No. 49,533. PATENTED AUG. 22, 1865.

B. H. KEPNER.
THRESHING MACHINE.

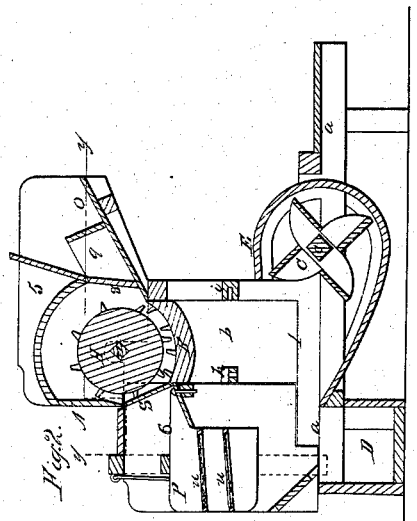

Fig: 2.

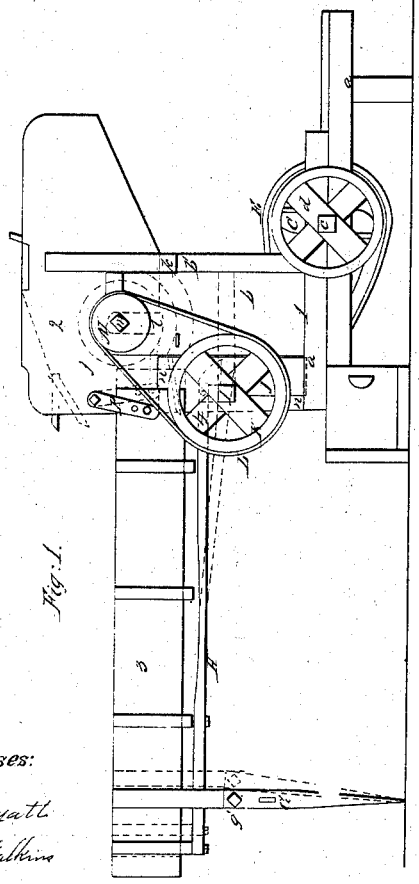

Fig: 1.

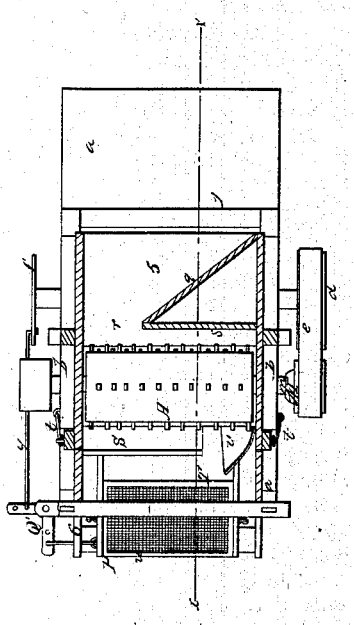

Fig: 3.

Witnesses:

Jay Hyatt

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Inventor:

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by P. Fraser & Co. his Attys

The drawing in this patent is not in print.

UNITED STATES PATENT OFFICE.

BENJAMIN H. KEPNER, OF NORA, ILLINOIS, ASSIGNOR TO HIMSELF AND ABRAM L. BRINK.

IMPROVEMENT IN THRASHING-MACHINES.

Specification forming part of Letters Patent No. **49,533**, dated August 22, 1865.

To all whom it may concern:

Be it known that I, B. H. KEPNER, of Nora, in the county of Jo Daviess and State of Illinois, have invented a new and Improved Combined Grain-Thrasher and Straw-Separator and Clover Thrasher, Huller, and Seed Separator; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of that portion of the machine used as a grain-thrasher and straw-separator. Fig. 2 is a longitudinal vertical section of the machine, when used as a clover huller and seed separator, in the plane of line *x x*, Fig. 3; Fig. 3, a horizontal section of the same in the plane of line *y y*, Fig. 2.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in such a combination and arrangement of the different parts of a machine as enables it to be used for thrashing grain and separating the straw therefrom, and which, by a simple change of parts, is also capable of being easily converted into a clover thrasher, huller, and seed separator when desired, as hereinafter described.

To adapt my improvement to the various uses for which it is designed, I construct it of the following separate and detachable parts, as represented in the drawings, viz: Part 1, which consists of the cylinder and concave bed A B, fan C, and seed-box D, together with the necessary auxiliary parts and frame for supporting the same; Part 2, which consists of the ordinary top or covering for the cylinder, and inclined feed-board to be attached to Part 1 when it is desired to use the machine for thrashing; Part 3, the straw-separator, Fig. 1, attached to Part 2; Part 4, the device for imparting the necessary shaking motion to the straw-separator; Part 5, consisting of the peculiar incline feed-board, hereinafter described, and covering-case, which is adjusted to Part 1 when used as a clover-huller; and Part 6, the seed-separator, which, with the Parts 1 and 5, forms the clover-huller and seed-separator.

In Part 1, as represented, *a a* is a suitable frame or platform, of any desired construction, for supporting the machine, upon which rest and are secured the side frames or standards, *b b*, in which are mounted in any usual manner the ordinary cylinder and concave bed, A B.

C is a fan of any suitable construction, provided at one end of its axis *c* with a pulley, *d*, Fig. 1, and belt *e*, Fig. 3, connecting it with the pulley M on the cylinder-axis, by which the necessary motion is imparted to it, and having at the other end the disk *f*, to which is attached the pitman *g*, that operates the shoe of seed-separator 6. The axis of this fan has its bearings in the platform-frame *a*, while the fan is inclosed in the necessary fan-case E, secured to the same frame. The fan C is only required and used with the seed-separator. In other cases, the belt *e* being removed the fan remains at rest.

h and *i* are two cross-pieces, to which is secured part of device 4, as will presently be described.

D is a suitable box or receptacle for receiving the seed after it has been cleaned by passing through separator 6.

Part 2 may be constructed as the top or covering for the cylinder, with the feed-board of any ordinary thrashing-machine, the side boards, *j*, having at their bottom a cross-piece, *k*, connecting them, and upright pieces secured to the same and the side boards. In the lower edge of these boards slots *l* are cut, as represented in dotted lines in Fig. 1.

When it is desired to attach Part 2 to 1 it is so placed upon the latter that the cross-piece *k* will rest on the jog or shoulders *b'* of standards *b*, the sides *j* passing inside of the frames or standards *b* and between the same and the ends of the cylinder A, the slot *l* in the boards enabling them to pass the axis *m* of the cylinder, and the rear ends of the boards *j* resting on the upright boards *n*, whose lower ends are mortised or set in grooves in the platform-frame *a*, while their upper ends are provided with tenons which fit in mortises *o* in the lower edges of the boards *j*, as shown in dotted lines in Fig. 1.

The straw-separator 3, which is to be used with Parts 1, 2, and 4 in thrashing grain, is made with a perforated bottom to allow the grain to pass through, and is suspended at its front from Part 2 by means of straps F, as represented, so as to allow it a longitudinal

oscillating motion, and is supported at its rear or tail end by means of a standard, G, jointed at g', and pointed at its lower end so as to retain its position on the floor or ground while the separator is in motion. At the rear, under the bottom, secured in any suitable manner, is the wooden spring-pitman H, which is attached at its opposite or front end to Part 4, as will presently be described.

To the concave bed B is hinged, in such a manner as to be easily detached, a chute or inclined board, the rear edge of which rests on the bottom of the straw-separator, as shown in dotted lines, Fig. 1. In the bottom of the straw-separator, on each side, are slots for the boards *n*, so that they will not interfere with its longitudinal motion.

Part 4 consists of a short horizontal shaft or axis, I, one of whose bearings is in or attached to the piece J, which is bolted or otherwise fastened to the standard *b* of Part 1, and the other bearing being in the end of a horizontal longitudinal piece (shown in dotted lines, Fig. 1) which has a tenon at its other or front end fitting in a mortise in cross-piece *i*, and it is bolted to cross-piece *h*, as shown in Fig. 2. The outer end of the axis I is provided with a pulley, K, and belt L, which connects it with pulley M on the axis of the cylinder, from whence it receives its motion. The other end of this axis I, which extends transversely about half way across the machine, is provided with a short crank, the end of which fits and turns in a hole or bearing in the end of spring-pitman H, by which means the necessary longitudinal shaking or oscillating motion of the straw-separator is produced.

Part 5, which is employed in hulling the clover-seed, is constructed in some respects like Part 2, but differs from it in that it has the perpendicular board N and the feed-board or incline O, provided with the guide-board *q*, placed obliquely, as represented in Fig. 3, so as to direct the clover as it is being fed into the machine to one end of the cylinder, as at *r* in the same figure. It also has a board, *s*, placed transversely, so as to confine the clover as it is being hulled. The rear end of part 5 rests on the corners of the seed-separator 6, and is secured thereto by means of a hook or other easily-detachable device.

Part 6 is designed to be used with Parts 1 and 5 for cleaning the seed after it has been hulled. It has a frame of the ordinary construction of separators, the standards of the same having tenons at their lower ends which fit in mortises in the frame *a*, as shown in dotted lines in Fig. 2. At the top the separator is fastened to Part 5 by means of hooks *t t*. (Shown in Fig. 3.) This separator is provided with a shoe, P, of any suitable construction, containing the necessary sieves *u u*, and it is operated by the usual angle-iron, Q, and pitman *g*, Fig. 3.

S is a transverse inclined board secured to the frame of the seed-separator on the side of the machine opposite from that to which the board *s* is attached, and extends part way across the machine, so as to confine the seed from its first entrance into the machine at *r* at one end of the cylinder, while it is being hulled, till it reaches the opposite end, where it is conducted by the inclined guide *v* to the chute or incline T of the shoe.

The manner in which the different parts of my improvement are combined and used is as follows: Parts 1, 2, 3, and 4, as represented in Fig. 1, are arranged and used together for thrashing grain and separating the straw therefrom, the fan C being at rest, as before described. For thrashing clover, Parts 3 and 4, the straw-separator and device for operating the same are detached, and Parts 1 and 2 only used. To hull and clean the clover-seed after it has been thrashed, as above, Part 5 is substituted for Part 2 and the seed-separator 6 attached, the fan now being employed by connecting its pulley *d* with pulley M of the cylinder by means of the belt *e*.

The first and most important advantage which my combination machine possesses is economy in the cost of the machines necessary for accomplishing the several results that are attained by the use of my improvement, as at least two separate and independent machines are usually required to perform the different operations which mine alone accomplishes. Another advantage is convenience in using and the saving of the extra time which is required in the use of independent machines. A third advantage is the thorough and perfect manner in which the clover-seed is hulled by being subjected to the action of the cylinder during its gradual passage from one end of the same to the other, being confined therein by means of the two boards S and *s*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the Parts 5 and 6, for hulling and cleaning clover-seed, with the Parts 1, 2, 3, and 4 of a grain-thrasher and straw-separator, Parts 2 and 4 and 5 and 6 being interchangeable, to constitute a convertible machine, which may be readily and economically adapted to either purpose, said parts being arranged and operating substantially as set forth.

2. The combination and arrangement of the boards *q* and *s*, of the feed-board O, and transverse inclined board S with the cylinder A, operating substantially as and for the purposes specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

B. H. KEPNER.

Witnesses:
JESSE WRIGHT,
JUNIUS ROGERS.