

No. 755,441.

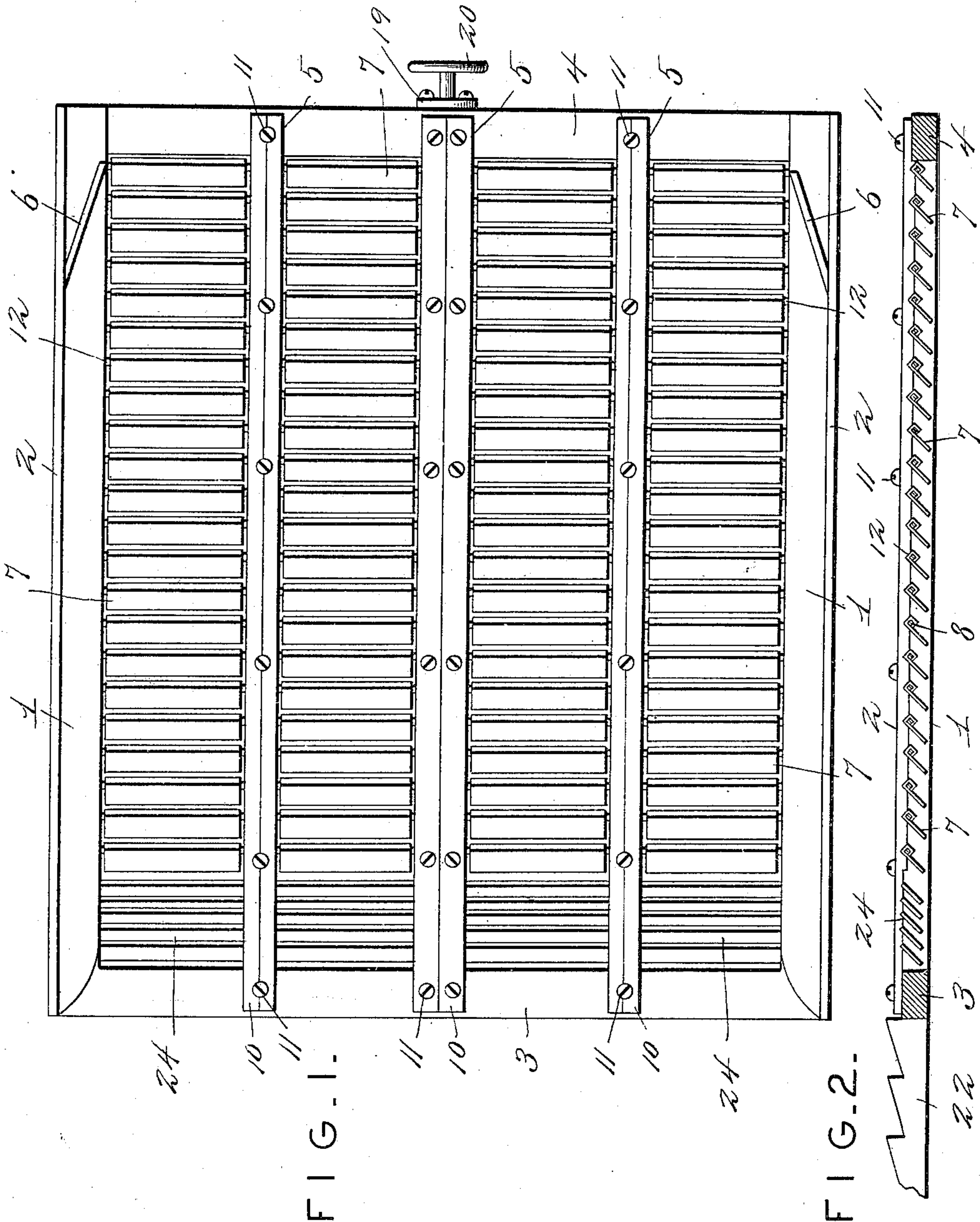
PATENTED MAR. 22, 1904.

W. E. BRADLEY.
CHAFER FOR THRESHING MACHINES.

APPLICATION FILED NOV. 22, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

Harry L. Ames.
J. W. Ames.

INVENTOR

William E. Bradley.
BY *Rexford M. Smith*
Attorney.

No. 755,441.

PATENTED MAR. 22, 1904.

W. E. BRADLEY.
CHAFER FOR THRESHING MACHINES.

APPLICATION FILED NOV. 22, 1902.

NO MODEL.

3 SHEETS—SHEET 2.

FIG. 3.

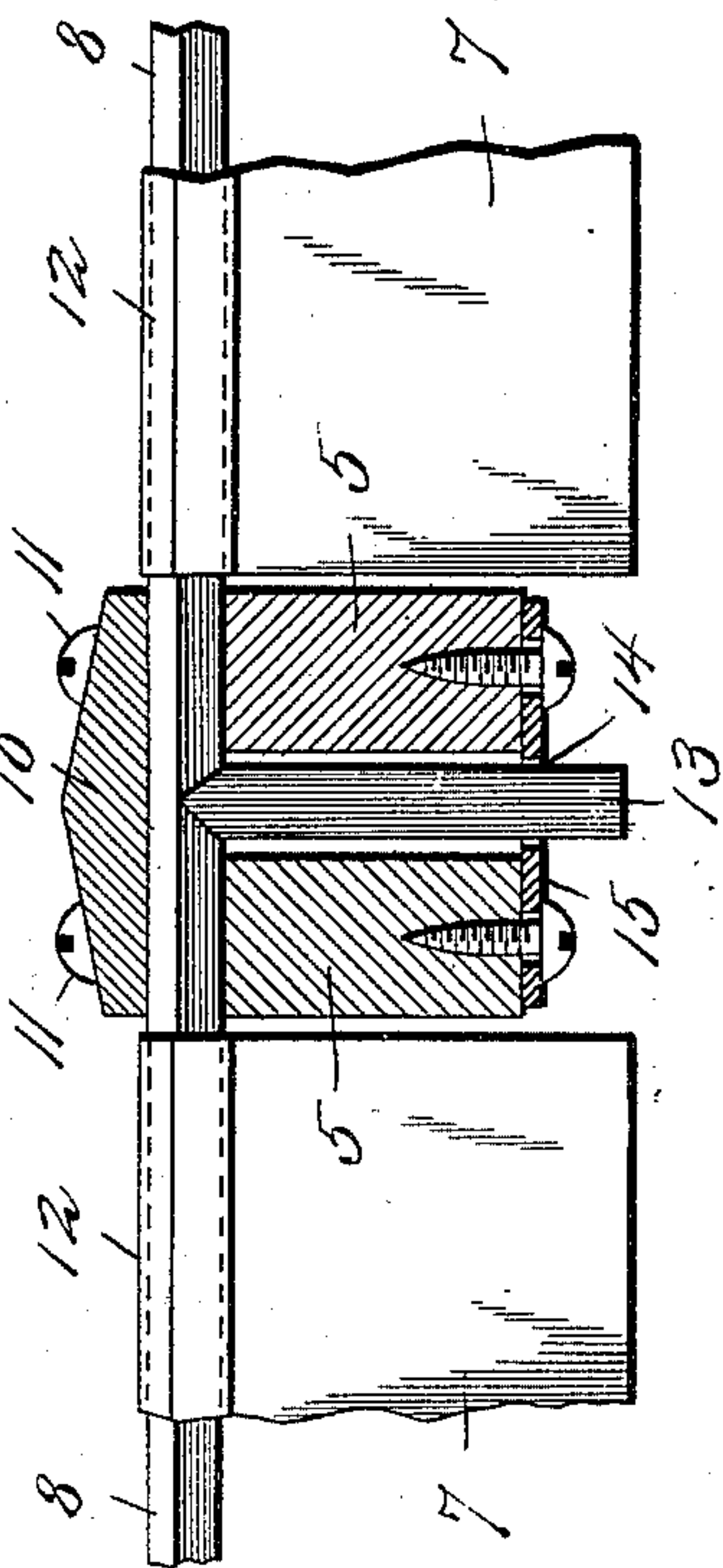
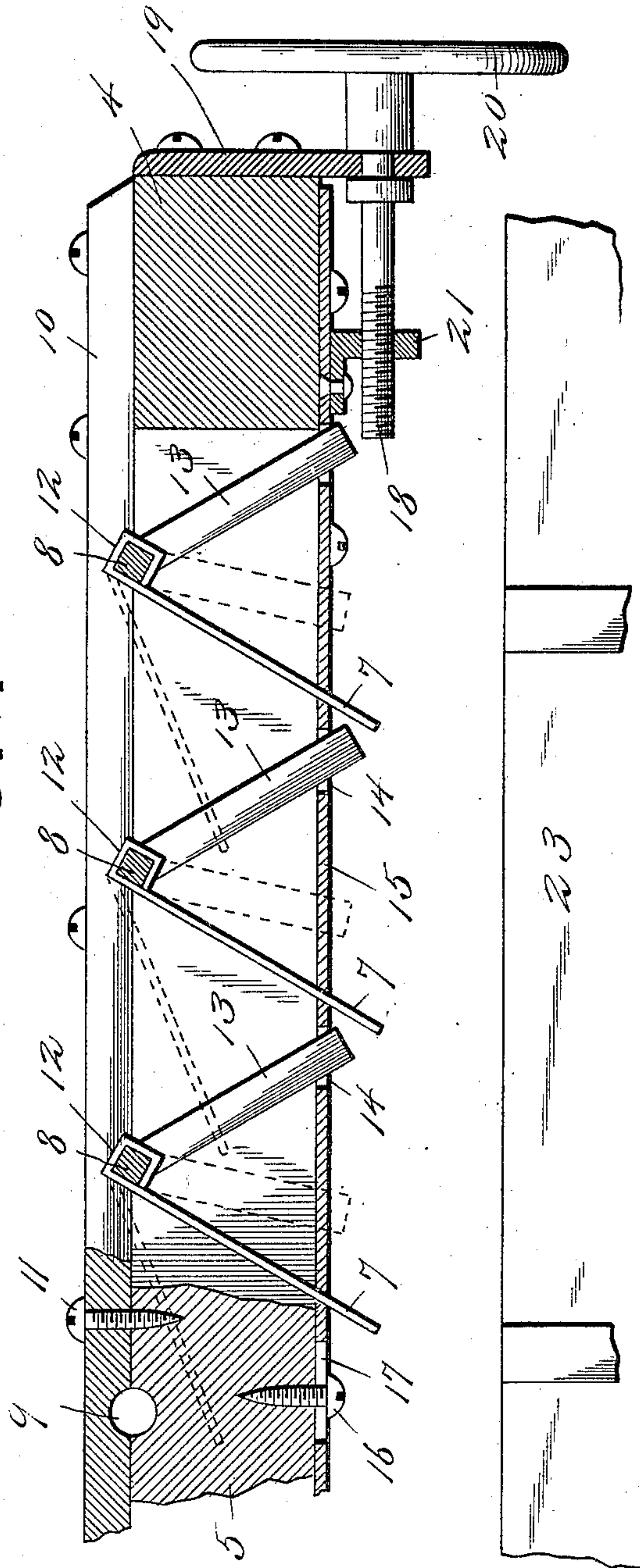


FIG. 4.



WITNESSES:

Harry L. Ames.
J. W. Riley

INVENTOR

William E. Bradley.
By Rexford M. Smith,
Attorney,

No. 755,441.

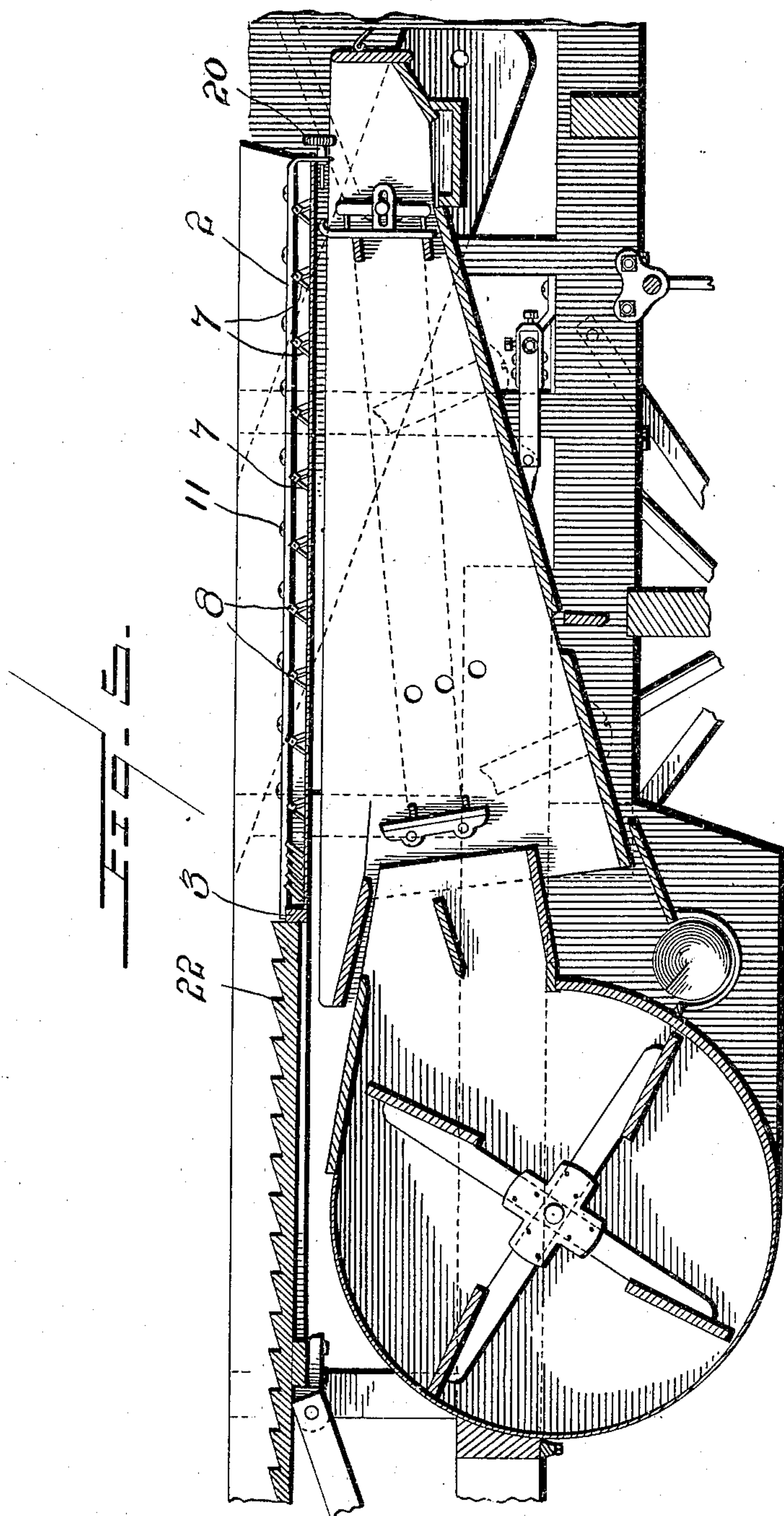
PATENTED MAR. 22, 1904.

W. E. BRADLEY.
CHAFER FOR THRESHING MACHINES.

APPLICATION FILED NOV. 22, 1902.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES

Wm. F. Doyle.
Edwin G. McKee

INVENTOR

William E. Bradley

BY

Reynold M. Smith.

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM E. BRADLEY, OF BATTLECREEK, MICHIGAN, ASSIGNOR TO
NICHOLS AND SHEPARD COMPANY, OF BATTLECREEK, MICHIGAN.

CHAFFER FOR THRESHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 755,441, dated March 22, 1904.

Application filed November 22, 1902. Serial No. 132,384. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BRADLEY, a citizen of the United States, residing at Battlecreek, in the county of Calhoun and State of Michigan, have invented a certain new and useful Chaffer for Threshing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to threshing-machines, and particularly to chaffers used in connection with and forming a part of the grain-pan.

In the ordinary construction of grain-pans and chaffers a series of slats are employed, the same being set at an inclination and in parallel relation with each other. The threshed material after falling into the grain-pan passes along the grain-pan and over the chaffer, the grain and fine chaff falling through the chaffer and through the slats thereof while being subjected to a blast of air, a small portion of which passes upward through and between the slats, and thereby assists in separating and cleaning the grain.

In practice it is found that the kinds and conditions of grain vary to such an extent that the chaffer is often too close and frequently too open to accomplish the best results. The present invention is designed to overcome this difficulty, and with that object in view the invention contemplates the use of pivoted and adjustable slats in connection with means for simultaneously swinging and adjusting the slats so as to impart a greater or less inclination thereto and as a result afford greater or less space between the slats, the adjustment being capable of being effected while the machine is in operation. In this way the operator can regulate the amount of material that may pass over the chaffer and between the slats thereof in accordance with the particular condition of the threshed material. If the threshed material is weedy and coarse, the operator may adjust the chaffer so as to give enough opening between the slats to admit of the passage of the grain without the rest of the material, the adjustment of the slats also serving to regulate the air-blast and permit the proper amount thereof to act upon

the threshed material as it moves in contact with the chaffer.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement herein-
after fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a plan view of a chaffer constructed in accordance with the present invention, the same forming part of the grain-pan of a threshing-machine. Fig. 2 is a vertical longitudinal section through the same, showing also some of the slats or teeth of the grain-pan contiguous to the chaffer. Fig. 3 is an enlarged detail cross-section through the central portion of the chaffer, showing the means for adjusting the slats. Fig. 4 is a vertical longitudinal section, on an enlarged scale, showing the mechanism for adjusting the slats, said view also showing a portion of the vibrating shoe located beneath the chaffer. Fig. 5 is a vertical longitudinal section through a portion of a threshing-machine, showing the chaffer, grain-pan, and the relation of the shoe and fan thereto.

Like reference-numerals designate corresponding parts in all figures of the drawings.

The chaffer is preferably composed of side bars 1, provided with upstanding flanges 2 along the outer edges thereof, front and rear cross-bars 3 and 4, respectively, and intermediate division-piece 5, extending longitudinally of the machine, the parts thus far described being rigidly and firmly connected to constitute the frame of the chaffer. If desired, the side bars 1 may be in one piece with the sides of the grain-pan. In addition to the parts above enumerated the chaffer also comprises deflectors 6, arranged at opposite sides, as shown in Fig. 1, to direct the threshed material toward the center and upon the slats of the chaffer.

The chaffer comprises, essentially, a series or several series of slats 7, it being preferred to arrange a series of slats between each of the division-pieces 5 and between said division-pieces and side bars 1 of the chaffer-frame, as clearly shown in Fig. 1, the slats as a whole being thus supported at several points intermediate their length to prevent swaying or bending of the

slats under the weight of the superimposed material. In other words, each complete slat 7 may be said to be composed of several sections corresponding in number to the number 5 of spaces between the division-pieces and the side bars 1 of the frame. All of the sections of each slat are mounted on a single shaft 8. The shaft 8 is preferably square or polygonal in cross-section and is provided with rounded 10 journal portions which are received in bearings 9, formed in the division-pieces 5 and partly in a corresponding set of cap-pieces or strips 10, secured in place by screws or other fasteners 11, as shown in the drawings. The 15 slats 7 are preferably formed of metal, and in order that they may swing with the shafts 8 each slat-section has its upper edge bent to form a square or polygonal sleeve 12, which slips over and fits snugly around the shaft 8, 20 conforming in cross-section thereto. Thus each slat is pivotally mounted approximately in line with its upper edge, the purpose of which will hereinafter appear.

At a suitable point intermediate its ends 25 each shaft 8 is provided with a crank or lever arm 13, which by preference extends downward and passes through an opening 14 in a slide, which is shown in the form of a plate 15, loosely supported in close relation to the 30 lower side of one of the division-pieces 5, as shown in Figs. 3 and 4. The slide 15 is supported by means of headed screws or similar devices 16, connected with the division-piece 5 and passing through slots 17, formed in the 35 slide. While the slide is thus upheld against the bottom of the division-piece 5 it is permitted to move lengthwise for the purpose of vibrating the lever-arms 13 of the several slats and correspondingly swinging the slats them- 40 selves, as indicated by the full and dotted line positions in Fig. 4.

In order to adjust and hold the slide 15, I employ a screw 18, which is journaled in a bearing-bracket 19, secured by preference to 45 the rear end of the chaffer-frame, where it is readily accessible, said screw being equipped with a hand-wheel or similar hand device 20, by means of which the screw may be turned. A lug or ear 21 is connected fixedly with the 50 slide 15 and is screw-threaded to receive and engage the screw 18. Thus by operating the hand-wheel 20 and revolving the screw 18 the slide 15 is moved lengthwise of the frame, thereby operating to vibrate the crank or le- 55 ver arms 13 and to swing the slats 7, all of the slats being operated simultaneously by the mechanism disclosed.

22 designates the teeth or slats of the grain-pan adjacent to the forward portion of the 60 chaffer, and 23 represents the vibrating shoe, which in the ordinary construction of threshing-machines is arranged beneath the chaffer to receive the grain therefrom.

The chaffer hereinabove described is, in ef- 65 fect, an extension of the grain-pan, its position

being just above the vibrating shoe which contains the riddles. Grain, chaff, and other short straws fall into the grain-pan in the process of threshing and are carried by the oscillation of the grain-pan to the rear and dis- 70 charged over the end of the grain-pan, except that the threshed grain and more or less of the grain and short straws are permitted to fall through the chaffer upon the riddles in the shoe beneath, at which point a blast of air 75 from the fan blows out the impurities and permits the clean grain to fall through the riddles into the shoe, and thus in the grain-auger, as will be readily understood by those familiar with the art to which this invention appertains. 80

Practice has demonstrated the desirability of having the adjustable slats pivotally mounted approximately in line with their upper edges in order that the top or upper side of the chaffer may preserve a perfect line with the 85 fixed slatwork 24 at the initial end of the chaffer and with the bottom of the grain-pan. If the slats were pivoted in the center or at any other point, the upper edges under different adjustments would either project above 90 or fall below the line of the fixed slats or the bottom of the grain-pan, which would interfere with the free passage of the material on its way through the machine. By pivoting the slats adjacent to their upper edges said 95 slats may be set at such an angle as to induce or deflect a certain portion of the blast from the fan through or between the slats for the purpose of loosening up the material thereof and assisting in its passage along the chaffer 100 and its discharge from the rear thereof.

It will be observed that there is a specific relation between the arrangement of the imperforate surface of the grain-pan and the chaffing-screen, so as to present a continuous 105 carrying or conducting surface in a substantially single plane, and the location of the axis of adjustment at the upper edges of the slats enables such adjustment to be effected substantially without disturbing the continuity 110 of the surface.

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

A grain-pan for threshing-machines com- 115 prising an imperforate surface adapted to conduct the material, and a screen constituting a rearward extension of the pan-surface in substantially the plane thereof and comprising a series of slats having their axes practically in 120 line with their upper edges, and means for simultaneously adjusting the angle of said slats without substantially altering the plane of the surface of the screen.

In testimony whereof I affix my signature 125 in presence of two witnesses.

WILLIAM E. BRADLEY.

Witnesses:

CHESTER P. ALDRICH,
F. J. WALBRIDGE.