

No. 817,289.

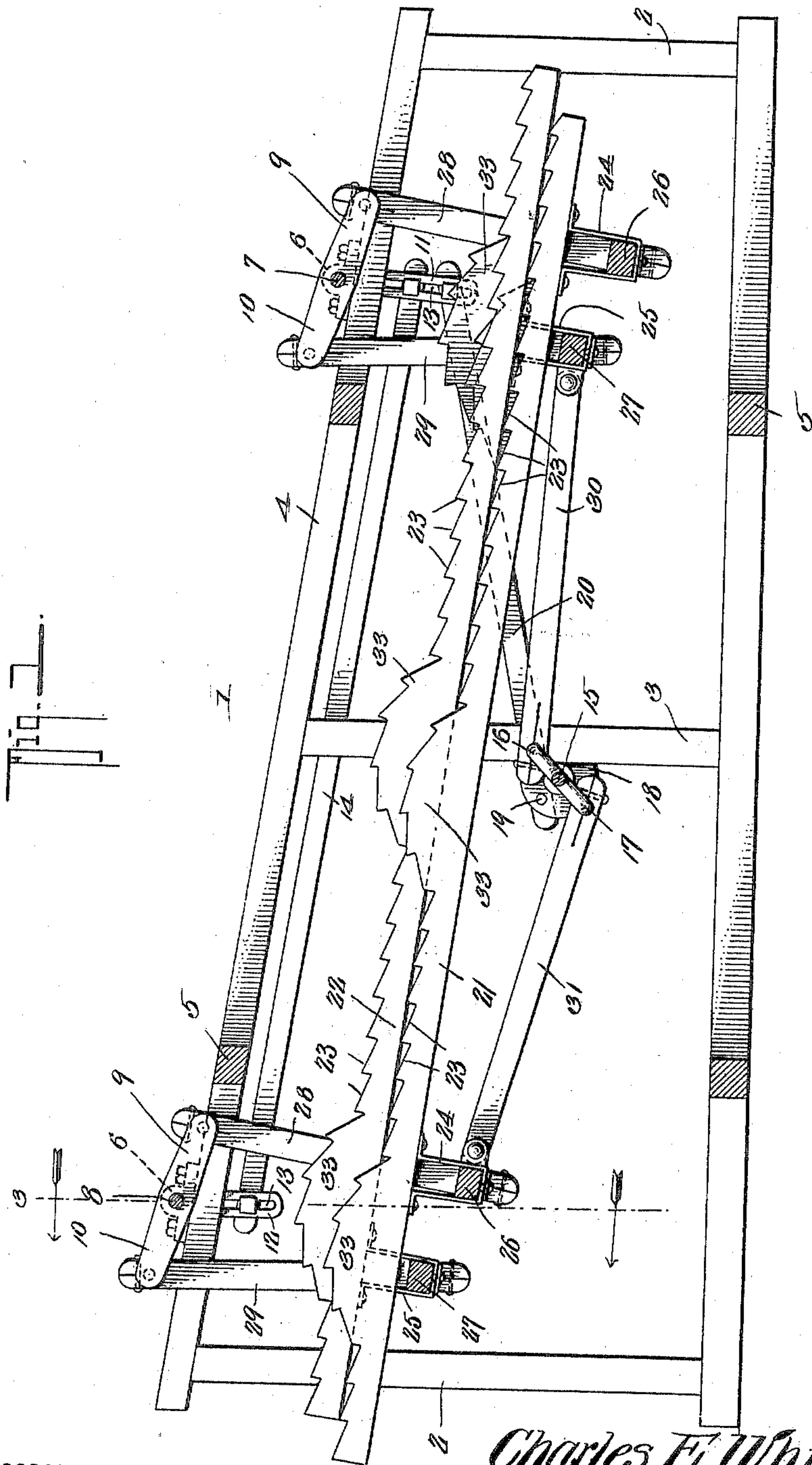
C. E. WHITNEY.

PATENTED APR. 10, 1906.

STRAW RACK FOR THRESHING MACHINES.

APPLICATION FILED APR. 20, 1905.

2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
Wm. Baggett

Charles E. Whitney
Inventor
by *C. A. Snow & Co.*
Attorneys

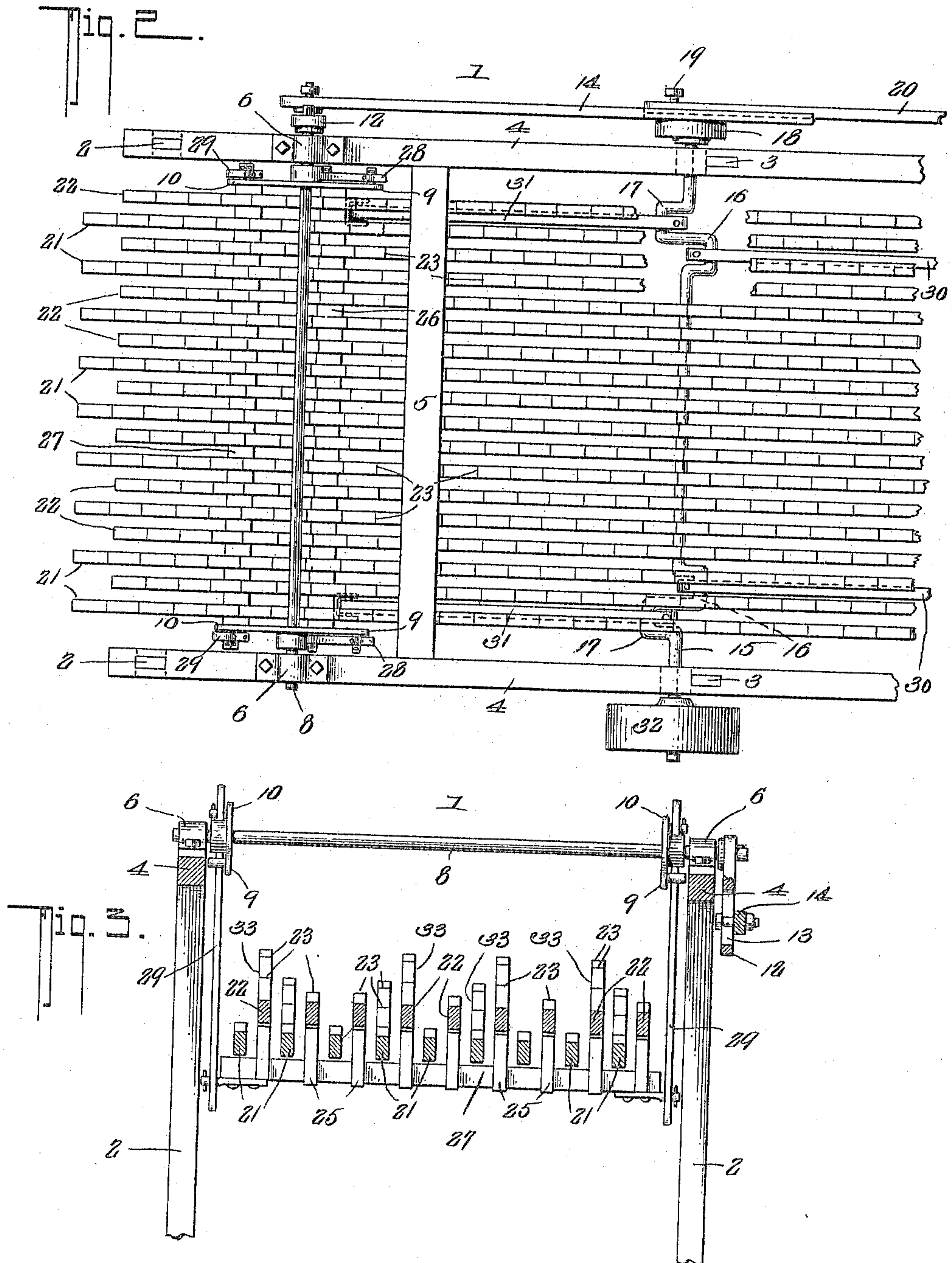
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Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES E. WHITNEY, OF WEBSTER, SOUTH DAKOTA, ASSIGNOR OF
ONE-FOURTH TO EUGENE E. PRATT AND ONE-FOURTH TO FRANK L.
DEAN, OF WEBSTER, SOUTH DAKOTA.

STRAW-RACK FOR THRESHING-MACHINES.

No. 817,289.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed April 20, 1905. Serial No. 256,524.

To all whom it may concern:

Be it known that I, CHARLES E. WHITNEY, a citizen of the United States, residing at Webster, in the county of Day and State of South Dakota, have invented a new and useful Straw-Rack for Threshing-Machines, of which the following is a specification.

This invention relates to straw-racks for threshing-machines; and it has particular reference to that class of straw-racks which comprise a pair of oppositely-vibratory racks or members which coöperate to form a single device for moving and agitating the straw, so as to assist in the separation of the grain and to move the straw in the direction of the tail end or exit of the machine.

The present invention has for its object to improve and simplify the construction and operation of this class of devices; and with these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claim.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications to which recourse may be had within the scope of the invention and without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a sectional elevation of a straw-rack constructed in accordance with the principles of the invention. Fig. 2 is a top plan view of one end of the straw-rack. Fig. 3 is a transverse sectional view taken on the plane indicated by the line 3 3 in Fig. 1.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The supporting-frame of the straw-rack, which is a portion of the frame of a threshing-machine, has been shown at 1, said frame including end uprights 2 2 and an intermediate upright 3, supporting the inclined cap-

beams 4 4. Braces and reinforcements, as 5, may be used wherever needed.

The cap-beams 4 4, which are inclined in an upward and rearward direction, are provided near their front and rear ends with boxes 6, affording bearings for a pair of rock-shafts 7 and 8, each of which is provided with forwardly-extending arms 9 and rearwardly-extending arms 10. Each of said rock-shafts is also provided at one end with a depending arm, said arms being designated, respectively, 11 12, said arms being each provided with a slot 13 for adjustable connection with a link-rod 14, whereby motion will be transmitted from one to the other of said rock-shafts.

Supported for rotation upon the upright 3 is a driven shaft 15, having oppositely-extending cranks 16 17, carrying also a disk 18, provided with a wrist-pin 19, which is connected by a pitman 20 with the slotted arm 11, depending from the rock-shaft 7, the connection being adjustable, as will be readily understood, in order that the extent of the movement may be regulated.

The straw-rack proper includes a plurality of bars 21 22, arranged in alternate order, said bars being serrated or provided with ratchet-teeth or fish-backs, as 23, upon their upper faces. The said bars are provided on their under sides near their front and rear ends with depending U-shaped clips 24 and 25, supporting and firmly secured to cross-bars 26 and 27, the former of which, 26, thus serve to connect and support the bars 21, while the latter, 27, connect and support the bar 22. The cross-bars 26 are connected by means of links or hangers 28 with the arms 9, extending from the rock-shafts 7 and 8. The cross-bars 27 are similarly connected by links or hangers 29 with the arms 10, extending from said rock-shafts.

The cranks 16 of the driven shaft 15 are connected by pitmen 30 with one of the cross-bars 27. The cranks 17 are in like manner connected by pitmen 31 with one of the cross-bars 26.

When the shaft 15, which is provided with a driving-pulley 32, is rotated, oscillatory motion is transmitted through the pitman 20, the arms 11 12, and the link 14 to the rock-shafts 7 and 8, thus imparting to the straw-

rack members, which are composed, respectively, of the bars 21 and 22, a vertical reciprocatory movement. At the same time a longitudinal reciprocatory movement is impart-
5 ed to the said straw-rack members through the medium of the cranks 16 17 and the pitmen 30 31. By these combined movements each of the straw-rack members will be caused to gyrate in an approximately vertical
10 plane, and it will be observed that the movements of the said straw-rack members are in opposite directions, so that when one ascends the other descends and when one moves in a forward direction the other moves in a rear-
15 ward direction in a way which is highly effective in shaking and agitating the straw passing over the rack, so as to separate the grain which is permitted to drop between the bars 21 and 22, which of course are suitably
20 spaced apart, the straw being meanwhile fed in the direction of the tail end of the machine.

Some of the rack-bars 21 and 22 are provided with a plurality of toothed or serrated segmental humps 33, the humps of the sev-
25 eral bars being preferably disposed in transverse alinement, as clearly seen in Fig. 1, the alinement, however, being non-permanent, owing to the movement of the bars, said alinement existing when all of the bars are at the
30 center of their longitudinal movements. These humps prove very effective, in conjunction with the intermediate bars which are not provided with humps, in tearing asunder matted straw as it passes over the
35 carrier, thus increasing the efficiency of the device for separating the grain from the straw.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this
40 invention will be readily understood by those skilled in the art to which it appertains. The general construction is simple and effective for the purposes set forth, and it is free from obstructions to the passage of either grain or
45 straw in the desired directions.

It will be observed that owing to the adjustable connection of the pitman 20 with the slotted arm 11 the extent of the throw or movement of the straw-rack members may be very conveniently regulated. By the ad- 50
justable connection between the rock-shafts, which includes the link-rod 14, adjustably connecting the slotted arms 11 and 12, the throw or movement of the rock-shafts may be varied, so that the vertical reciprocatory 55
movement of the straw-rack members may be regulated at either end of the device.

In place of the driving-shaft 15, herein shown, a rock-shaft might be used, said shaft being provided with radially-extending arms 60
for connection with the pitmen 30 and 31. The rotary driving-shaft 15, however, is preferred as causing less vibration during the operation of the machine.

Having thus described the invention, what 65
is claimed is—

A framework, rock-shafts supported therein and having forwardly and rearwardly extending arms, hangers depending from said arms, two independently-movable straw- 70
rack members supported by the hangers depending respectively from the forwardly and from the rearwardly extending arms, a driven shaft having oppositely-extending
75 cranks, pitmen connecting said cranks with the straw-rack members, slotted arms depending from the rock-shafts, a link-rod connected adjustably with said slotted arms to transmit motion between the rock-shafts of
80 variable extent, and a pitman connecting one of the slotted arms adjustably with a crank upon the driven shaft.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES E. WHITNEY.

Witnesses:

EUGENE E. PRATT,
FRANK L. DEAN