

No. 791,402.

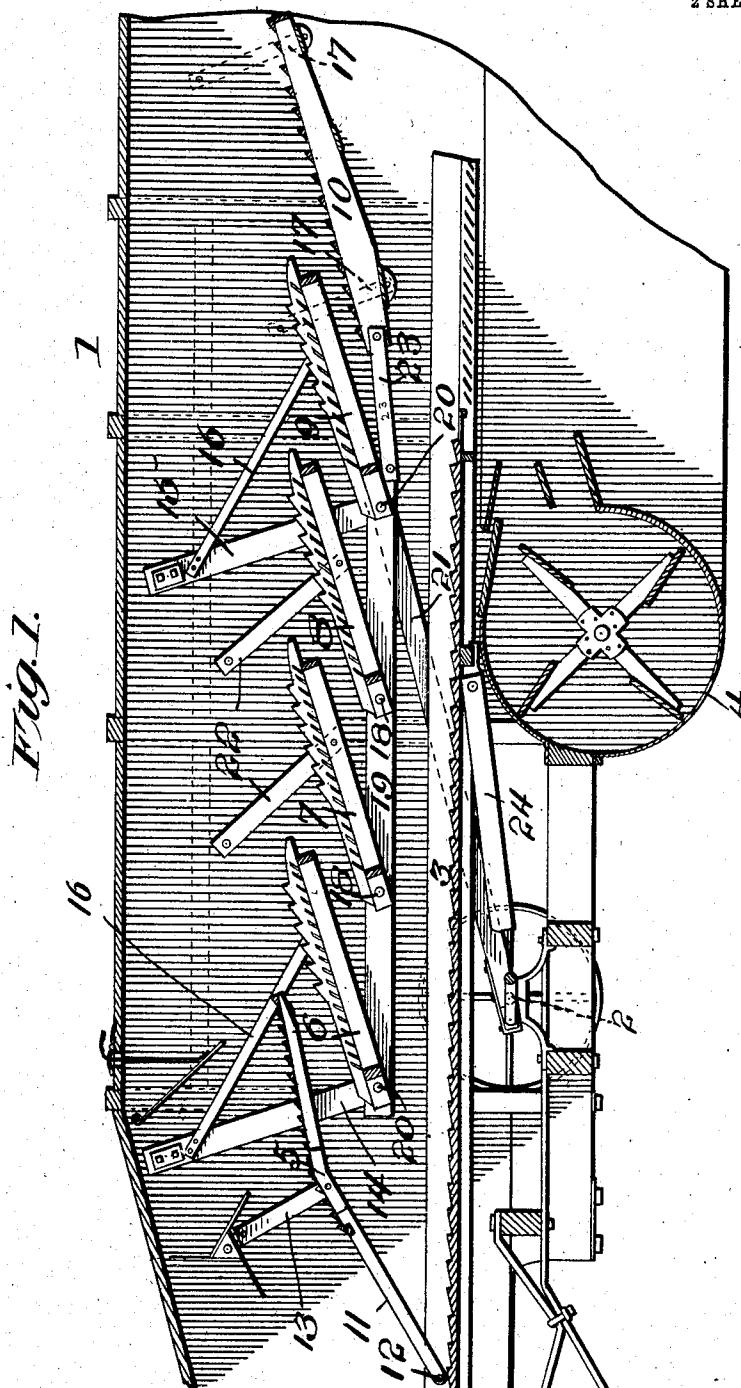
PATENTED MAY 30, 1905.

W. H. S. BRADY.

STRAW SHAKER FOR THRESHING MACHINES.

APPLICATION FILED DEC. 30, 1904.

2 SHEETS—SHEET 1.



Witnessed.
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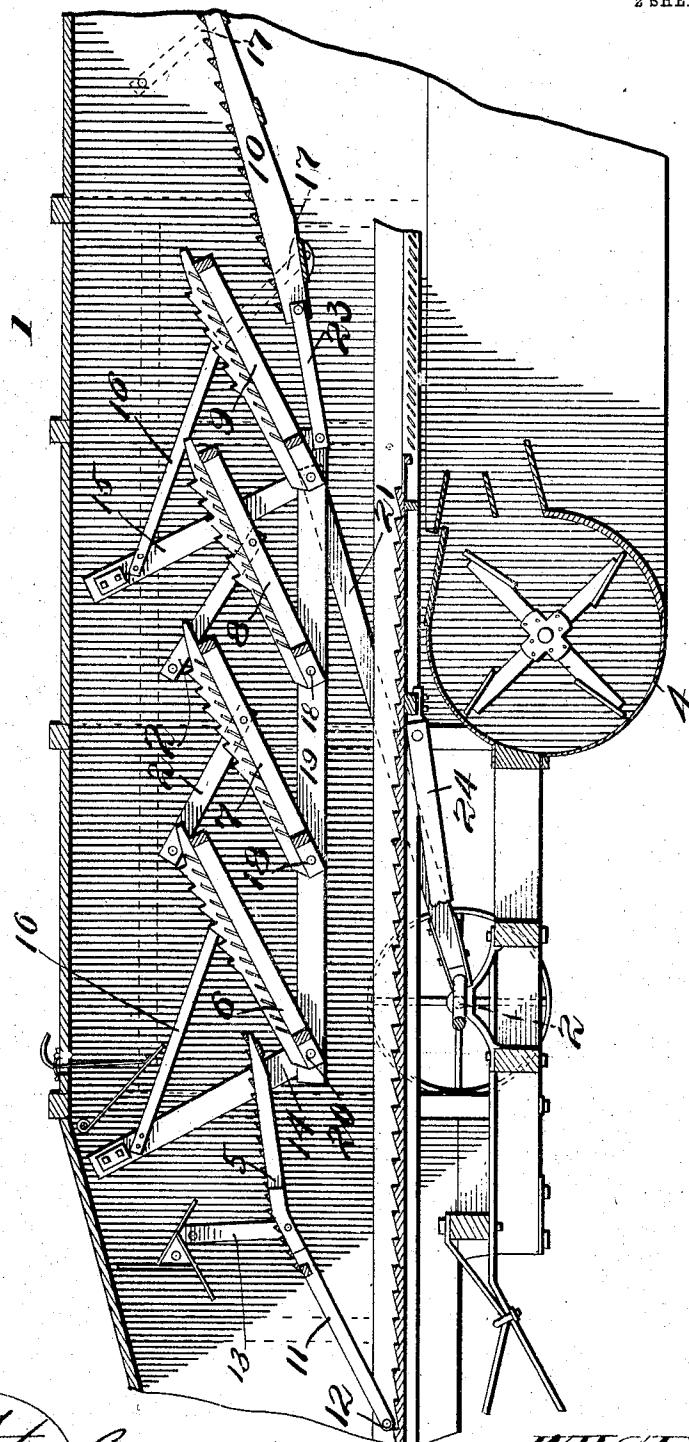
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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STRAW-SHAKER FOR THRESHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,402, dated May 30, 1905.

Application filed December 30, 1904. Serial No. 239,017.

To all whom it may concern:

Be it known that I, WILLIAM H. SEWARD BRADY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Straw-Shaker for Threshing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

- o This invention relates to straw-shakers for threshing-machines, the general object of the invention being to simplify and improve the construction of the shaker movement of a threshing-machine, obtaining a reciprocatory movement forward and backward, together with a peculiar uplift in the arc of a circle, and means by which said movement is obtained embodying a minimum number of parts and wearing-points, thus materially reducing the friction and increasing to a material extent the life and efficiency of the shaker movement as a whole. The peculiar uplift of the shakers or separating-racks in the arc of a circle combined with the forward-and-backward reciprocatory movement is a most important and valuable feature in a threshing-machine and has been found in practice to give very much better agitation and shake to the straw, thereby effecting a much better separation of the grain from the straw as compared with shaker movements which are destitute of such arcuate uplift.

By means of the construction hereinafter described the weight of the shaker movement considered as a whole is materially reduced, the number of parts—such as bolts, pitmen, and other connections—lessened, and incident thereto lost motion is reduced to a minimum and at the same time friction is minimized. By doing away with the end play of the usual connecting-pitmen all of the shakers are caused to be elevated and lowered uniformly, thus producing a uniform action on the straw in its passage over the separator movement, the shakers or separating-racks being connected to a common actuating-frame. By this means the friction and wear are reduced to a very considerable degree and all toggle-

joints and the consequent lost motion incident thereto are dispensed with.

Under the construction employing pitmen for each shaker if the operator desires to tighten up the bolts in the shakers or perform any work in the grain-pan beneath it is necessary for all of the shakers to be removed. Under the construction involved in this invention the links which connect the outer ends of the shakers may be easily disconnected and the shakers themselves may be turned back, thereby giving free access to the pan beneath and allowing the operator to tighten up the bolts in the shaker movement or do any necessary work on the grain-pan beneath. To the attendant of a threshing-machine this is a matter of vital importance.

Under the construction at present in common and popular use each shaker is suspended by a hanger-arm attached rigidly to the foot of the shaker on each side of the separator. As there are four shakers thus connected in a six-shaker machine, there are necessarily eight hanger-arms. Under the construction herein shown and described there are but four hanger-arms, the entire frame being swung by two hanger-arms on each side of the machine, the small links which support the outer ends of the shakers being merely for the purpose of steadyng and guiding the shakers and the wear and strain on said links being not nearly as great as it would be were the shakers hung from the foot or lower end, as is ordinarily done.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a sufficient portion of a threshing-machine to fully illustrate the construction of the shaker movement of this invention, the shakers being shown in the position they occupy at one limit of movement of the actuating crank-shaft. Fig. 2 is a similar view showing the position

the shakers assume when the actuating crank-shaft is at the opposite point of its throw.

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

5 Referring to the drawings, 1 designates the frame or casing of a threshing-machine; 2, the actuating-crank shaft; 3, the reciprocatory grain-pan, and 4 the usual fan, located beneath the grain-pan.

10 The machine illustrated in the accompanying drawings is of the ordinary six-shaker type, the shakers being designated at 5, 6, 7, 8, 9, and 10. It will be observed that the initial shaker 5 is connected by an arm 11 directly to the grain-pan 3 at the pivotal point 12, said shaker being swung from and guided by a link 13 at each side of the machine. The shaker 6 is connected at its lower end to the corresponding lower end of a hanger-arm 14, 15 which is pivotally connected at its upper end to the inside of the machine-casing, it being understood that two of such hanger-arms 14 are employed, one at each side of the machine. In like manner the shaker 9 is supported by hanger-arms 15 at each side of the machine. With respect to the shakers 6 and 9, they are braced relatively to their hanger-arms by means of obliquely-disposed bars or braces 16. The final shaker 10 is supported at 20 opposite ends by pivotal links 17. The intermediate shakers 7 and 8 are connected pivotally at their lower ends, as shown at 18, to a reciprocatory frame or pair of common connecting-bars 19, which also connect pivotally at 20 to the lower ends of the shakers 6 and 9, all of the shakers 6, 7, 8, and 9 being thus connected in the same manner to the common connecting-frame 19, the latter being actuated from the crank-shaft 2 by means of a pitman 21 inter-

25 posed between the crank-shaft and frame 19, as shown, and connecting with the frame 19 at any suitable point. The outer ends of the shakers 7 and 8 are supported by means of pivotal links 22 of suitable length to give the 30 desired arcuate or circular uplift, and by preference the links are so connected to the shakers 7 and 8 that they may be readily detached for the purpose of enabling said intermediate shakers to be thrown back and give access to the 35 grain-pan beneath and allow the bolts of the shaker movement as a whole to be tightened and wear compensated for. A connecting link or pitman 23 is interposed between the frame 19 and the last shaker 10 for transmitting motion 40 to said shaker, and another pitman 24 is inter-

posed between the grain-pan and the crank-shaft in order to transmit motion to said pan. All of the shakers overlap each other, so that the straw passes off one shaker directly upon the next shaker. The frame 19 is open and unobstructed, so that when the intermediate shakers are thrown back out of the way easy access is afforded to the grain-pan and other parts beneath.

I do not, of course, confine myself to links 65 of any special length nor to the particular disposition of the links as regards their point of pivotal connection either with the shakers or the casing or frame of the machine, nor do I confine myself to any particular number of shakers, this being governed by the capacity and size of the machine in connection with which they are used. I therefore reserve the right to make such changes in the general form, construction, and arrangement of parts 70 as properly fall within the scope of the appended claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A shaker movement for threshing-machines comprising an open unobstructed reciprocatory frame, hanger-arms pivotally supporting said frame, shakers having rigid connection with said hanger-arms, other shakers pivotally connected to said frame, and pivotal links supporting the last-named shakers at points remote from the points of connection thereof with said frame, all of the shakers overlapping each other.

2. A shaker movement for threshing-machines comprising an open unobstructed reciprocatory frame, hanger-arms supporting said frame and imparting an arcuate or uplift movement thereto, shakers rigidly connected to said hanger-arms and pivotally connected to said frame, other shakers pivotally connected to said frame, and pivotal links supporting said last-named shakers at points remote from their points of connection with the reciprocatory frame, said links being detachable from the shakers with which they connect, and all of the shakers overlapping each other.

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

WILLIAM H. SEWARD BRADY.

Witnesses:

M. M. BOWLUS,
C. C. CHAMPION.