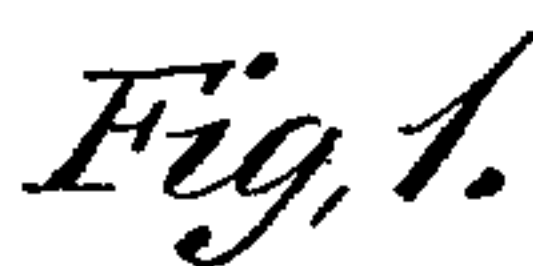


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& H. E. GILLILAND.

No. 215,052.

Patented May 6, 1879.



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Flax-Threshing Machines.

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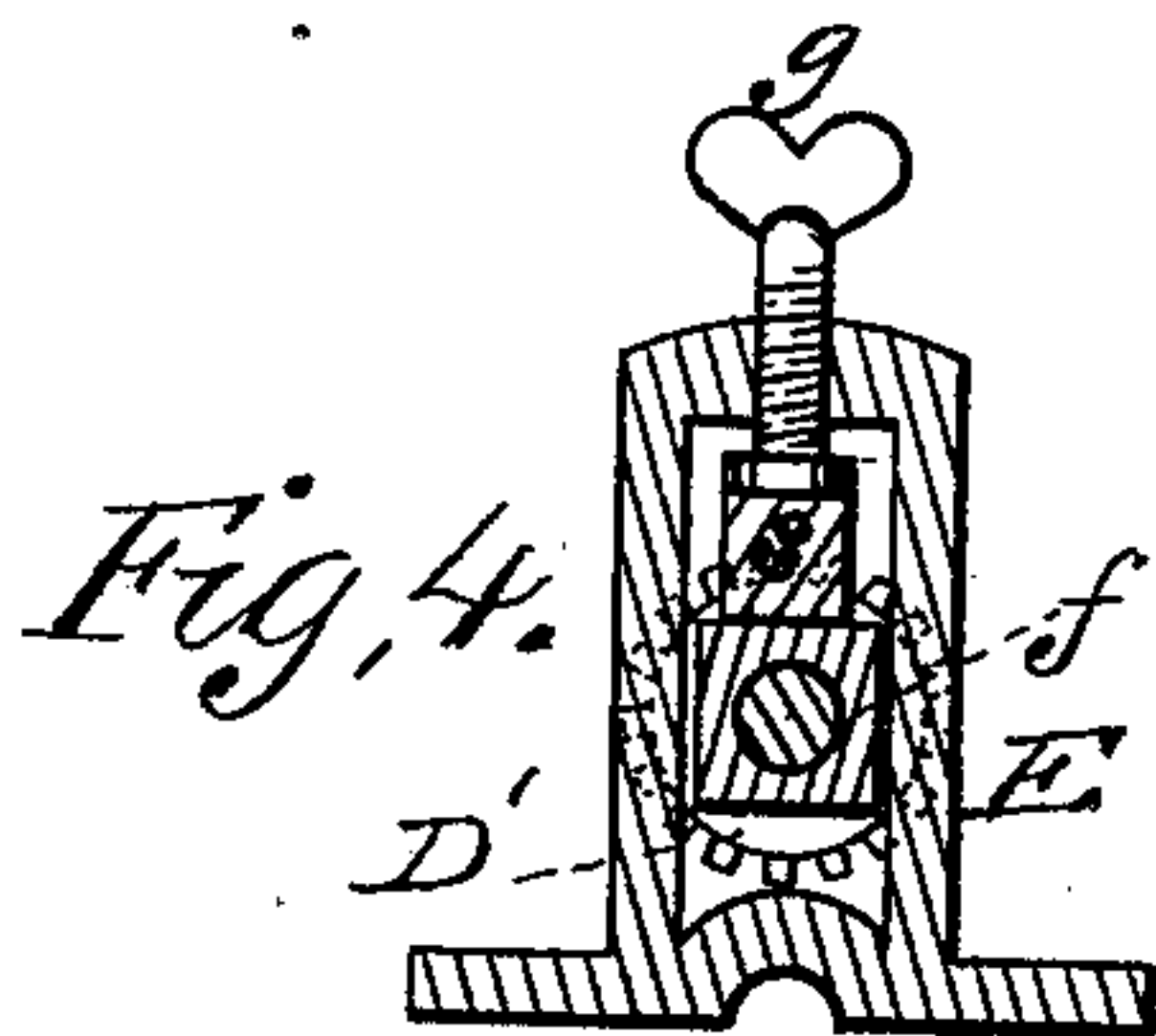
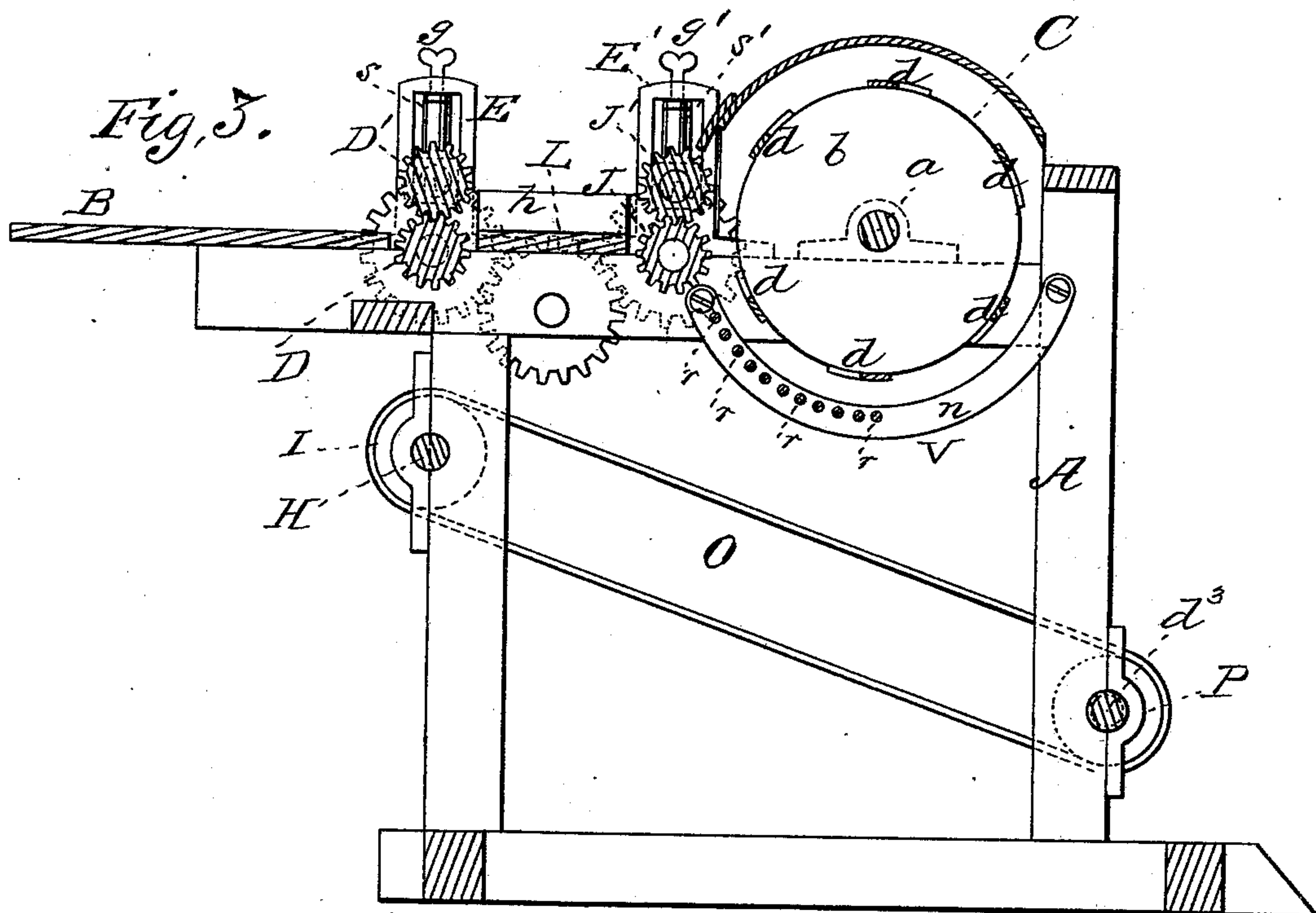


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE W. ESTABROOK, SIMON WILHELM, JOHN WISNER, JR., AND HENRY E. GILLILAND, OF BLUFFTON, INDIANA; SAID GILLILAND AND WISNER ASSIGNORS TO SAID WILHELM AND ESTABROOK.

IMPROVEMENT IN FLAX-THRASHING MACHINES.

Specification forming part of Letters Patent No. **215,052**, dated May 6, 1879; application filed July 27, 1878.

To all whom it may concern:

Be it known that we, GEORGE W. ESTABROOK, SIMON WILHELM, JOHN WISNER, JR., and HENRY E. GILLILAND, of Bluffton, in the county of Wells and State of Indiana, have invented a new and valuable Improvement in Flax-Thrashing Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of our improved flax-thrashing machine. Fig. 2 is a side view thereof. Fig. 3 is a longitudinal vertical section of the same, and Figs. 4 and 5 are details.

This invention has relation to improvements in devices for thrashing out flaxseed from the cured plants.

The object of the invention is to devise a mechanism that will perfectly separate the seed from the stalks, but at the same time will not so break them to pieces as to render them unfit for manufacturing purposes.

The invention consists in the combination, with engaged crushing-rollers arranged the one above the other, the upper one being automatically adjustable, and similarly-arranged feeding-rollers in line therewith, of a rotary thrashing-cylinder arranged in line with the crushing and feeding rollers, and provided upon its perimeter with spaced obliquely-arranged beaters, and a concave under said cylinder composed of end pieces and spaced rods, as will be hereinafter more fully set forth.

In the accompanying drawings, the letter A designates a strong rectangular wooden or metallic frame, supporting at its front end a feed-table, B, and affording bearings near its rear end to the thrashing-cylinder C. This cylinder is composed of two spaced solid heads, *b*, keyed or otherwise rigidly secured upon an axial shaft, *a*, the ends of which have their bearings in frame A at *c*, and of obliquely-arranged flat bars *d*, secured at their ends to the heads aforesaid. One of the journals of this cylinder is provided with a pulley, *d*¹, through

which and a larger pulley, *d*², upon a driving-shaft, *d*³, near the bottom of the frame, the said cylinder is rotated by means of an endless belt, C'. D indicates a grooved roller, having fixed bearings *e* at the sides of the frame, and arranged at the rear edge of the feed-table, with its axis of rotation somewhat below the level thereof; and D' is a second roller, arranged above and meshing with the roller D, and having its bearings in the metallic blocks *f*. These latter are arranged in the slotted standards E, and are consequently vertically movable, to allow the passage between the said rollers of a more than usually bunched mass of flax. This movement is controlled by a rubber spring, *s*, inserted in the slots of the standards, between the blocks *f* and the end of the said slot, the pressure of said springs being regulated by means of the set-screws *g*, extending through a screw-threaded perforation in the tops of the said standards. Intermediate with respect to the thrashing-cylinder and the rollers D D', and close up against the former, is a second set of rollers, J J', of which the lowest has fixed bearings *e'*, and the upper one bearings in blocks *f'*, that are vertically movable in slotted standards E' and controlled by springs *s'*, and the pressure of the latter regulated by the set-screws *g'*, precisely as above set forth for rollers D D'.

Between the rollers D D' and J J', and resting upon the top of the frame, is a board, L, forming a rear continuation of the feed-table, and provided with the guides *h*. These latter converge toward each other for the purpose of preventing the journals of the rollers J J' from being fouled by the flax-plants. The roller D has upon its end a gear-wheel, F, that engages a similar gear-wheel, G', upon a shaft, H, at the front end of the frame, and having at its other end a fixed driving-pulley, I, and exterior thereto a loose shifting-pulley, I'. Upon the end of its shaft opposite to gear F roller D has a gear, K, that meshes with an independent gear, M, that in turn engages a gear, N, upon the adjacent end of roller J. Simultaneous motion is imparted to these rollers by means of an endless belt, O, passing around the pulley I, and a pulley, P, upon the

adjacent end of the main driving-shaft d^3 . Underneath the thrashing-cylinder is a concave, V, composed of semi-annular end pieces, n , the extremities of which are secured to the frame, and of spaced rods r , connecting the end pieces, n , and occupying the front half of said concave.

The rollers J J' may be either smooth or longitudinally corrugated; but the rollers D D' are preferably corrugated.

The operation of our flax-thrasher is as follows: The flax-plants are laid upon the table and fed to the rollers D D', passing between which the seed-bolls are crushed. They then reach the table-board L, and are directed by its converging guides to the central portion of the rollers J J', off from their journals. The tailings are then seized by the said rollers J J', are drawn through them, and subjected to a vigorous beating by the beaters d of the cylinder, which thrashes out the seed and bends down the plants upon the concave V. While upon this concave the beating still continues, thus effectually clearing the seed, and only ceases when they drop off therefrom. During this thrashing the "straw" is not materially injured, and may be used for general manufacturing purposes, as paper-making and the like.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a flax-thrashing machine, of the boll-crushing rollers D D', the drawing-rollers J J', in line therewith and spaced therefrom, and the thrashing-cylinder C, with oblique beaters d , substantially as specified.

2. The combination, with the crushing-rollers D D', feed-rollers J J', and a thrashing-cylinder, C, having oblique beaters d , of the concave V, composed of side pieces, n , and spaced bars r , connecting said pieces, substantially as specified.

3. The combination of a concave composed of spaced rods and a flax-thrashing cylinder having oblique beaters with a mechanism crushing the bolls and a mechanism feeding the tailings to the said cylinder, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

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SIMON WILHELM.
JOHN WISNER, JR.
HENRY E. GILLILAND.

Witnesses:

JERE. NORTH,
HUGH DOUGHERTY.