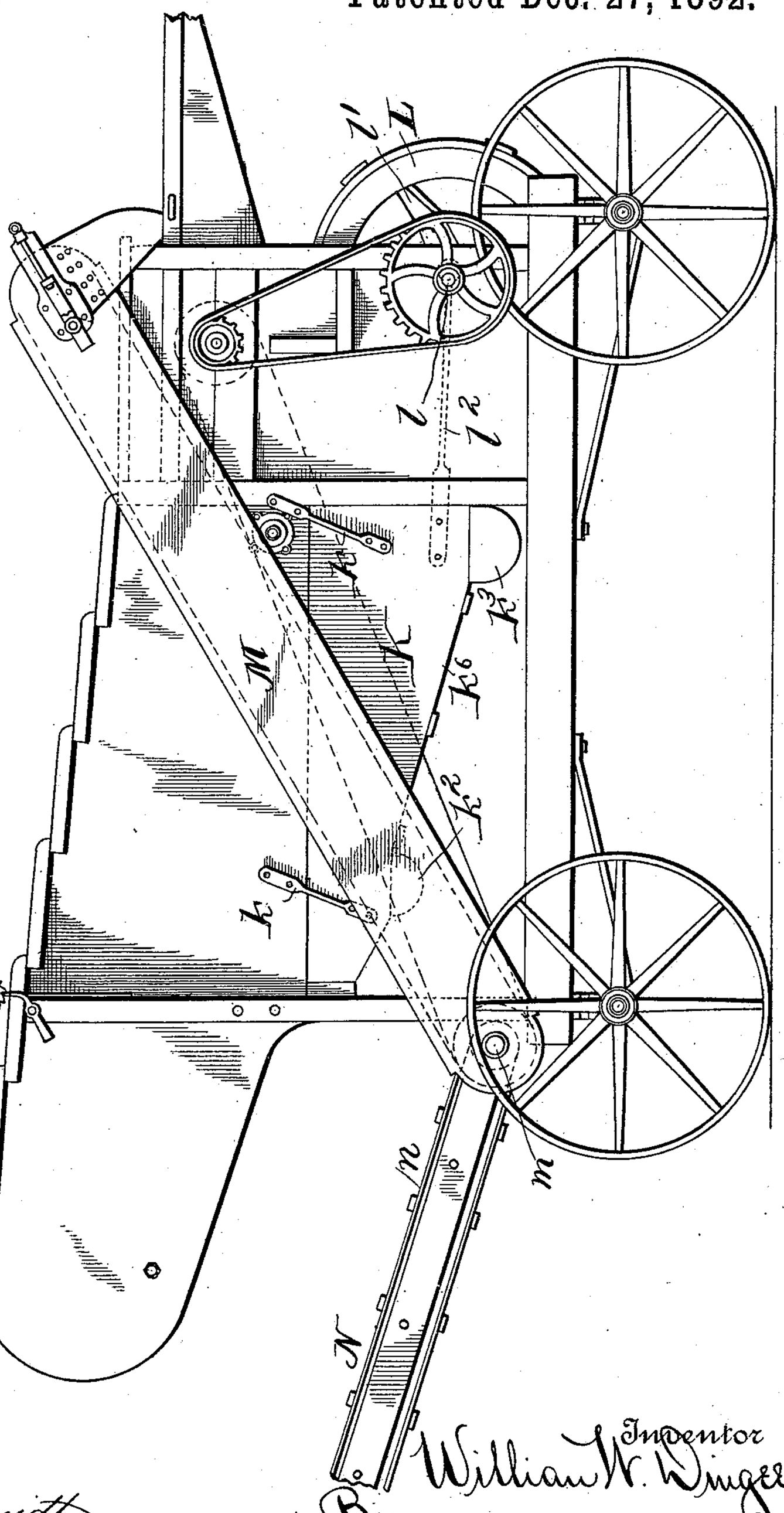
(No Model.) 3 Sheets—Sheet 1.

W. W. DINGEE.

THRASHING MACHINE.

No. 488,730. Patented Dec. 27, 1892.



Witnesses
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(No Model.) 3 Sheets—Sheet 2.

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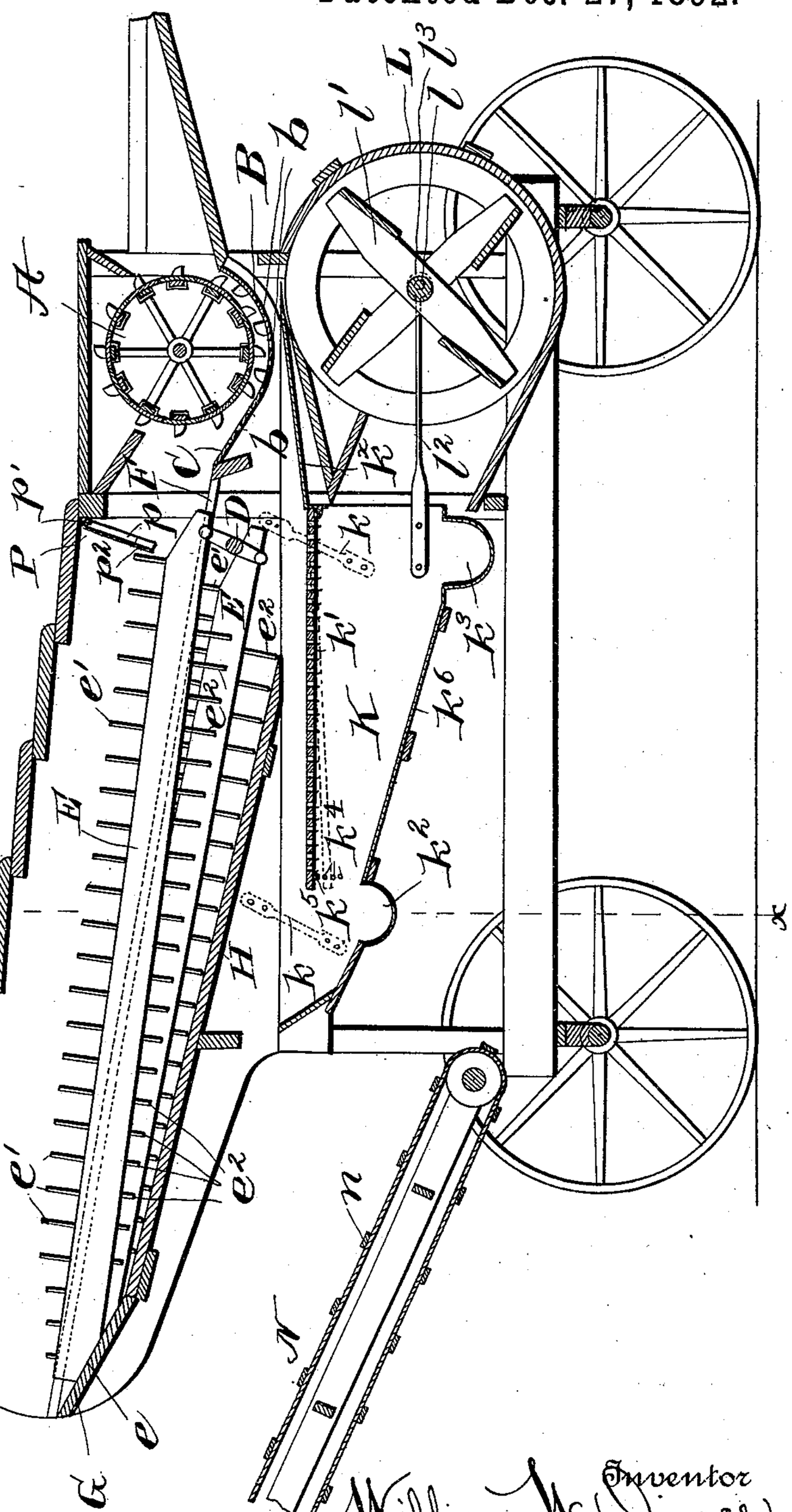

Witnesses
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(No Model.) 3 Sheets—Sheet 3.

W. W. DINGEE.

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Fig. 3.

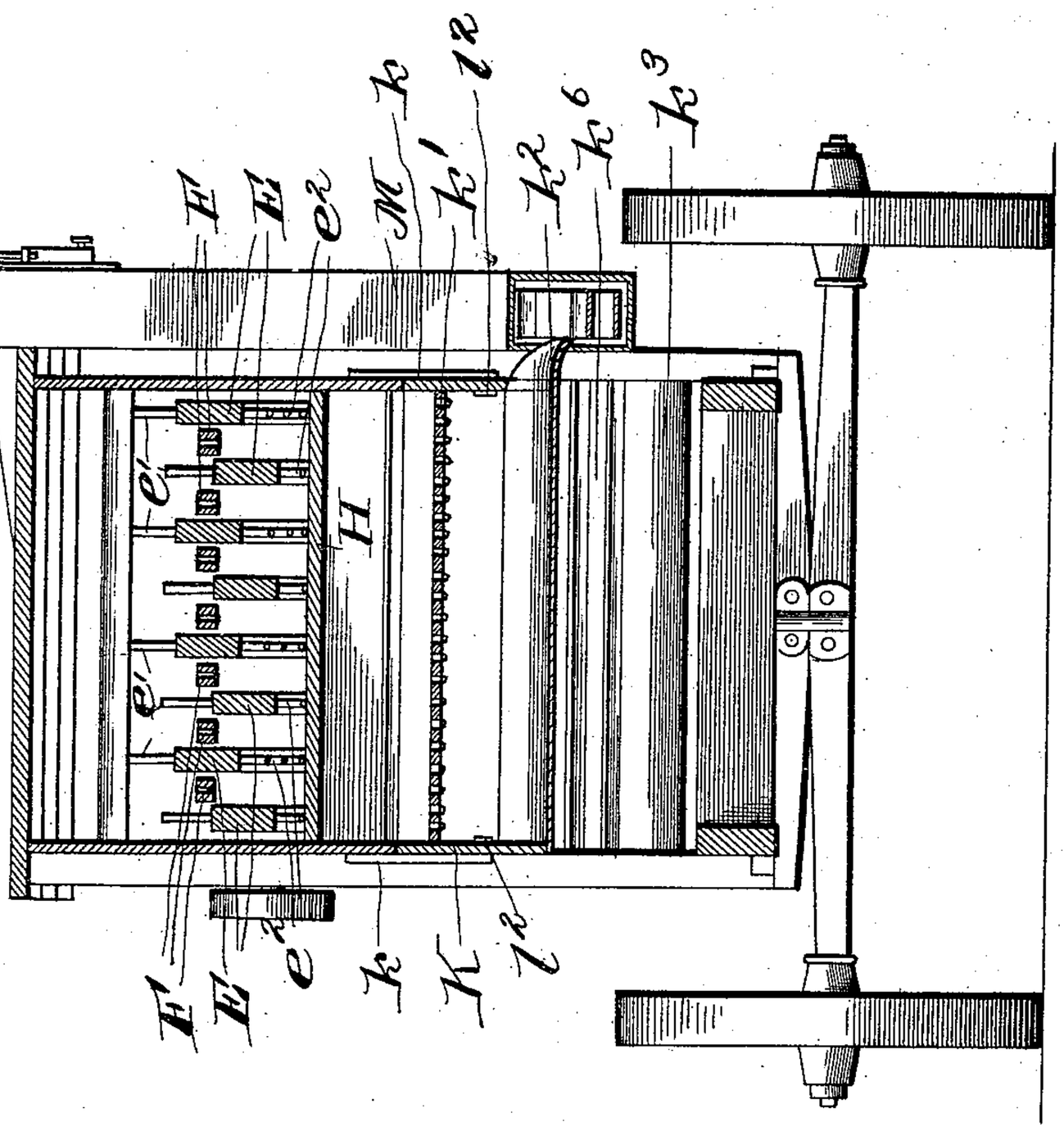
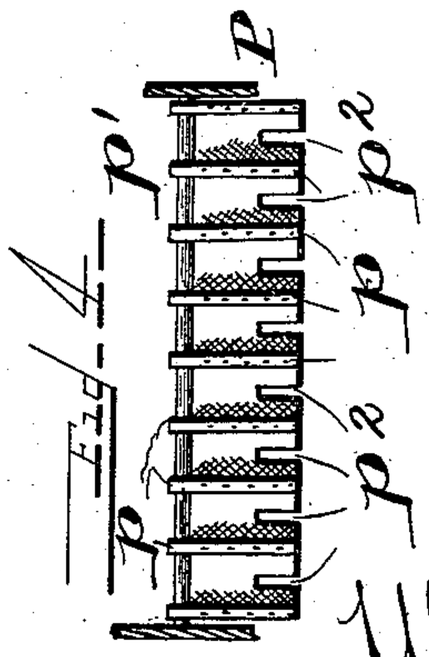


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM W. DINGEE, OF RACINE, WISCONSIN.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 488,730, dated December 27, 1892.

Application filed February 15, 1892. Serial No. 421,611. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. DINGEE, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in thrashing machines and consists in the novel features of construction and combination of parts, whereby the machines are made more compact in form, more cheaply and whereby other advantageous results are secured.

In the drawings I have shown one form in which I have contemplated embodying my invention and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 is an exterior view of one side of a thrashing machine, embodying my invention. Fig. 2 represents a longitudinal section of the said machine. Fig. 3 represents a transverse section on line x—x of Fig. 2. Fig. 4 is a detail view of the flexible check-board.

In the drawings reference being had to the letters of reference marked thereon, A represents the thrashing cylinder of any ordinary or usual construction and B is the concave provided intermediate its teeth with perforations b for the passage of grain therethrough.

C is an inclined grate or perforated plate located in rear of the concave and forming a continuation thereof.

D is a crank shaft extending transversely of the machine and supplied with power in any desired manner, and to this crank shaft is secured a series of double toothed walking rakes E E. In the drawings I have represented the machine provided with eight of these rakes mounted in series of four, on opposite cranks of the shaft D and alternating with each other, so that when four of the rakes are in their highest positions the other four rakes which alternate therewith will occupy their lowest positions as shown in Figs. 2 and 3.

The frame work of the machine is also provided with strips F which extend longitudinally of the machine intermediate each pair of rakes, as shown in Fig. 3, and said strips are perforated to allow any thrashed grain falling upon them to pass through. The rear end of each rake E is beveled as shown at e, and said beveled portions engage and slide upon the inclined bearing surface G, when the shaft D is rotated so that a vertical reciprocating or bounding motion is imparted to the rear ends of said rakes in addition to the endwise reciprocating motion. Beneath the said rakes E E is located the grain table H, which is inclined downwardly toward the cylinder end of the machine, and said rakes E are provided with teeth e' e^2 on both their upper and lower sides, the upper teeth e' being for the purpose of feeding the straw rearwardly and agitating the same, while the lower teeth e^2 assist in conveying the grain down said inclined table.

Beneath the lower end of the grain table H, is the shaking shoe K which extends the full width of the machine and is provided with an inclined bottom k^6, said shoe being suspended by inclined spring hangers k, see Fig. 1, the sides of the shoe forming part of the sides of the casing of the machine. The shoe K is provided with a perforated plate or sieve k' upon which the grain from the grain table H is deposited and the shoe is also provided with an inclined extension $k^\times$ which projects forward beneath the concave and the inclined grate C and conducts all grain passing through the apertures of the same, to the perforated plate or sieve k'. I prefer to hinge the screen k' at its forward end and to provide means for adjusting its rear end, as shown in Fig. 2. In this instance I have shown the sides of the shoe provided with a series of apertures k^4 and a bolt or rod k^5 is made to engage one pair of apertures to support the end of the screen. The shoe is also provided with the tailings spout k^2 and grain delivery spout k^3 which are secured rigidly to the shoe and are therefore reciprocated simultaneously with it.

L is the fan casing in which is placed the revolving fan shaft l carrying the fan or blower l' arranged to deliver a blast of air to the shoe.

Motion is imparted to the shoe by means of spring rods l^2 connected preferably with ec-

centric straps engaging eccentrics l^3 of small throw on the fan shaft. The rods l^2 are of spring material preferably and are rigidly secured to the shoe which in connection with the spring hangers forms a construction by means of which the shoe is rapidly and sharply agitated, in a very effective manner. By means of this construction and by using an eccentric of small throw, the shoe may be operated directly from the fan shaft without intervention of other mechanism.

M is the tailings elevator of ordinary construction having its lower end in proximity to the tailings spout k^2 of the shoe and provided at its upper end with a chute to deliver the tailings to the cylinder, in the usual manner. The elevator belt engages at the lower end of the elevator, a counter shaft m, which extends transversely of the machine and this shaft m forms the driving shaft for the elevator apron n, of the straw stacker N. The side rails of the stacker N are preferably journaled on the shaft m, and the said stacker is raised and lowered and supported by any desired means. I have shown a small windlass n' provided on top of the machine casing for this purpose.

It will be seen that very few shafts are employed in my machine, namely the cylinder shaft, the crank shaft the fan shaft and the stacker apron operating shaft, which also operates the tailings elevator. The connections for supplying power to these shafts are very simple and may be arranged in any desired or suitable way. I prefer to arrange such connections so that all the other shafts will receive motion from the cylinder shaft, which will receive its motion from the engine or other source of power.

The grain will be fed to the cylinder and concave and thrashed out, the straw mixed with grain passing up over the inclined grate C to the walking rakes while parts of the grain freed from the straw will fall through the perforated concave and grate and be conveyed to the shoe by the inclined extension $k^{\times}$. The straw in passing over the rakes is agitated and the grain shaken out, while the straw is fed by the walking rakes, to the end of the machine and deposited upon the stacker apron n, which conveys it to the stack. The grain and unthrashed heads will fall upon the inclined grain table or bottom H, and the teeth e^2 on the lower sides of the rakes will convey it down upon the screen or sieve k' of the shoe where all the grain is subjected to the action of the blast of the fan. The clean grain will drop through the perforations of the screen and be conducted to the grain spout k^3 by the inclined bottom of the shoe, while the unthrashed heads, &c. will not be permitted to fall through said apertures but will pass over the rear end of said screen and fall into the tailings spout k^2 which will convey them to the tailings elevator. The perforated screen or sieve k' can be adjusted to the desired inclination as before stated so as to render it most effective.

In rear of the cylinder H is a flexible retaining device or check-board P for deflecting the flying grain &c. down upon the rakes. This check-board consists in this instance of a series of stiffening strips p connected by flexible material such as canvas or leather, the said strips p being pivotally supported from a rod p' extending across the upper part of the machine. The lower edge of the leather or canvas portion of the check-board is provided with a series of slits or recesses p^2 to allow the teeth of the rakes to pass through.

What I claim and desire to secure by Letters Patent is:—

1. In a thrashing machine the combination with the check board, composed of a series of stiffening strips supported at their upper ends by a pivot rod, and flexible material connecting said stiffening strips, substantially as described.

2. In a thrashing machine the combination with the cylinder and walking rakes, of a supporting shaft, the stiffening strips pivotally supported from said shaft, the flexible material connecting said strips, said material being provided with slits or recesses adjacent to its lower edge to permit the passage of the rake teeth therethrough, substantially as described.

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

WILLIAM W. DINGEE.

Witnesses:
M. P. DINGEE,
W. J. KLING.