

(No Model.)

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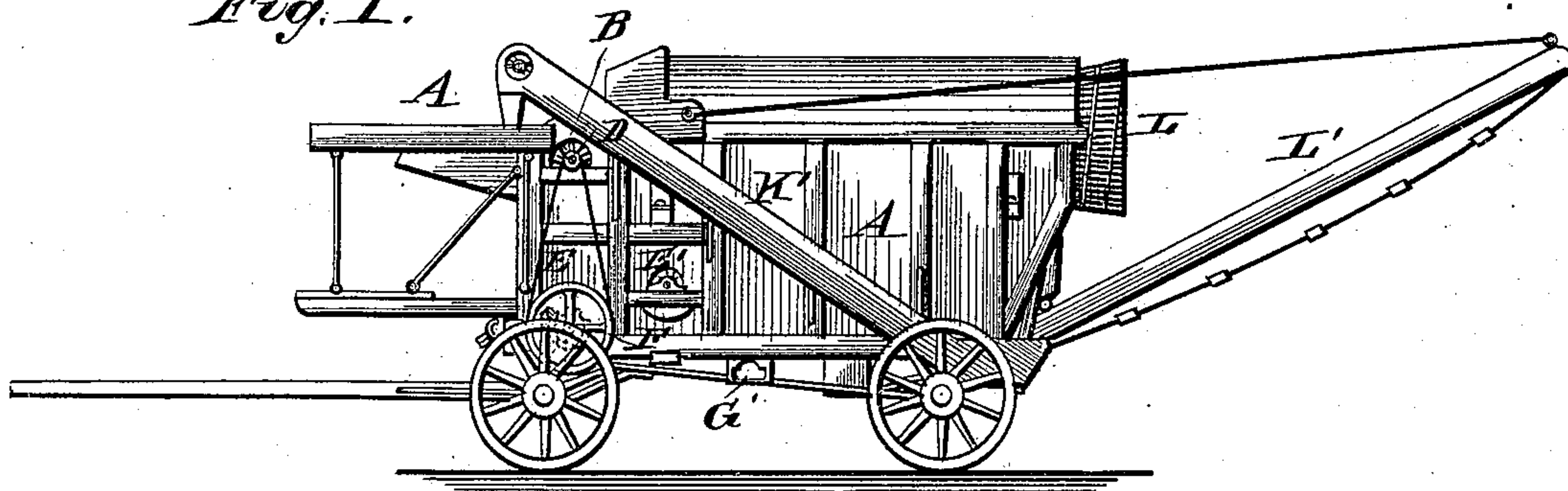
F. PAYNE.

THRASHER AND SEPARATOR.

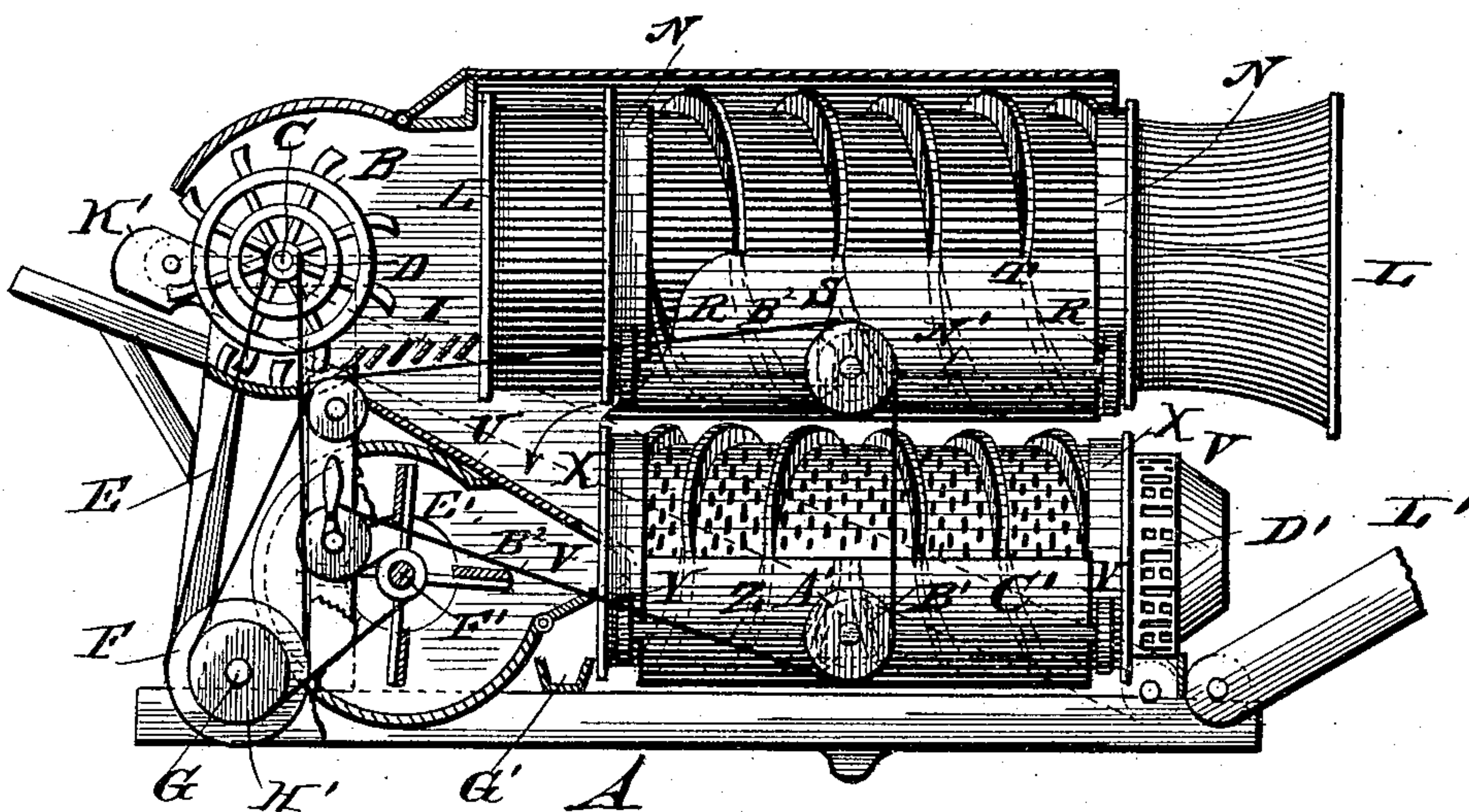
No. 323,726.

Patented Aug. 4, 1885.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*Phil G. Dietrich.*  
*W. R. Keyworth.*

INVENTOR

*Frank Payne.*

BY

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(No Model.)

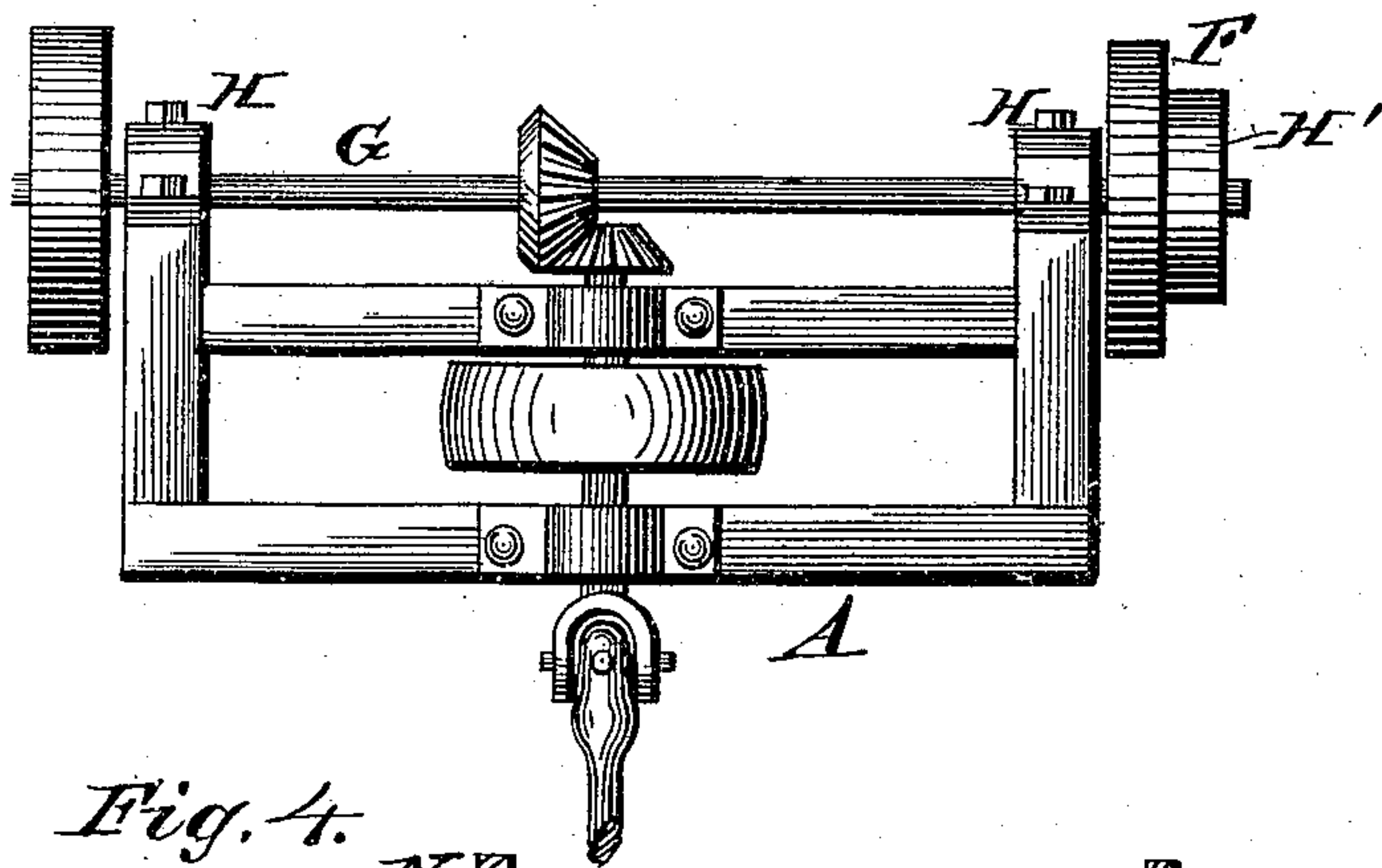
2 Sheets—Sheet 2.

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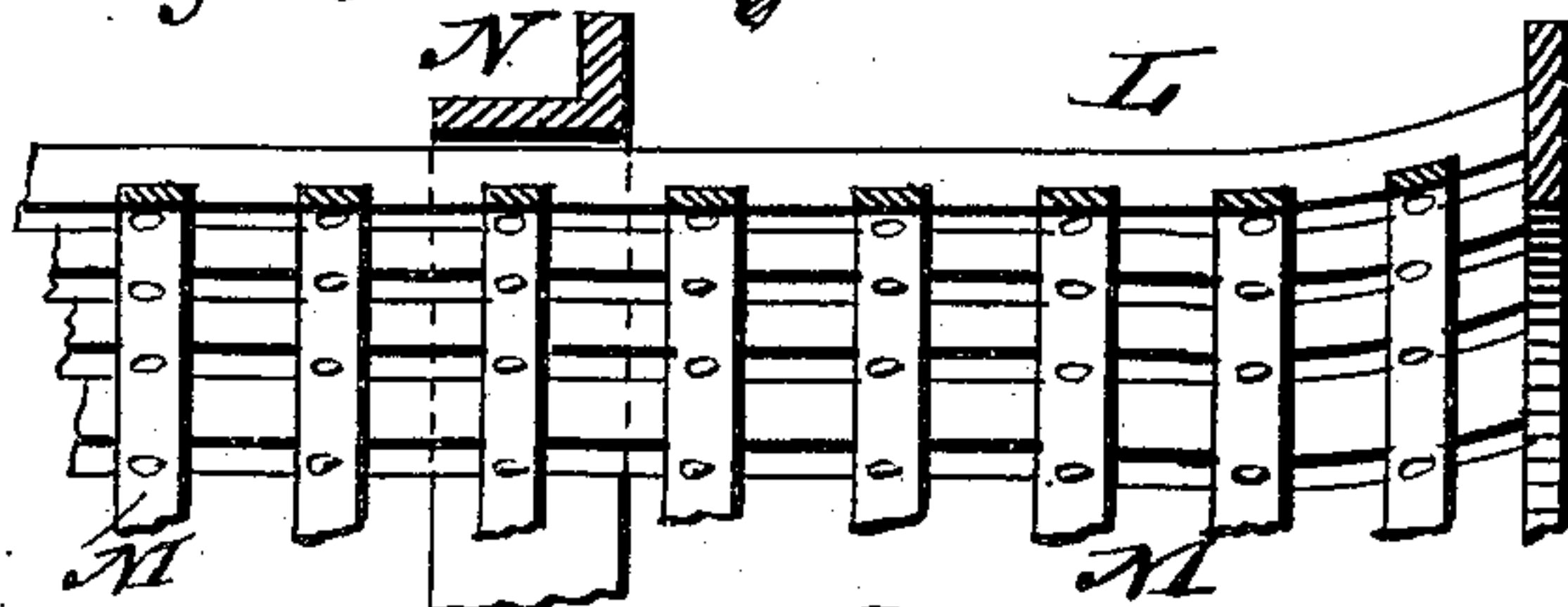
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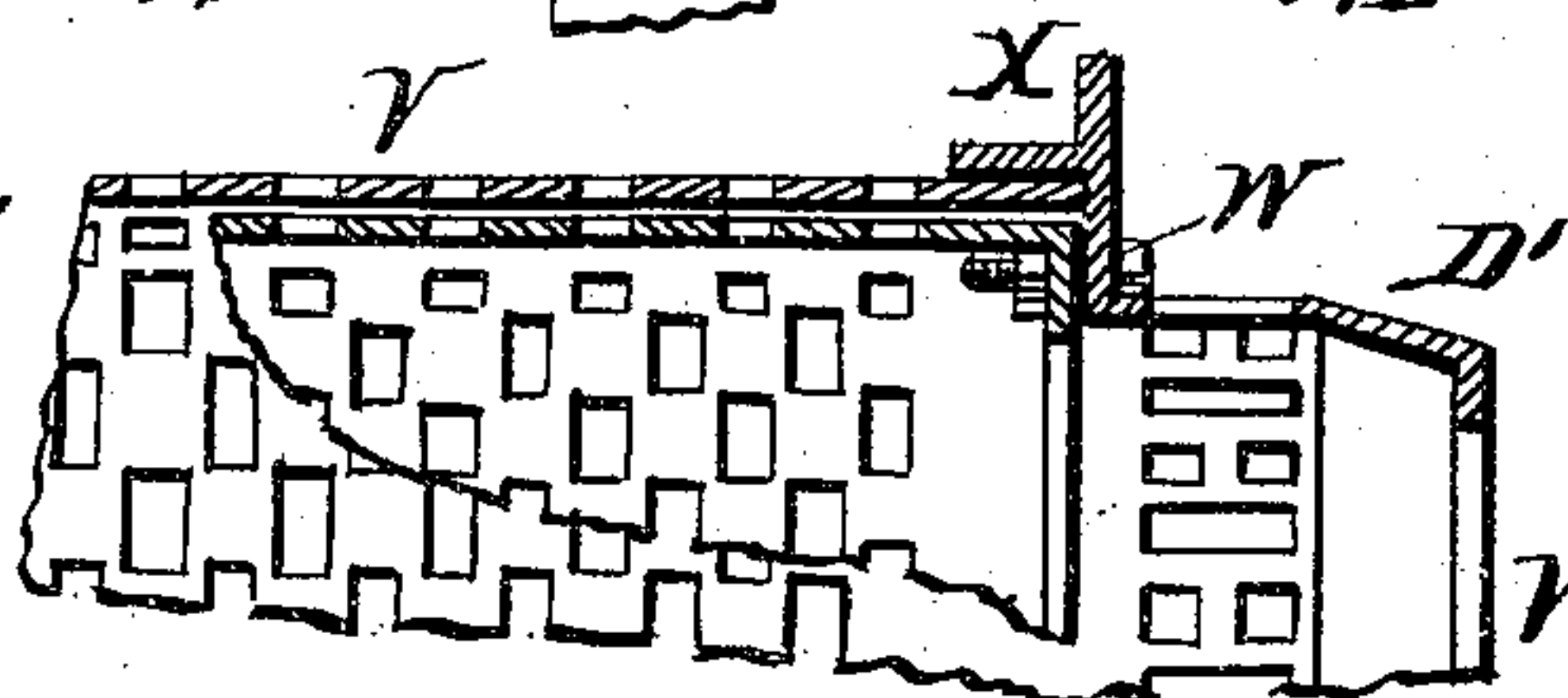
*Fig. 3.*



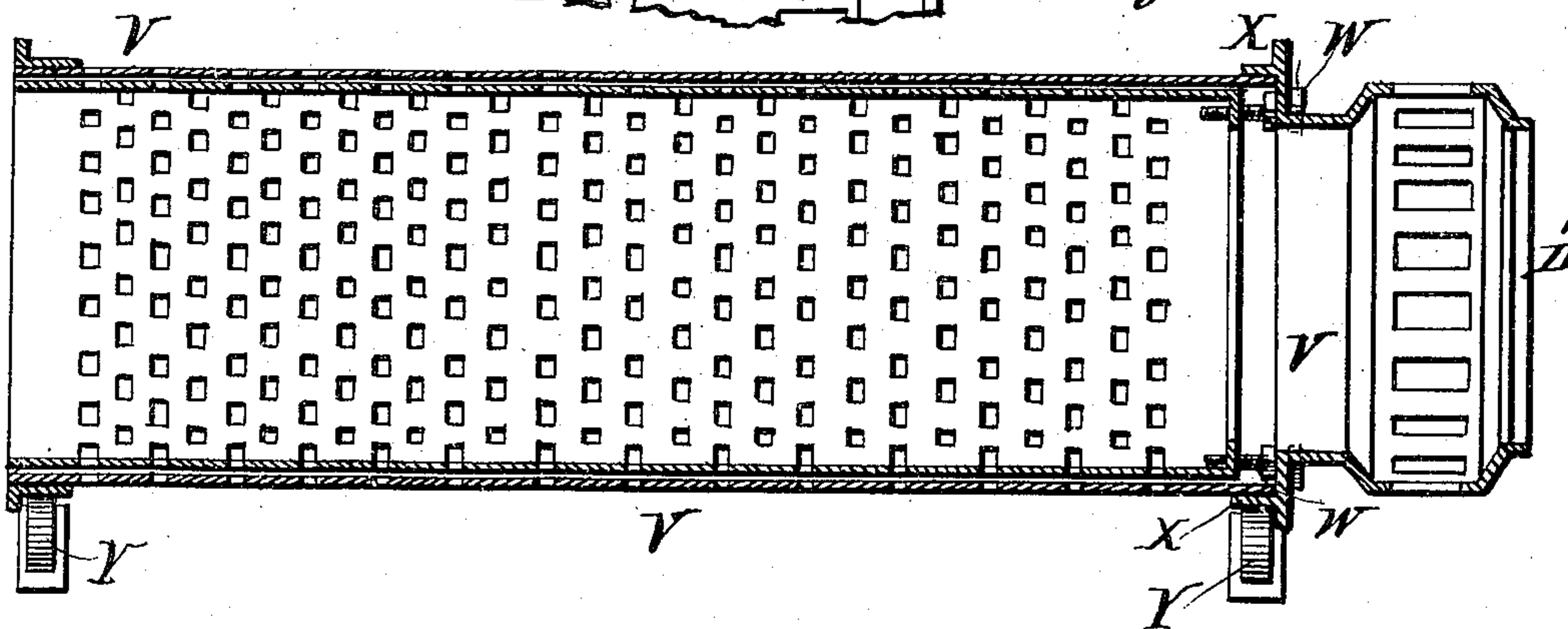
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

FRANK PAYNE, OF EAST PORTLAND, OREGON.

## THRASHER AND SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 323,726, dated August 4, 1885.

Application filed October 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK PAYNE, of East Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Thrashers and Separators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in thrashing-machines and grain-separators; and it has for its object to provide a more perfect and rapid separator for the several seeds than has heretofore been produced; and to this end it consists in certain improvements in the general construction and arrangements and the combination of the parts of the machine, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved machine entire. Fig. 2 represents a longitudinal vertical sectional view of the same. Fig. 3 represents a detached elevation of the main driving mechanism of the machine. Fig. 4 represents a sectional view of a portion of my carrier. Fig. 5 represents a sectional view of a portion of the separator; and Fig. 6, a detached sectional view of the separator, showing the peculiar construction of the same.

The letter A indicates the frame of the separator, which supports the various working parts of the machine.

At one end, at the upper part of the machine, is located a thrashing-cylinder, B, which is mounted on a shaft, C, journaled in suitable bearings in the frame or casing of the machine. The said shaft is provided with a pulley, D, and receives motion by a belt, E, passing from a pulley, F, on the main driving-shaft G of the machine. The said shaft is journaled in bearings H at the front of the machine, and receives its motion from any suitable motive power.

The letter I indicates an inclined slotted grate extending from the lower part of the thrashing-casing to the front end of the straw-carrier L. The said carrier is in the form of a hollow cylinder having a flaring rear end,

and is constructed of longitudinal slats supported by metallic straps M on the inside and the flanged hoops N on the outside. The hoops N of said carrier rest upon the rollers R, which are mounted on the shafts N', one of the shafts receiving rotary movement through the medium of the cone friction-gearing S, which receives its motion as more fully hereinafter described. The said carrier is arranged to rotate in a semi-cylindrical trough, T, and is provided on its outside with a curved propeller-blade, which carries the grain passing through the spaces between the slats in the carrier toward the front of said trough, where it is discharged upon the inclined partition U, leading from the thrashing-casing at a point below the inclined grate to the forward end of the separator V. The said separator consists of two concentric sheet-metal cylinders, one within the other, each being provided with oblong perforations, which may be made to register with each other, so as to be adjusted to the size of the grain to be separated, such adjustment being effected by means of the set-screw W, which permits the cylinders to be adjusted longitudinally with respect to each other.

The separator has on its outside the flanged hoops X, which rest upon the rollers Y, mounted upon the shafts Z. One of said shafts receives a rotary motion through the medium of the cone friction-gearing A', which receives its motion from a pulley, B', driven by the belt B<sup>2</sup>. The said separator is arranged to rotate in a trough, C', and on the periphery of the said carrier are secured the right and left screw-blades, which propel the refuse grain passing through the openings in the carrier-shells to the center of the trough C', where it is discharged. The rear end of the carrier is provided with a contracted neck, d, and perforated head D', for the purpose hereinafter explained.

The letter E' indicates a fan mounted on a shaft, F', journaled in suitable bearings, and having a pulley at one end, which receives its motion from the common belt before mentioned. From the lower edge of the fan-casing extends a pivoted blast-regulator into the forward end of the separator, by means of which a winnowing-blast of varying force or quan-



tity may be directed into and through the separator.

The letter G' indicates an inclined trough located just below the forward end of the separator, into which the separator-grain falls, and through which it is conducted to the sacks or other receptacles. The common belt passes around a driving-pulley, H', mounted on the driving-shaft, and around the pulleys of the straw-carrier and separator, respectively, to give motion to the same.

The letter K' indicates an elevator located at one side of the machine, and L' a stacker located at the rear of the machine. These may be of the usual construction and operated by any suitable gearing.

The operation of my improved machine is as follows: The material to be thrashed is fed into the machine, and passes under the thrashing-cylinder, where the grain is beaten out, and is carried with the straw over the inclined grate, the greater portion of the grain falling through the grate upon the inclined partition, by which it is distributed to the separator. The straw, with portions of unseparated grain, then passes into the straw-carrier, wherein the grain is separated from the straw, the grain falling through between the slats into the trough below, from which it is carried by the screw and discharged, as indicated by the arrows, onto the inclined partition, and discharged into the separating-receptacle Y. The worthless grain is separated and passes out into the trough below, to be discharged by the propeller-blades, while the valuable grain is discharged into the inclined trough, to be delivered into the sacks or other receptacle at the end of the separator next to or in front of the fan. The tailings or imperfectly-thrashed heads of grain are blown over neck d into the perforated head D', and thence fall onto the elevator K', which conveys them back to the thrashing-cylinder B.

Having described my invention, what I claim as new is—

1. The combination of the revolving carrier constructed of longitudinal slats, internal metallic bands, and external flanged hoops, a series of rollers mounted upon longitudinal shafts, and the cone friction-gearing, substantially as specified.

2. The combination, with the thrashing mechanism, the inclined grate, and the straw-carrier and its external propeller-screw and trough, of the rotating separator located below the straw-carrier, and the inclined partition whereby the grain is directed into the separator, substantially as specified.

3. In a thrashing-machine, the combination, with the thrashing-cylinder, inclined grate, trough T, and rotating thrashing-cylinder L, provided with an external propelling-screw, of the inclined plane U, separating-receptacle V, and the gearing whereby the whole is operated, substantially as specified.

4. The combination, with the blast-fan and the tubular separating-receptacle V, composed of an inner and an outer perforated shell adjustable upon each other to regulate the size of the escape-openings, of the perforated head D', for the escape of the unthrashed heads of grain, substantially as specified.

5. The combination, with the rotating separating-receptacle V, provided on its exterior with right and left screw-blades, perforated head D', and the trough C' below said receptacle, of the rotating straw-conveyer L, provided on its exterior with a propeller-screw, the trough T below said conveyer, inclined plane U, and the gearing whereby the whole is operated, substantially as described.

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

FRANK PAYNE.

Witnesses:

T. J. MATLOCK,  
H. D. MCGUIRE.