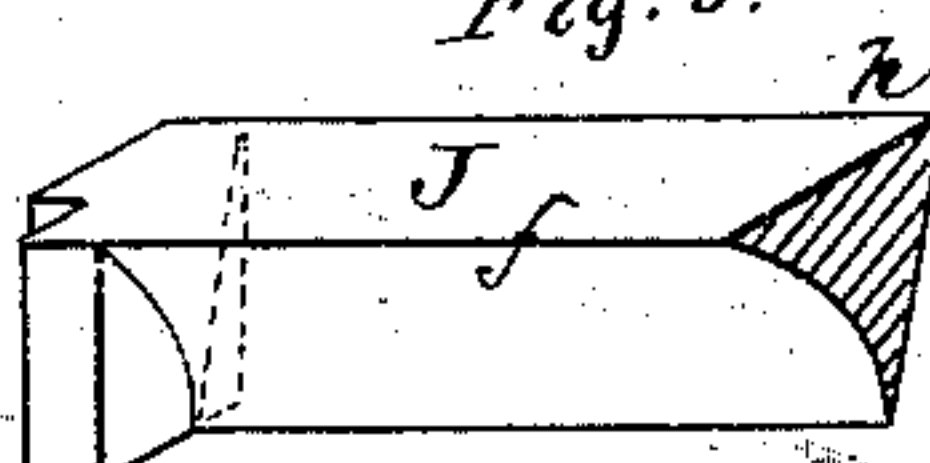
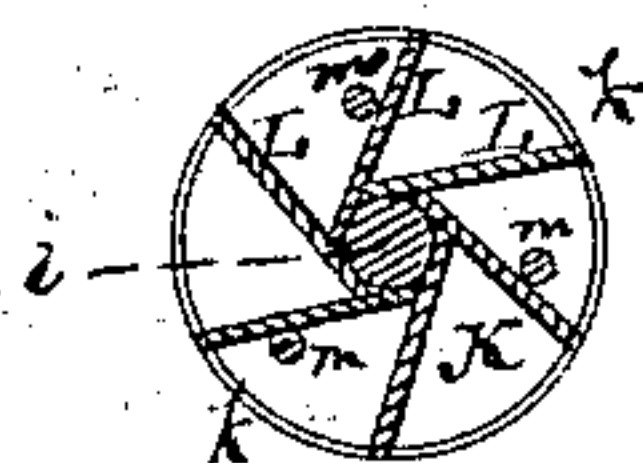
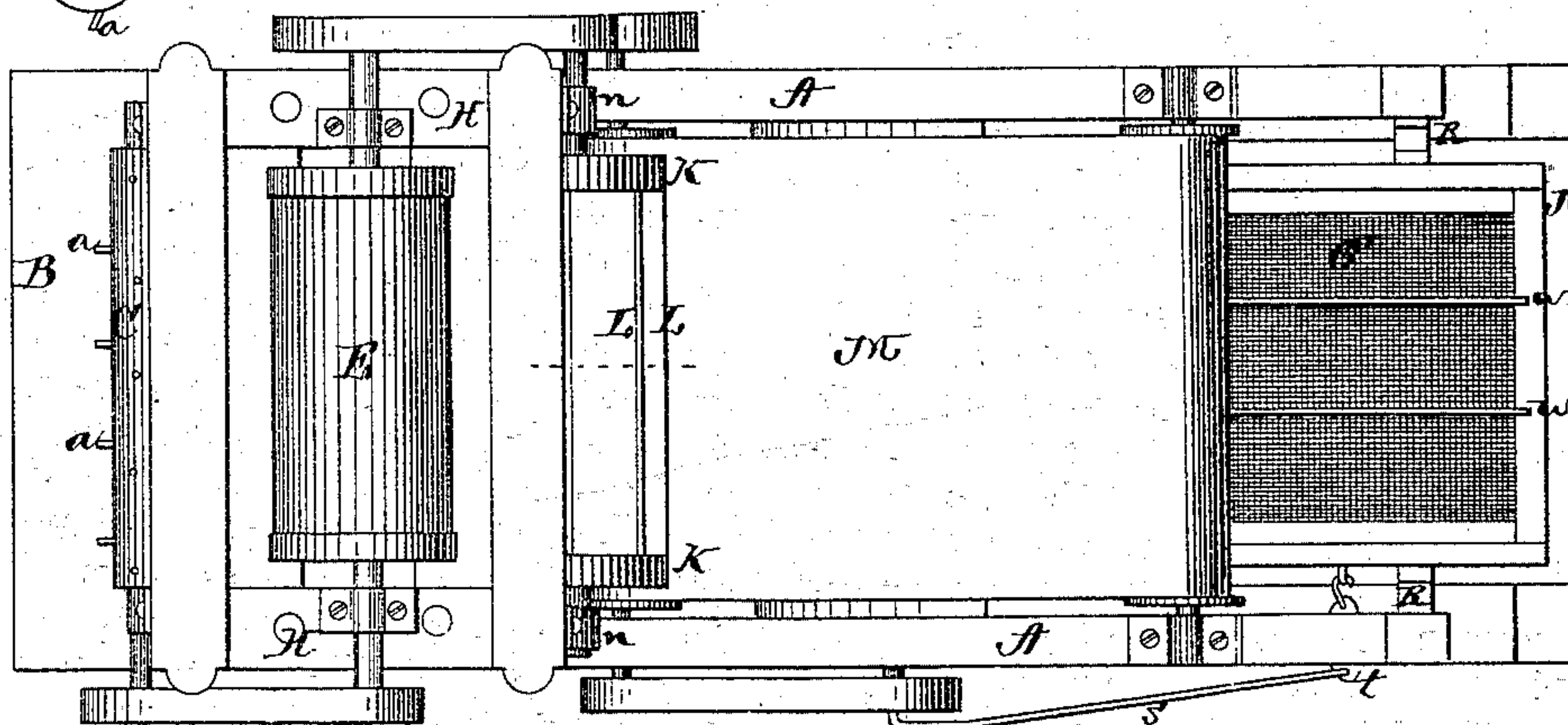
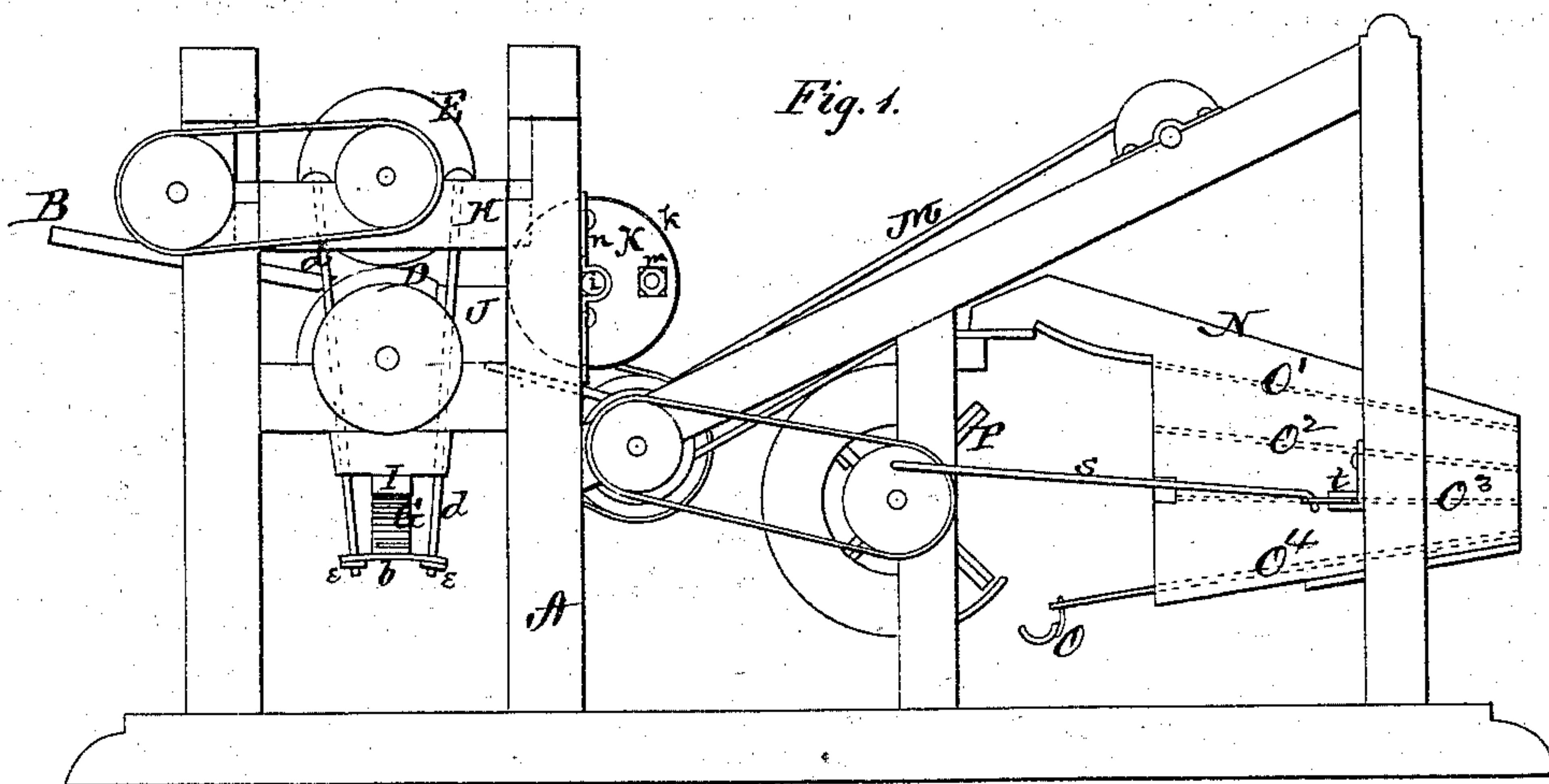


H. A. LEE & O. SMITH.
Flax Thrashers.

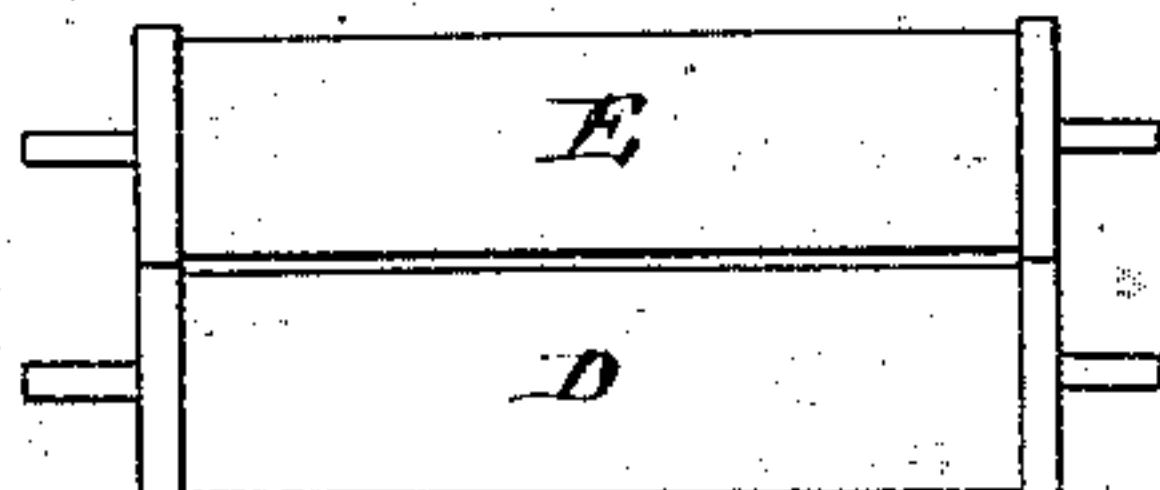
No. 154,056.

Patented Aug. 11, 1874.



Witnesses:

Henry N. Miller
A. L. Ewert,



Inventor.
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per Alexander Mason
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UNITED STATES PATENT OFFICE

HARRISON A. LEE AND OLIVER SMITH, OF PARKMAN, OHIO.

IMPROVEMENT IN FLAX-THRASHERS.

Specification forming part of Letters Patent No. 154,056, dated August 11, 1874; application filed June 8, 1872.

To all whom it may concern:

Be it known that we, HARRISON A. LEE and OLIVER SMITH, of Parkman, in the county of Geauga and in the State of Ohio, have invented certain new and useful Improvements in Flax Thrasher and Separator; and 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, making a part of this specification.

The nature of our invention consists in the construction and arrangement of flax thrasher and separator, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation, and Fig. 2 a plan view, of our machine. Figs. 3 and 4 are detached views of certain parts thereof.

A represents the frame of our machine, constructed in any suitable manner to contain the various parts of which our machine is composed. At the front end of the frame is the feed-table B, over which the flax is fed by means of the feed-roller C. This roller has spikes *a a* driven into it in longitudinal rows, and toward a point at one side of the center, for the purpose of feeding the straw even in the machine. By this feed-roller C the flax is fed into and between two horizontal rollers, D and E, which may be either solid or hollow, as desired. They are placed one on top of the other, but touch each other only at the ends, leaving the intermediate space open a little more than the thickness of a flaxseed, thus preventing any crushing or breaking of the seed. The journals of the lower roller D rest upon cross-pieces in the frame A, and the upper roller E rests upon the lower roller at the ends, and receives its motion from the same by friction. The journals of the upper roller E rest in boxes upon the bars H H, having tenons upon their ends, and sliding in grooves up and down in the vertical posts of the frame, thus allowing the roller E to accommodate itself, by means of a spring, G, underneath, to the unevenness of the flax as it may

be fed in between the rollers. The spring G is made of steel, substantially in the same manner as a common wagon-spring, and attached in the center to a bar, I, which rests against the under side of certain cross-bars in the frame below the roller D. The ends of the spring G each rest on a cross-bar, *b*, connecting the lower ends of two rods, *d d*, which pass through and hold the sliding bar H. The metal cross-bar *b* is adjusted up and down on the rods *d d*, to regulate the tension of the spring G, by means of nuts *e e*, as shown in Fig. 1. J represents the carrier-board, constructed as shown in Fig. 3—that is, concave on the under side in such a manner as to form a sharp edge, *f*, fitting closely to the roller D, while the other edge *h*, over which the flax is beaten by the beater, is convex or rounded. This carrier-board is attached to the frame as shown. The beater is constructed of two solid wheels, K K, securely fastened to a shaft, *i*, and into these wheels are framed the wings L L. These wings are held firmly in position by means of iron bands *k k* around the wheels or end pieces of the beater, and over the ends of the wings. The wheels or end pieces are held firmly to the ends of the wings by means of iron rods *m m* passing near the circumference of the beater, and upon the back sides of the wings L. The shaft *i* of the beater is hung in adjustable bearings *n*, so that the edges of the wings may be brought to or from the carrier-board J, the position of the beater depending upon the condition of the flax-straw, whether it be green or rotten. The position of the wings L L in the beater is at less than right angles to a line passing through the center of the shaft *i*, and intersecting the circumference of the beater at the same point as the outer edge of the wings, so that when in motion it will throw the straw from it and not wind up.

After the flax has been thrashed by the beater K L, it falls onto an endless apron, M, provided with suitable cross-slats, and carried up on said apron until it falls on the sieves in the shoe N. In this shoe are four sieves marked from the top, respectively, O¹ O² O³ O⁴. The upper sieve O¹ is placed in a sloping or inclined position, as shown in Fig. 1. The meshes of this sieve should be large enough to let the seed pass readily, while at the same time it

screens off all the coarse chaff. The second sieve O^2 is less sloping than the first, and is also a little finer, so as to screen off what fine chaff may pass through the upper or first sieve. The third sieve O^3 in position is nearly horizontal, and is designed to screen off all seeds of a larger body than a flaxseed. The lowest sieve or screen O^4 is not designed to be coarse enough to let a flaxseed through, but to let all seeds smaller than a flaxseed pass through onto the floor of the shoe, whence they are conducted into a box placed for their reception, leaving the flaxseed perfectly clean. The lower sieve also conveys the seed toward the fan where it drops off the end of the screen into a spout, O , which conducts the seed out at either side of the machine, as the operator may direct.

Each sieve is divided into three or more spaces, as the builder may choose, by fastening to the sieve-frames two or more strips, w , on the top of, and running lengthwise of, the sieves. The object of these strips is to keep the grain evenly distributed over the sieve if the machine should not stand perfectly level while being operated.

The fan P is situated behind the shoe N , and under the apron or elevator. Its use is to blow out the fine dust and dirt from the seed, as well as to assist in chaffing.

When the flax, after having been thrashed, is carried up by the apron or elevator M , the seed and chaff are to be dropped into a hopper, conducting the same onto the apron-board of the shoe, while the straw is to be dropped onto a straw-carrier and conducted over the shoe. The shoe N is suspended by means of two wooden springs, $R R$, one end of each being

fastened to the inside of the rear posts of the machine above the shoe, and the other end attached to the shoe.

Motion is communicated to the machine by any convenient power by a belt running therefrom to a band-wheel on the shaft of the lower roller D . This, by friction, gives motion to the upper roller E . The upper roller, by a belt at one end, gives motion to the feed-roller C , and by a belt at the other end to the beater $K L$. The lower roller D in the same manner gives motion to the lower roller of the apron, and this roller to the fan.

From the band-wheel on the fan-shaft a rod, s , runs to an elbow, t , fastened to the rear post of the machine, and connected with the shoe near the center of the same. The rear end of the shoe rests upon a cross-piece of the frame, and by this arrangement of the shoe we get an even motion of the same, both ends moving alike.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, in a flax-thrasher, of the spiked feed-roller C , arranged over the feed-table B , roller D , and adjustable roller E , each having ribs or bands on their ends, the carrier-bar J , and beaters $K L$, all constructed substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 16th day of May, 1872.

HARRISON A. LEE.
OLIVER SMITH.

Witnesses:

A. D. WILLMOT,
I. E. HATCH.