(No Model.)

3 Sheets—Sheet 1.

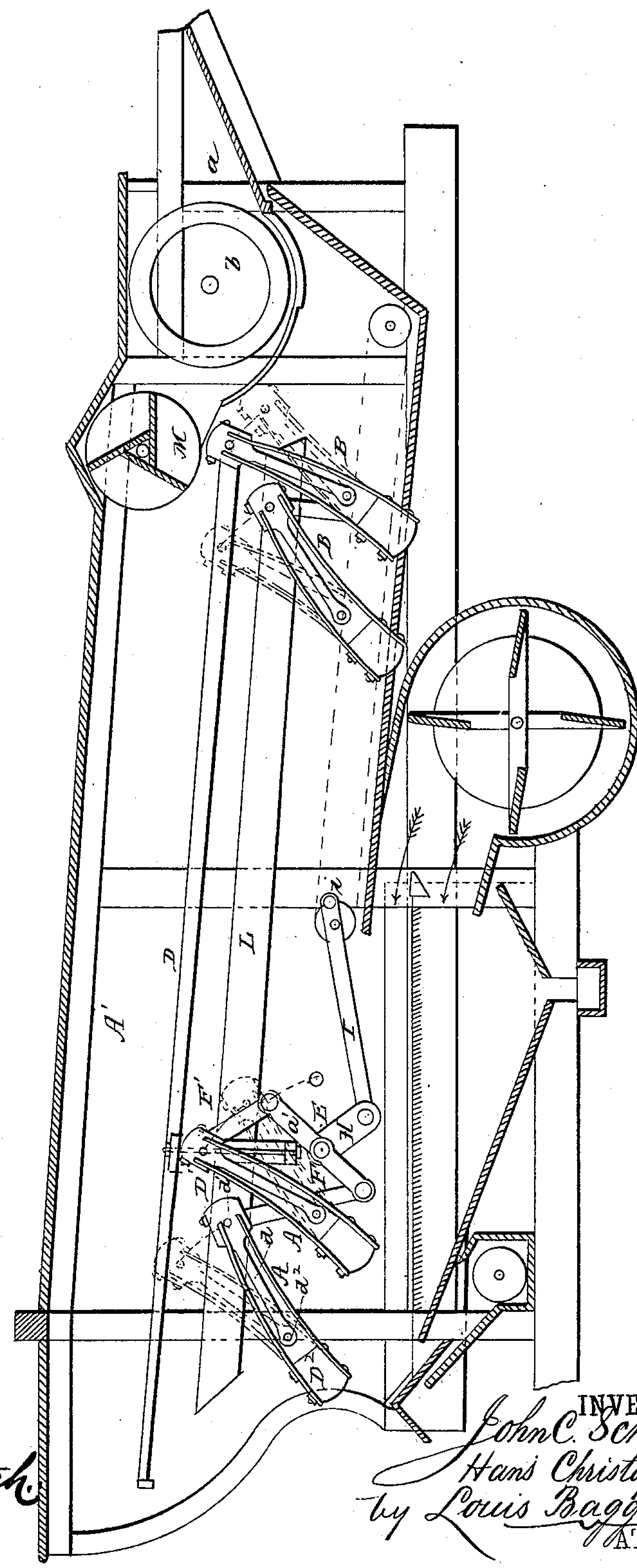
J. C. SCHNEIDER & H. CHRISTOFFERSON.

THRASHING MACHINE.

No. 267,599.

Patented Nov. 14, 1882.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

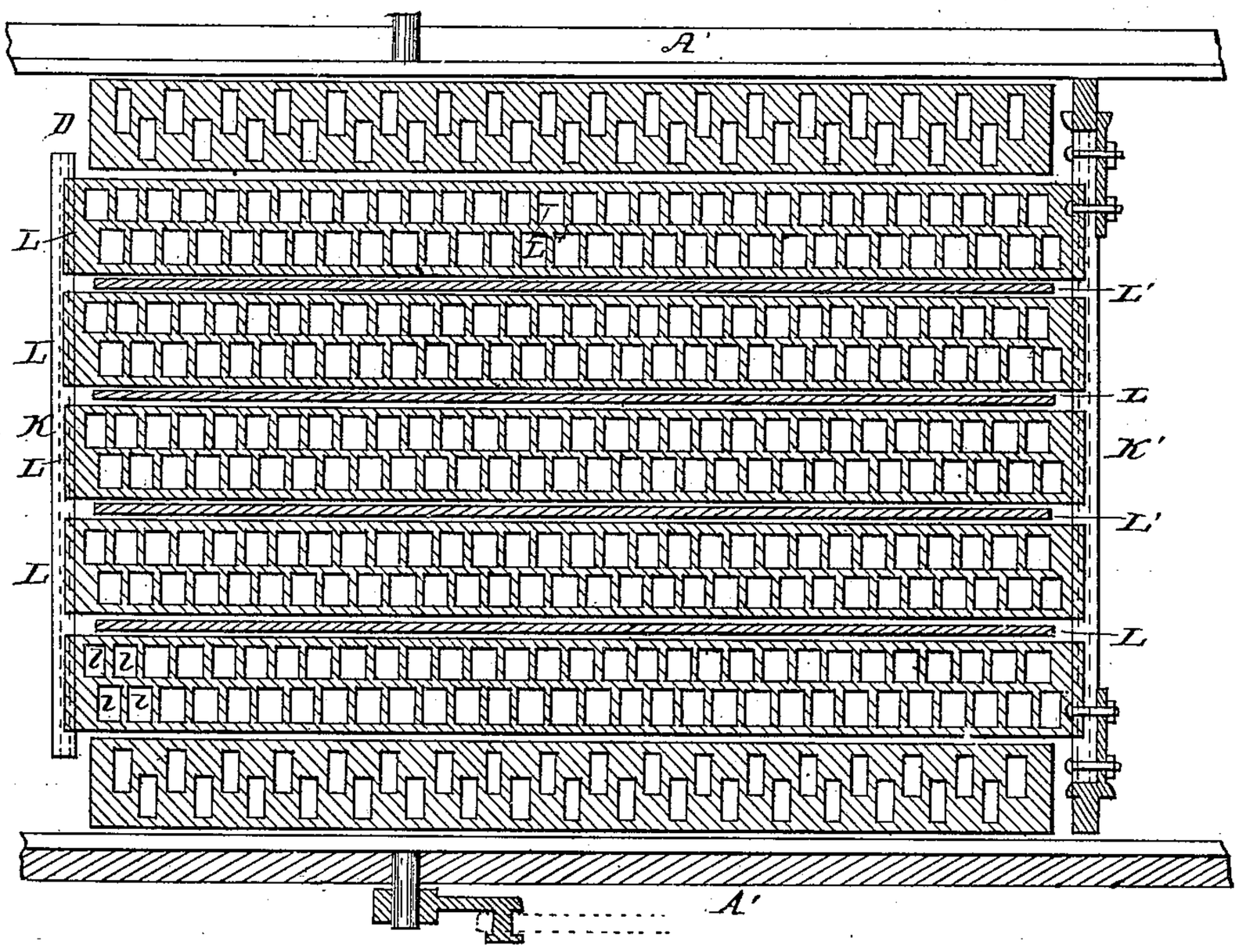

Fig. 5.

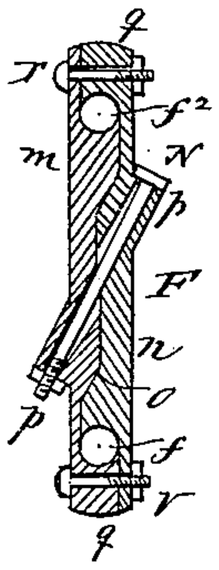

Fig. 6.

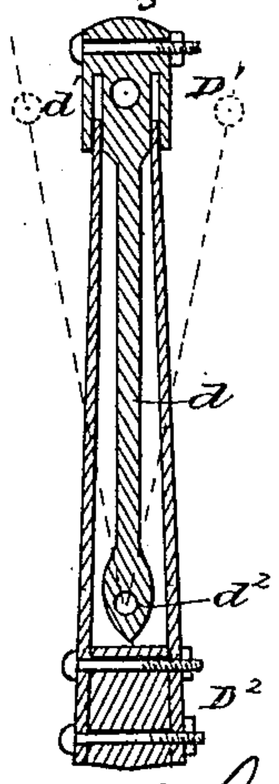

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Fig. 3.

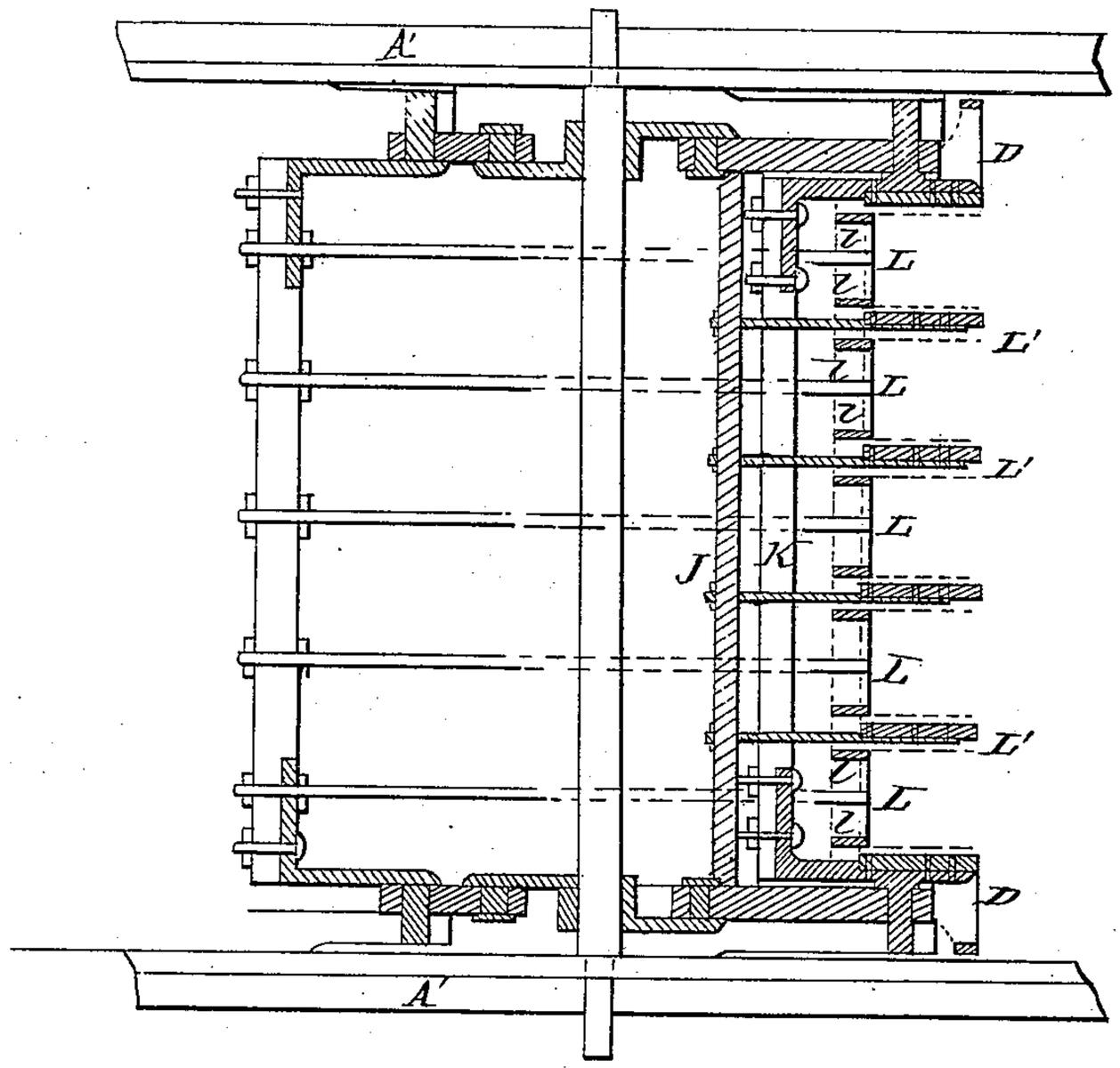
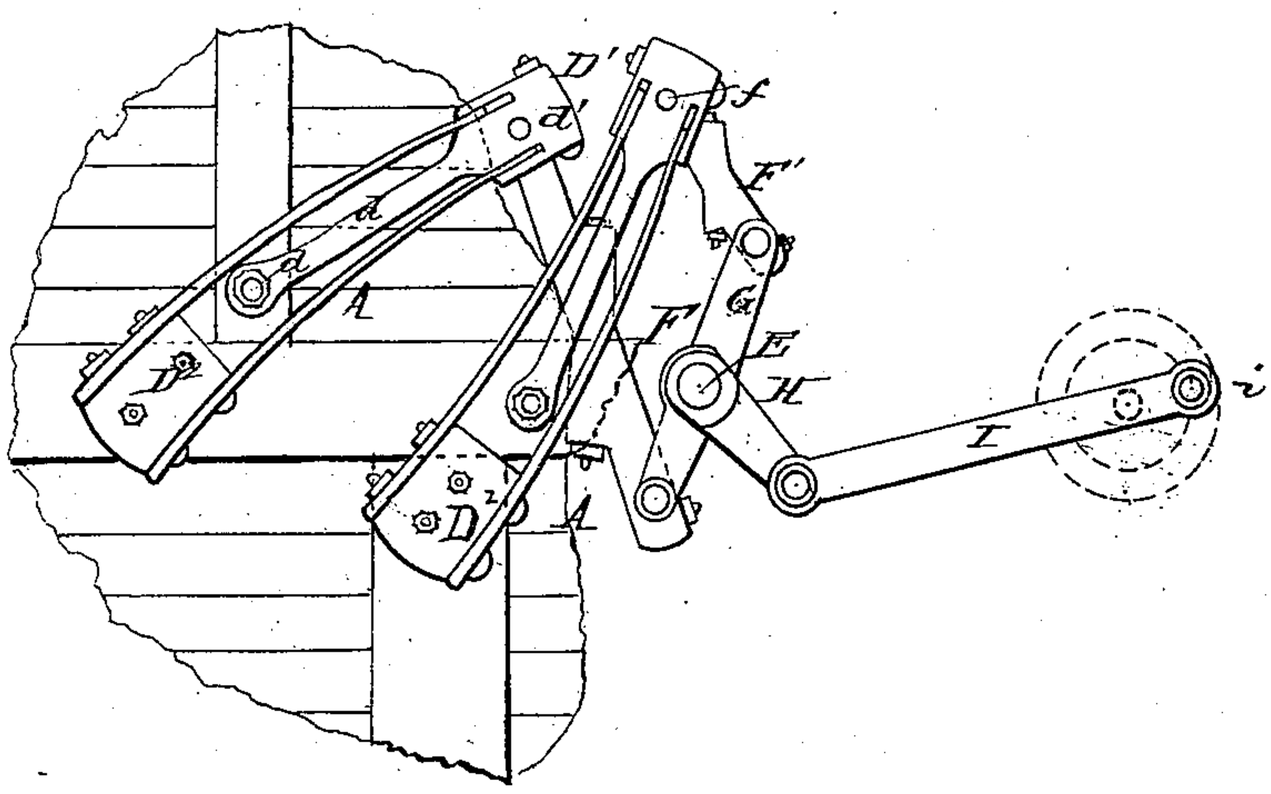


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN C. SCHNEIDER AND HANS CHRISTOFFERSON, OF HUDSON, WISCONSIN.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 267,599, dated November 14, 1882.

Application filed September 9, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOHN C. SCHNEIDER and HANS CHRISTOFFERSON, of Hudson, in the county of St. Croix and State of Wisconsin, have invented certain new and useful Improvements in Thrashing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a longitudinal vertical section of our improved thrashing-machine. Fig. 2 is a detail plan view of the interoperating separators. Fig. 3 is a detail view of the shaft and pitmen for operating the separators. Fig. 4 is a detail view of the mechanism for imparting an alternate joint vertical and rearward vibratory motion to the grain-separators and straw-carriers. Fig. 5 is a sectional view of one of the pitmen, and Fig. 6 is a detail view of one of the double springs which support the straw-carrier.

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

This invention contemplates certain improvements in the grain-separators and straw-carriers of thrashing-machines, and has for its object to effect the speedy and thorough separation of the grain from the straw, to so construct the pitmen by which the shaking-screens of the separator and carrier are operated that all slack or "lost motion" caused by wear may readily be taken up, and to impart to said screens an easy and evenly-balanced vibratory motion.

To this end our improvement consists in a novel construction and combination of parts, as hereinafter more fully described and claimed.

In the accompanying two sheets of drawings, A′ marks the casing or housing of the machine, containing the several operative parts. *a* is the feed-hopper, within which is hung the thrashing-cylinder *b;* and M is the beater, the blades or wings of which aid in beating out the grain as the straw passes under it to the interoperating separator-frames or screens. The latter are composed of a series of long and narrow screens, L, made of sheet metal, and having each a double row of square or rectangular perforations, *l*, arranged to intersect or alternate with one another. These screens are separated from one another sidewise by boards L′, set on end, and are supported at opposite ends upon cross-bars K and K′, which are in turn supported each upon two springs—one at each end—and marked respectively A A and B B. The outermost screens L L on each side of the machine are flanked by narrow screens D D, also of perforated sheet metal, but with more solid surface and smaller openings than the intervening screens L L. Each of the double springs A A and B B, upon which said screens are supported, (by their end bars K and K′,) is of a peculiar construction, as plainly shown in Fig. 6. They consist of an arm, *d*, having an enlarged head, D′, forming the box *d′*, adapted to receive the tenoned ends of the bars K and K′, and pivoted to the side of the casing at d^2. In the head D′ are two slots—one on each side of the box *d′*. In these slots slide the upper free ends of the springs, while their lower ends are bolted firmly to a block, D^2, which is firmly fastened to the casing by bolts and screws. In rocking to and fro on the pivot d^2 the two springs slide up and down in their respective slots, thus relieving a large part of the strain on them, while they spring enough to make the motion of the screens and racks smooth and even. The set or series of middle screens L and side screens or racks, D D, have an alternate falling and rising motion in an inclined plane—or, rather, an alternate joint vertical and rearward vibratory motion—for the purpose of subjecting the straw, with the commingled grain, to a thorough shaking and separating action while it is fed to the rear end of the machine. This motion is effected by the mechanism shown more clearly in the detail view, Fig. 4 of the drawings, which we shall now proceed to describe.

I is the main pitman, one end of which is connected by a wrist-pin, *i*, to the main driving-pulley of the machine. Its other end is connected by an arm or crank, H, to a rock-shaft, E, at each end of which is secured a cross head or arm, G. At each end of the arm G (equidistant from the central rock-shaft, E) is a pitman, F and F′, the upper end of one of

which, F, is connected by its box *f* to the end of bar K, while the other, F′, is connected by its box *f* to the side screen, D. It will of course be understood that there is a pair of pitmen, F F′, arranged in this manner on each side of the machine, or at each end of shaft E, while only one crank H and one pitman I are necessary.

It will thus be seen that screens L and D have an alternate rising and falling motion, causing them to rise and fall alternately above and below the upper edges of the stationary boards L′ The double springs A and B prevent a jerky motion of the intermediate set of screens L, causing them to vibrate with a smooth and easy motion, and also relieve the pitmen F from strain. The parallel stationary boards L′ are supported edgewise upon cross-beams J J, which also operate to limit the downward throw of the screens L and D. The forward spring, B B will readily yield to the vibratory reciprocating motion of screen L, while at the same time they should be made stiff enough to support the weight of straw and grain carried upon the screens, which purpose the arms *d*, pivoted at d^2, serve.

The pitmen F and F′ are of the construction shown in Fig. 5 of the drawings. They are made of wood, in two parts or sections, *m* and *n*, each part being constructed exactly like the other, with a recess or cut-out portion, *o*, and a projecting part, *p*. This projecting part is bored through longitudinally for the insertion of a long nutted bolt, which thus, as will be seen, passes obliquely through the body of the pitman from one side to the other. The cap-piece *g* of each of the end boxes, *f f*, forms an extension of the projecting part *p*. When the box *f* (either one of them) is worn, it may be tightened up by screwing down the nut of bolt N, all parts of the box wearing evenly, so that the two parts *m* and *n* will slide up upon each other, and thus reduce the size of the worn box. This adjustment may be effected without removing the pitman or taking it apart, but simply by tightening the oblique bolt N and the transverse end or cap bolts *r r*.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a grain-separator for thrashing-machines, the combination of the casing A′, side racks, D D, the series of parallel stationary boards L′, set on edge, screens L L, alternating with fixed boards L′, supporting cross-bars K K′, the two pairs of supporting double springs A A and B B, pitmen F F′, rock-shaft E, provided with the fixed arms or cross-heads G and crank H, and pitman I, all constructed and combined to operate substantially as and for the purpose herein shown and set forth.

2. In a grain-separator for thrashing-machines, the combination, with the crank-shaft and screens, of the improved pitman herein shown and described, composed of the recessed parts *m* and *n*, formed with cap-pieces *g g* and oblique extensions *p p*, and the oblique tightening-bolt N, constructed and combined substantially in the manner and for the purpose herein shown and specified.

3. In a grain-separator for thrashing-machines, the combination, with the straw-carriers, of a supporting-frame, blocks D^2, rigidly secured to said support, springs bolted to the opposite sides of said blocks, oscillating arms *d*, pivoted to the support, and constructed with slotted heads D′, in which the springs are adapted to play, substantially as and for the purpose shown and set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

JOHN C. SCHNEIDER.
HANS CHRISTOFFERSON.

Witnesses:
CHARLES D. MCKINNON,
ALLAN BEGGS.