

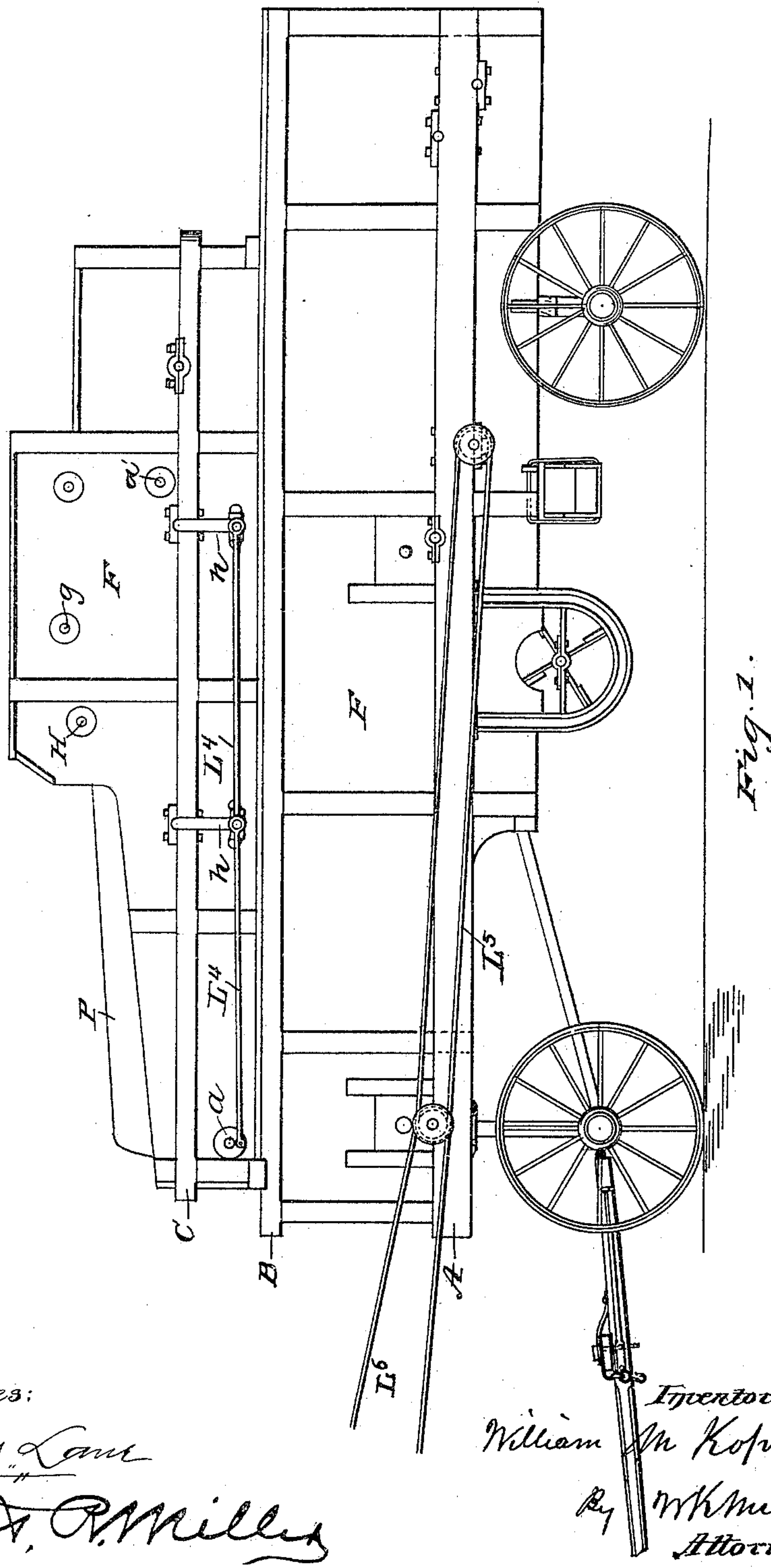
(No Model.)

3 Sheets—Sheet 1.

W. M. KOPPES.
THRASHING MACHINE.

No. 491,485.

Patented Feb. 7, 1893.



Witnesses:

E. S. Lane

Chas. P. Miller

Inventor

William M. Koppes

By W. H. Miller

Attorney—

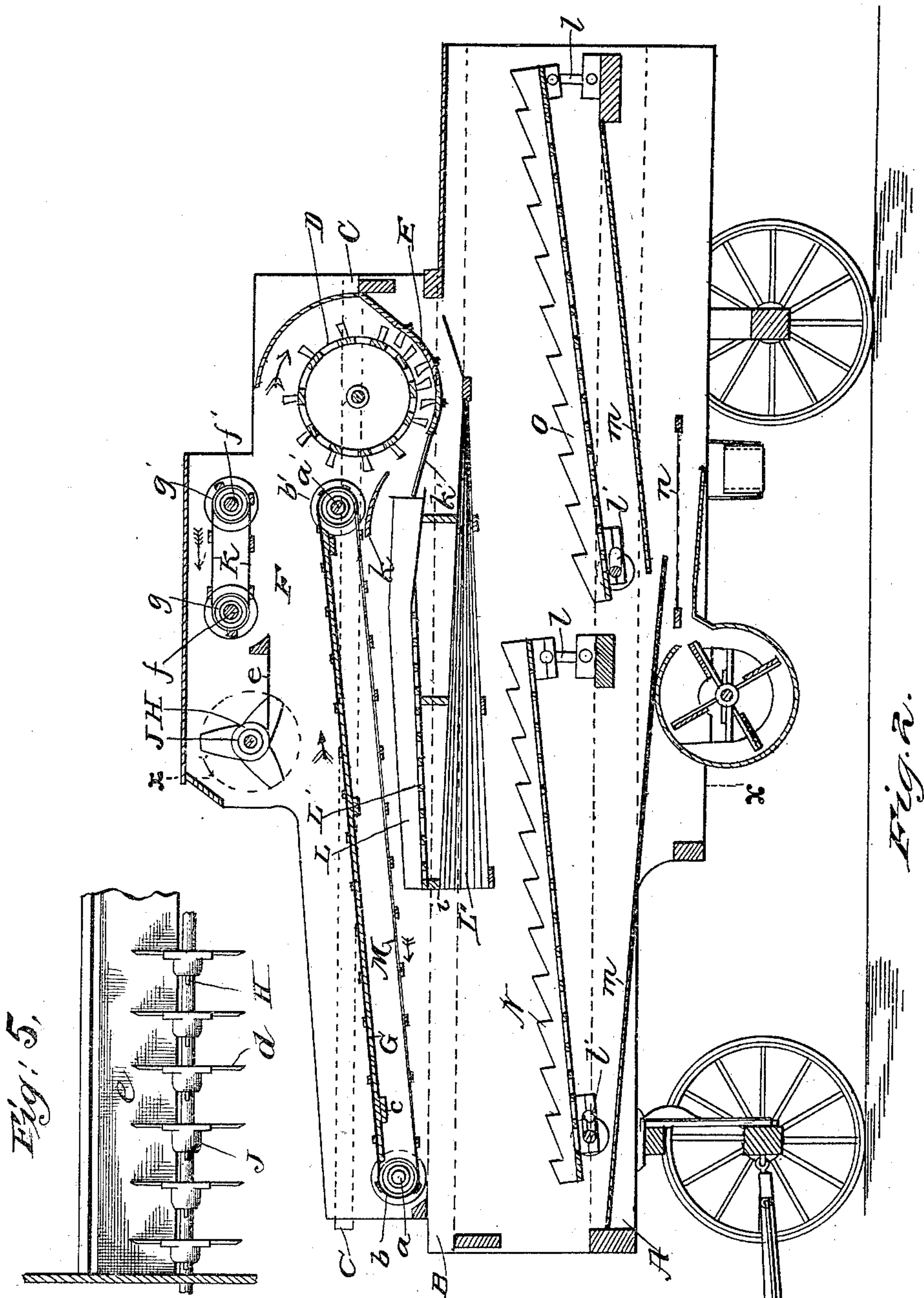
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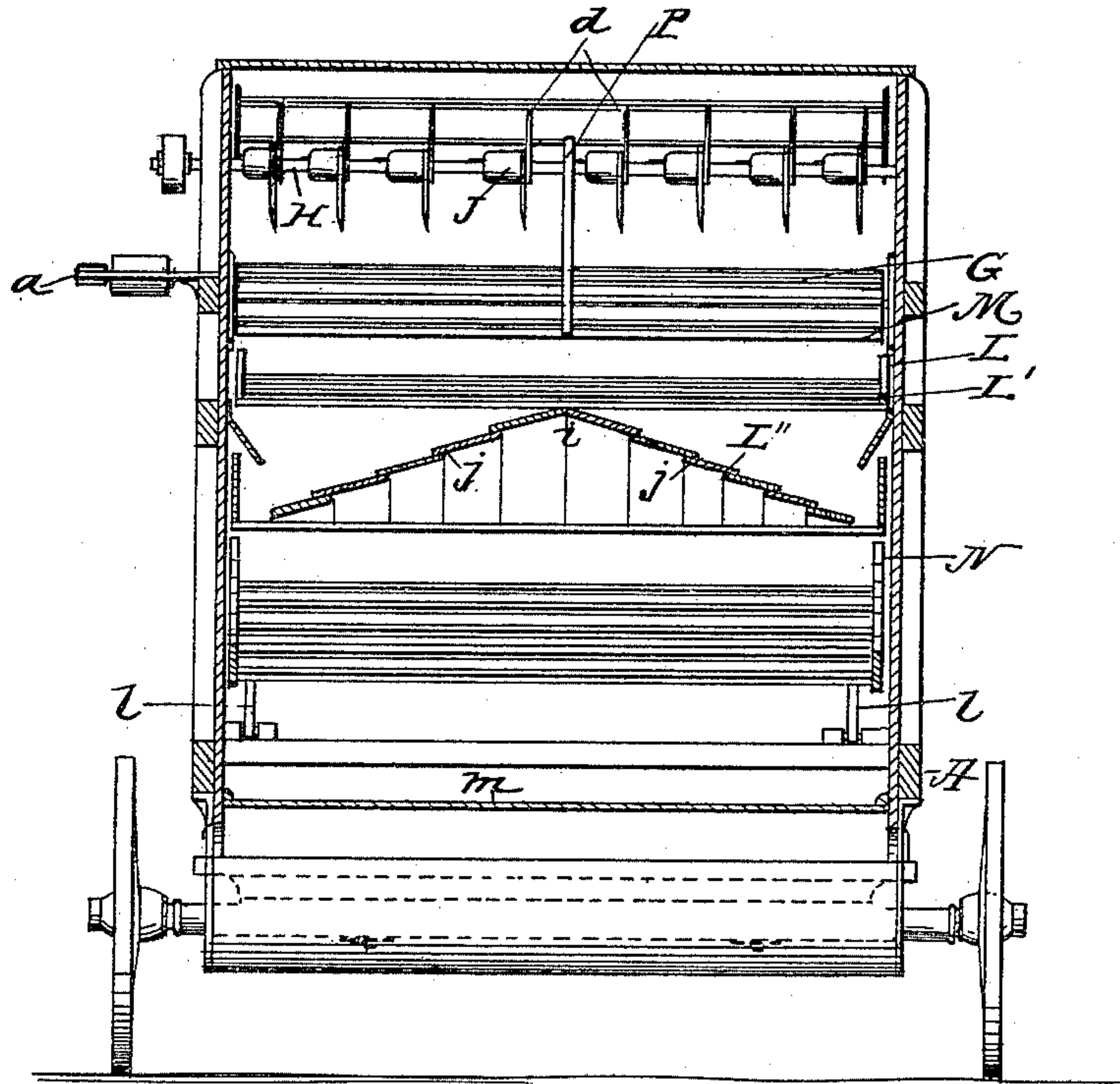


Fig. 3.

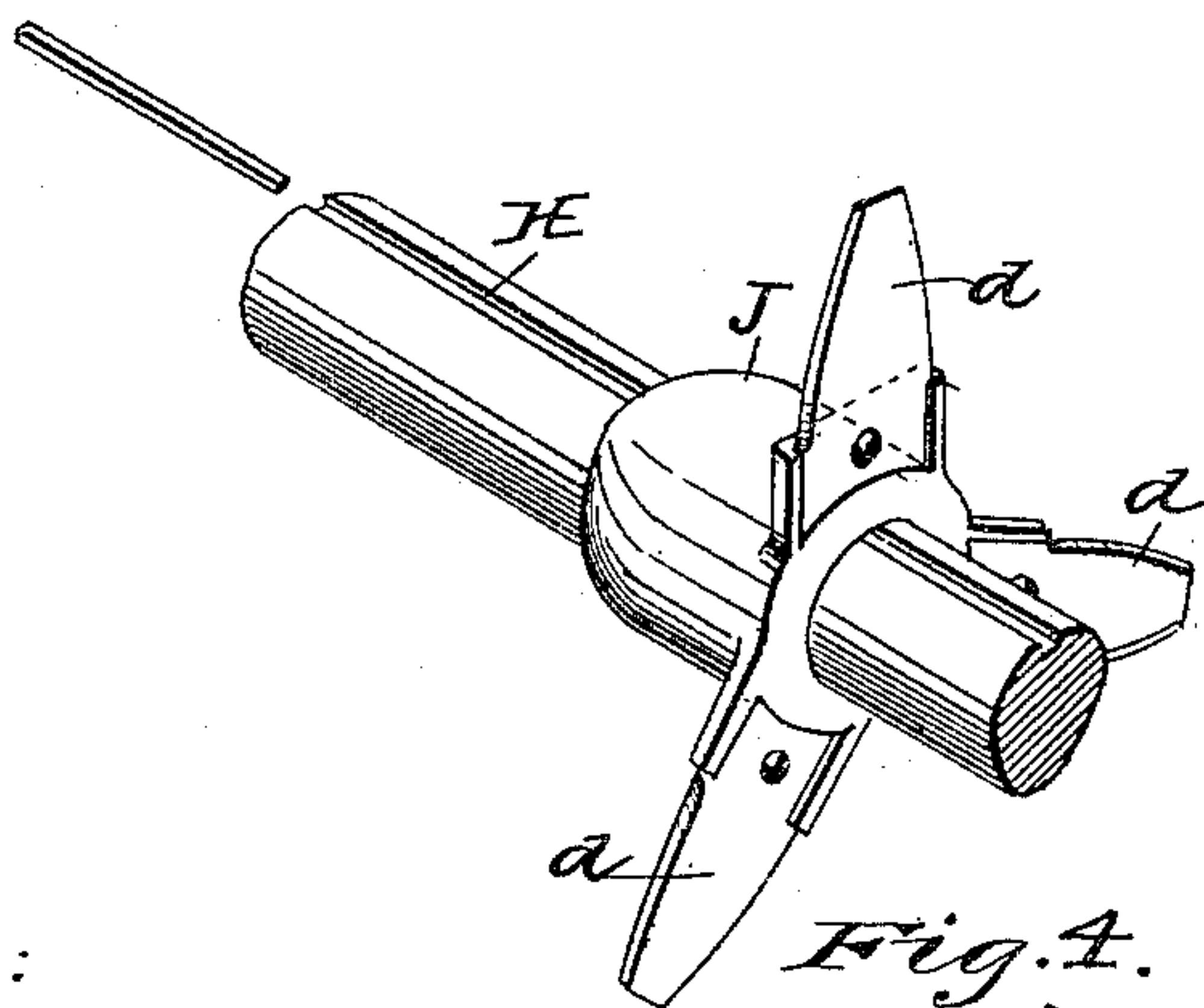


Fig. 4. Inventor
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Witnesses:
Ed. G. Lane
Chas. A. Miller

UNITED STATES PATENT OFFICE.

WILLIAM M. KOPPE, OF ORRVILLE, OHIO.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 491,485, dated February 7, 1893.

Application filed March 28, 1892. Serial No. 426,760. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. KOPPE, a citizen of the United States, and a resident of Orrville, county of Wayne, State of Ohio, have
5 invented a new and useful Improvement in Thrashing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

10 My invention relates to improvements in thrashing machines, and consists in providing in a thrashing machine and a part thereof, a feeder and band cutter, the parts so arranged that the straw so fed will pass over and under
15 an overshot thrashing cylinder, from which it will be carried to the front end of the machine, when it will be turned, and carried out at the rear end of the machine by the vibrating tables provided therefor.

20 With these ends in view, my invention relates to certain features of construction and combination of parts, as will be hereinafter described and pointed out in the claims.

Figure 1. of the accompanying drawings is
25 a side elevation showing the form of the machine frame and casing. Fig. 2. is a longitudinal, vertical, sectional view showing the interior of the machine. Fig. 3. a cross section of Fig. 2 on line $x-x$. Fig. 4. is a perspective
30 of a fragment of the band cutter shaft and one of the cutter heads. Fig. 5. is a plan view of the cutter comb.

Letters of reference indicate corresponding parts in all of the figures of the drawings.

35 Side timbers or frame pieces, A, B, and C, which are horizontal and in vertical order, form the principal support for the various vibrating and rotary parts of the machine. The thrashing cylinder D is supported as
40 shown on the frame piece C, under the cylinder is placed a toothed concave E; these parts may be of any of the well known and approved forms.

To feed the sheaves to the thrashing cylinder, cross shafts $a a'$ are journaled to the side
45 boards F, on which is mounted flanged pulleys $b b'$. About these pulleys $b b'$ is placed an open or slatted carrier G, which receives its driving power from the shafts $a a'$, the
50 top part of the carrier to move toward the cylinder D. The lower part to form a rake

to draw the straw to the front end of the machine as hereinafter explained.

Under the upper side of the carrier is placed a floor c , which serves as a support for the carrier. Above and over the carrier the cutter
55 shaft H, is journaled to the side boards F, as shown, on which is mounted a series of cutter heads J, having band cutters d secured in an outwardly projected flange portion, the cutter
60 to rotate in a direction opposite to that of the cylinder. At the rear of the cutter heads is provided a comb e the slits thereof correspond with the band cutters d ; this comb
55 serves to hold the straw down, and from following the movement of the cutters. Above and to the rear of the band cutter, cross shafts $f f'$ are journaled to the upper portion of the side board F, on which is mounted flanged
70 pulleys $g g'$ about which is placed a short open auxiliary carrier belt or compressor K, which serves to compress or hold down and feed the straw to the cylinder.

Under and to the front of the thrashing cylinder, and carrier G, is provided a vibrating
75 frame L, which is supported on hangers h as shown in Fig. 1; at the top of said frame is a perforated table L' , under which is provided a grain table L'' having a raised center i , forming sides j , that slope downwardly
80 and outwardly toward the sides of the machine, as shown in Fig. 3. Under the rear end of the carrier G, is placed a guide plate k , and to the side of the concave, an extension grate k' which two parts form a throat,
85 through which the straw passes from the thrashing cylinder, on to the table L' , and under the carrier G. By the joint operation of the table L' and the under side of the carrier G, forming the rake M, the thrashed straw is
90 moved forward and dumped into the front end of the machine onto the vibrator N, by which it is turned and carried or tossed rearward onto a similar vibrator O, by which it is tossed rearward and out of the machine.
95 The vibrators N and O, are supported on links l at their rear ends, and on cranked shafts l' at their front ends, by which the said vibrators are operated to agitate the straw to shake out the thrashed grain, and to move
100 the straw rearwardly and out of the machines, the grain falling upon the grain boards m by

which it is conducted to the cleaning riddle *n*. The vibrator tables *N* and *O*, may be of any of the well known and approved forms of construction. The thrashed grain that falls from the thrashing cylinder or table *L'*, onto the table *L''*, will be carried by gravity and the movement of the table down to the side of the table, thence through apertures, down to the grain boards *m*, or if preferred a trough like extension may be attached to the sides of the table *L''*, by which the grain may be conducted to the grain board at the front end of the machine.

A reference to Figs. 1 and 2 will at once disclose the object sought by the construction, hereinbefore described that is a thrashing machine having incorporated therewith, and therein, a feeder and band cutter which is essentially a part of, and, wholly within the structure, and for the movement of the thrashed straw from the rear to the front of the machine, thence back over the vibrators and out of the machine, whereby a more perfect separation of the grain from the straw may be had, and thereby a great saving.

By referring to Figs. 1 and 2, it will be noticed that the band cutter and feeder are constructed entirely within, and become a part of a single structure comprising a sheaf carrier, a band cutter and a compressor or feeder, and a thrashing mechanism and separator, supported by the same frame and inclosed by the same siding and deck.

In operation sheaves are placed on the carrier *G*, at each side of the dividing board *P*, and are carried under the cutters *d* by which the band is severed, the cut sheaves are fed to the top portion of the thrashing cylinder by the united operation of the carrier *G*, and compressor or feeder *K*, the straw and grain passing over the cylinder, and through between the cylinder and concave, through the throat formed by the plate *k* and grate *k'*, onto the table *L'*, under the rake *M*, formed by the lower part of the carrier *G*, by the joint operation of which the straw is carried to the forward end of the machine, and thrown down onto the vibrator *N*, by which it is moved rearwardly to vibrator *O*, by which it is thrown out of the machine. The thrashed grain, passing through the grate *k'* and perforated table *L'* to the table *L''* and thence to the grain boards *m*. The grain that passes with the straw from the table *L'* will be shaken out by the vibrators *N* and *O* and fall to the grain boards as hereinbefore stated.

Any suitable means may be provided for imparting to the grain table and separators, a vibratory motion. For instance, to impart such motion to the grain table, links *L⁴* may be connected to the hangers *h* and a pulley on the shaft *a*. And to impart a similar motion to the separators, a belt *L⁵*, may be engaged

with pulleys secured to the ends of the cranks *l'*, and a second belt *L⁶* engaged with one of these pulleys and driven by power from any suitable point.

Having thus fully described the nature and object of my invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination, a thrashing cylinder, an endless carrier to convey the sheaf to said cylinder, a grain table located beneath said carrier in close relation thereto, whereby the straw from said cylinder will be raked over said table by the under side of the carrier, substantially as set forth.

2. In combination, a thrashing cylinder located at the rear end of the machine, and endless carrier extending from the front end of the machine, to said cylinder, a vibratory table located beneath said endless carrier in close relation thereto, a grate extending from the concave of said cylinder to the said table whereby the loose grain is separated and allowed to fall through said grate and the straw raked over the table by the under side of the endless carrier.

3. In combination, a thrashing cylinder, an endless carrier, a band cutter, and an auxiliary carrier or compressor consisting of an endless slatted belt located above the first named carrier, and adapted to force or hold down the bundles after the band has been severed.

4. In combination, a thrashing cylinder, an endless carrier therefor, a traveling auxiliary carrier or compressor located above the same, a band cutter located in advance of said auxiliary carrier or compressor, a table located beneath said endless carrier in such relation that the return side of the endless carrier will come in contact with the straw from the cylinder and rake it over said table, vibrating separator having its end inclined upward whereby the straw after leaving the front end of the grain table will be carried from the front of the machine to the rear thereof and a grain board located beneath said separator, substantially as set forth.

5. In combination, a thrashing cylinder, endless carrier therefor, a perforated grain table located beneath said carrier, a second table located beneath the perforated table and composed of ribs inclining from the center to the sides of the said tables, means for vibrating said tables, vibratory separators located beneath said tables, and a band cutter, substantially as set forth.

In testimony whereof I have hereunto set my hand this 19th day of March, A. D. 1892.

WILLIAM M. KOPPES.

Witnesses:

W. K. MILLER,
CHAS. R. MILLER.