a perforated surface.

Another object is to afford facilities for varying the size of the apertures in the perforated plate in order to change or vary the mesh to correspond with the kind or size of grain it is desired to clean and to provide means of making the adjustment upon either side of the separator while it is in operation and means for automatically locking it.

We attain these and other objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a bottom plan view of our chaffer. Fig. 2 is a cross-sectional side view taken on the line X X of Fig. 1, showing method of varying the mesh, with lever-arm and draw-bar. Fig. 3 is a side view of the locking mechanism showing notches formed in one end of the lever-arm with tension-pawl in contact. Fig. 4 is an end view of the locking mechanism and operating-shaft. Fig. 5 is a side view of the operating-shaft, showing lever-arms and lever key-wrench. Fig. 6 is a top and side view of one of the slats, showing method of connecting them in series by means of bars and rivets. Fig. 7 is a bottom view of one of the strips used to vary

the mesh, showing the edge beaded. Fig. 8 is a bottom plan view of a slat, showing slot through which the connecting-bars are inserted in connecting the slats in series. Fig. 9 is a bottom and side view of slat and strip superimposed or adjacent to each other and in position to be slidably adjusted, varying the size of the mesh. Fig. 10 is an ordinary key-wrench which can be used to turn the operating-shaft for the purpose of adjustment.

In the construction of our chaffer we provide a rectangular frame 1 with one or more central braces 2. Upon the top of the frame we mount a series of separate slats 3. The ends of the slats are held in place by suitable cleats 4.

It is well known to those skilled in the art that the chaff, straw, and other particles will choke and clog between the lips and the surface of the sieve.

To overcome the defects incident to the ordinary chaffer, we have designed a new and novel slat which when connected together in series removes all liability of choking or clogging. The slat is formed out of sheet metal or zinc. One edge, 5, of the slat is notched or serrated to provide an apertured surface. The opposite edge, 6, of the slat is downturned, the full length of the slat presenting an unbroken edge, which deflects and directs the current of air from the blast to the apertured surface in an unbroken line. It is apparent that this feature is of great advantage, as the chaff, &c., cannot lodge, choke, or clog between the depending lips and the apertured surface, which is common in the use of the ordinary chaffer. It will be observed that the use of a depending lip is entirely eliminated. The slats are connected together by means of longitudinal bars 7, which are riveted or otherwise fastened to each separate slat, connecting them in series, forming a perforated plate with a smooth or plane surface. Between the slats and the bars 7 a washer 8 is inserted, leaving an open space of such a width as to permit the strips (which will be more particularly described



hereinafter) to reciprocate freely therebetween and at the same time guide and keep the strips in close proximity to the surface of the perforated plate. The bars 7 pass through the slots 9, which are formed in the inclined portion of the slats and are riveted to the bottom of the slats in direct alinement with the projecting portion of the notched edge.

10 Strips 10, having the rear edge 11<sup>a</sup> beaded for the purpose of adding strength, are provided. The strips are fitted to reciprocate between the open space *a*, the movement being sufficient to partially or completely close the apertured surface of the plate. The number of strips correspond with the number of slats, and they are securely connected together by the longitudinal bar 11, so that when movement is imparted to them they move simultaneously, closing or partially closing each series of apertures at the same time. The edges of the strips have notches 13 formed in the edge to prevent the strips from coming in contact with the rivets when the chaffer is opened to its full extent.

A draw-bar 14 is secured to the longitudinal bars 11, (see Fig. 2,) leaving the free end depending below the bar. The bar 14 is flat and the free end is turned at right angles. Two or more boxes or bearings 15 are secured to the bottom of the frame to provide bearing for the rectangular operating-shaft 16. Lever-arms 17 are secured to the shaft and pivotally connected to the draw-bar 14. Key (18) or lever (19) wrenches or other devices are fitted to the end of operating-shaft for the purpose of imparting movement thereto. When movement is imparted to the shaft, the strips are relatively adjusted to vary the mesh of the chaffer. In order to retain the strips at any point of their adjustment, we provide a tension-pawl 20, which is securely attached to the frame, so as to permit the end to contact with suitable notches 21, provided in the projecting portion of the lever-arms.

It will be noted that the construction herein described presents a smooth surface and keeps the chaff and grain from interfering with its proper adjustment and operation, as all liability of choking or clogging is obviated. The operating-shaft is made to come flush with each side of the frame, providing a means of adjusting the chaffer from either side of the separator, a feature that is not common to the ordinary chaffer, but of decided advantage. The depending portion of the slat in addition to performing the functions of deflecting and directing the course of the air acts as a strengthening-rib and protects the moving parts of the chaffer from the chaff or grain which ordinarily interferes with its operation.

What we claim, and desire to secure by Letters Patent, is—

65 1. In a chaffer composed of a series of slats

having one edge serrated with the opposite edge having a depending portion made integral therewith, a series of strips, bars connecting said strips, said strips being adapted to be relatively adjusted upon the slats varying the mesh.

2. In a chaffer the combination of two relatively adjustable plates composed of a series of separate slats and strips, an operating-shaft journaled on said frame, lever-arms secured to said operating-shaft, a series of notches formed on one or more of said levers, a spring-latch adapted to lock said shaft meshing with said notches on the lever, a draw-bar attached to said strips and connected to the lever-arms providing a means of adjustment.

3. A chaffer composed of a series of separator-slats connected by means of longitudinal bars, a series of strips adapted to reciprocate upon said slats varying the mesh, a draw-bar connected to said strips, an operating-shaft journaled in suitable bearing on the frame, lever-arms fitted thereto and pivotally connected to the draw-bar, means for changing the size of the mesh, a tension-pawl secured to the frame and adapted to mesh with notches formed in one end of the lever-arms.

4. In a chaffer the combination of a series of notched slats having a depending portion made integral therewith adapted to direct the currents of air, bars connecting said slats, said slats being secured to the bars leaving an open space between, strips fitted to reciprocate between said openings and adapted to partially or completely close the apertures in the plate.

5. A chaffer composed of a series of separate slats having one edge serrated with the opposite edge depending from the body portion, a series of strips connected together and adapted to be relatively adjusted to vary the mesh, a draw-bar attached to said strips, an operating-shaft extending flush with the sides of the frame, lever-arms pivotally connected to the draw-bar, means for adjusting the mesh from either side of the separator.

6. A chaffer composed of a series of notched slats connected together by longitudinal bars, said slats having one edge depending forming a deflector, strips having one edge beaded, bars connecting said strips, a draw-bar connected to said strips, an operating-shaft journaled on the frame lever-arms rigidly secured thereto and connected to said draw-bar, means for imparting movement to said strips whereby the mesh of the apertured plate is varied, a tension-pawl adapted to lock said strips at any point of their adjustment.

7. A chaffer composed of a series of slats having a downwardly-depending portion the full length thereof made integral and extending the full length thereof, a series of strips connected together and arranged to lie adjacent to the bottom of the slats in alinement

5 with the mesh of the sieve and in front of the depending portion, affording facilities for keeping foreign substances from interfering with the operation of varying the mesh, bars attached to said strips, an operating-shaft, levers secured thereto and adapted to connect with the bars attached to said strips.

Signed at Mansfield this 21st day of October, 1904.

ELMER E. DITCH.  
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Witnesses:

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MAUDE GATES.