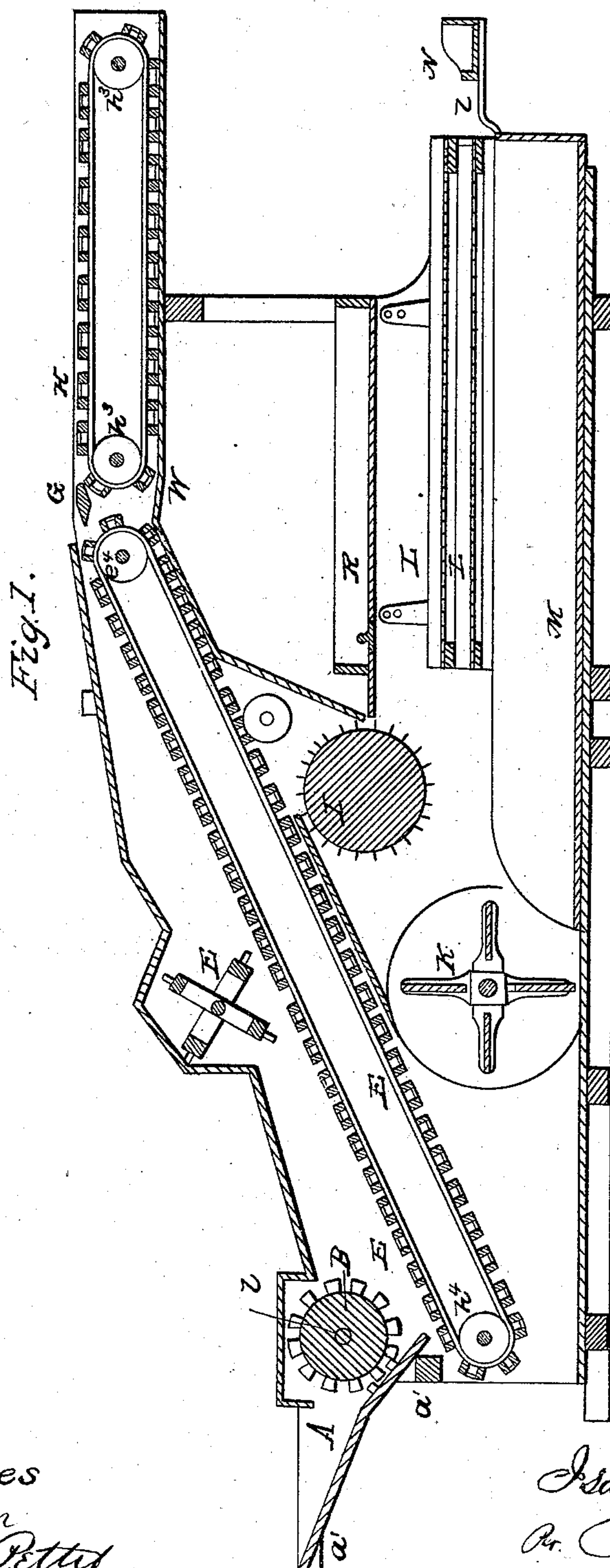


3 Sheets—Sheet 1.

No. 66,765.

Patented July 16, 1867.



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Clover Thrasher, Huller, and Cleaner.

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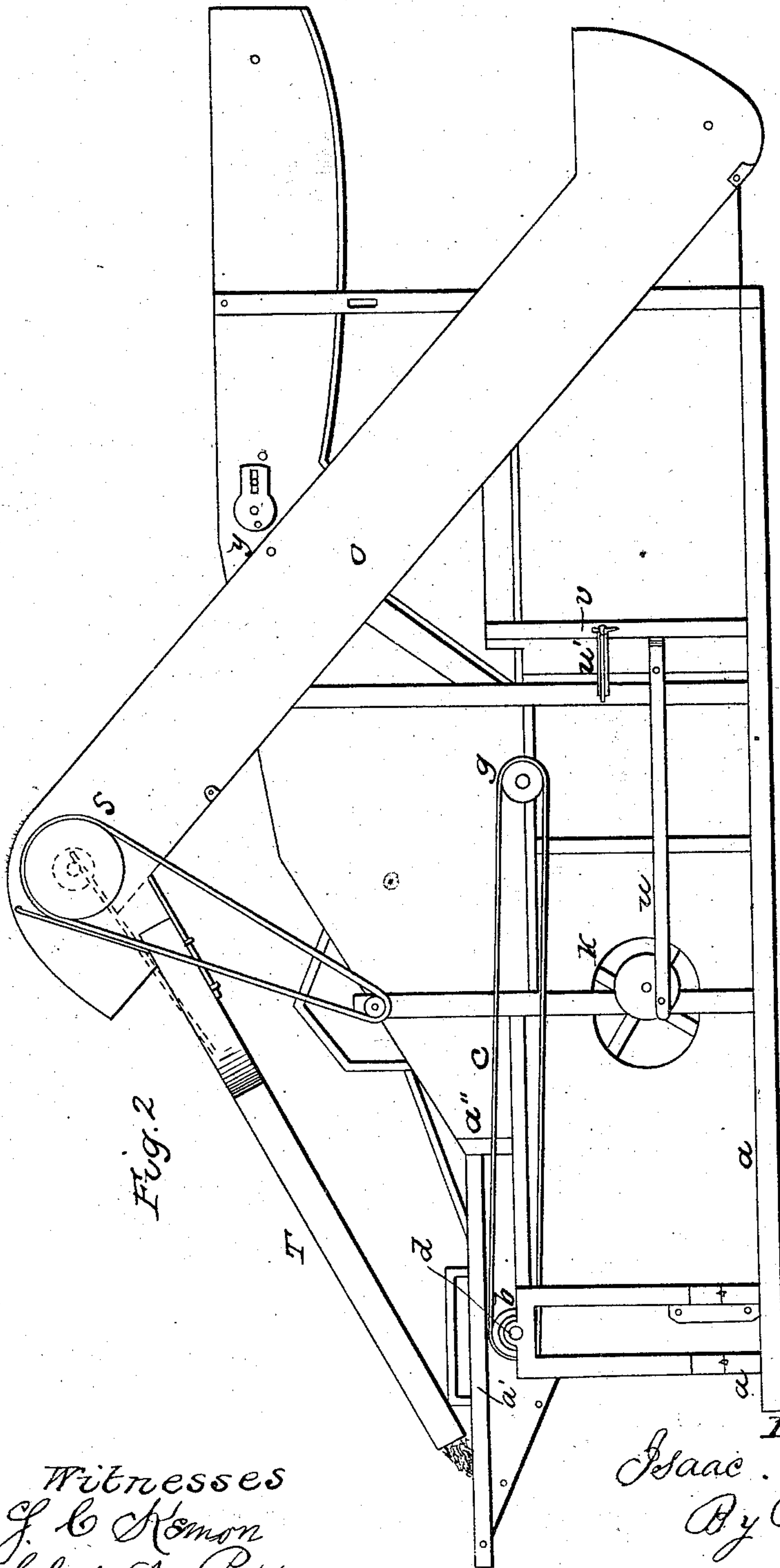


Fig. 2

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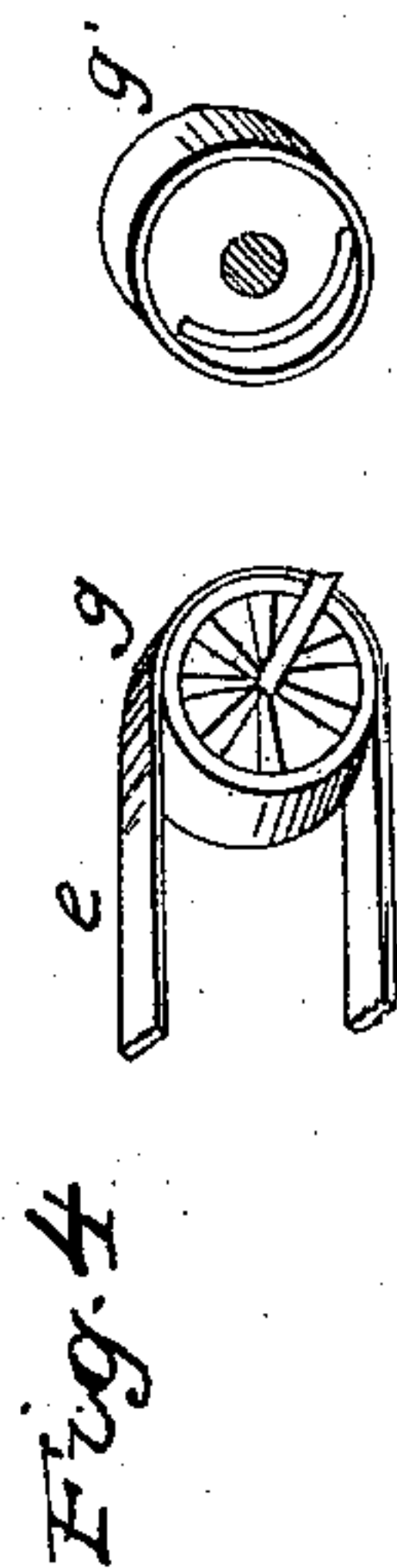
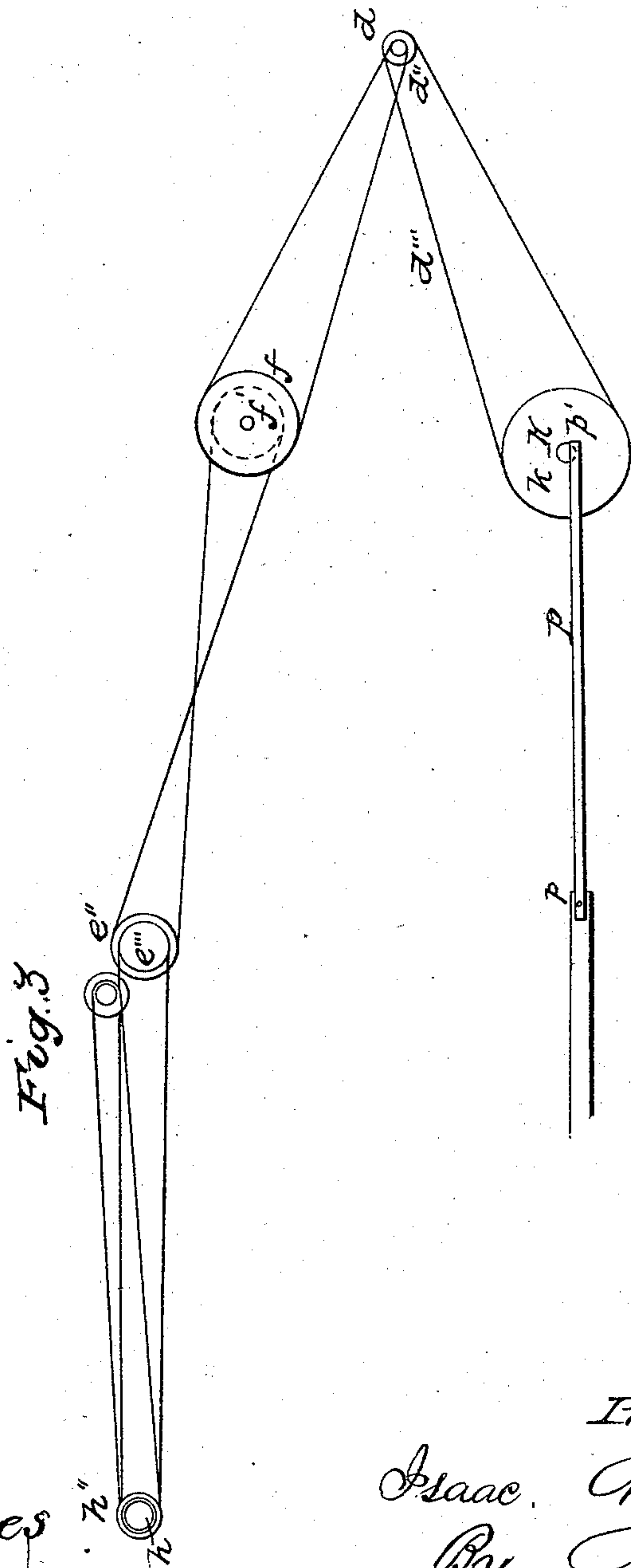
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3 Sheets—Sheet 3.

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Letters Patent No. 66,765, dated July 16, 1867.

IMPROVEMENT IN CLOVER-THRESHER, HULLER, AND CLEANER.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC N. YOUNG, of Swann, in the county of Noble, and State of Indiana, have invented a new and useful Combined Clover-Thresher, Huller, and Cleaner; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 represents a longitudinal sectional elevation of my invention.

Figure 2 represents an elevation of my machine, showing the right-hand side of the same, the end in which the threshing-drum is situated being regarded as the front.

Figure 3 shows the arrangement of the belts and pulleys for working the machine.

Figure 4 shows the belt-drums *g g'* detached from the machine.

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

The object of my invention is to construct a machine which shall thresh clover seed from the hay, separate the chaff from the seed, hull the seed, and clean the same by the most simple, durable, and effective machinery possible.

a a a a are portions of the frame of my machine. *A* represents the feed-table of my machine, held in its place by the beam *a'*, to which it is attached, and which rests on the upright posts *a*, tenons upon the top of which enter into a mortise in the beam *a'*, the end of the beam *a'* mortising into the frame of the machine at *a''*. By raising the beam *a'* so as to clear the tenons of the post *a*, and then pulling it forward longitudinally, so as to release its terminal tenons from the mortises in which they are inserted, the feed-table may be removed from the machine whenever it is necessary for any purpose to do so. *B* represents the toothed threshing-drum, which is of the usual construction, running on the shaft *d*. *E* is the apron, which carries the hay and chaff after they escape from the thresher to the rear of the machine, being assisted in its operation by the toothed beater-wheel *F*. *G* is the pick, operating between the apron *E* and the straw-carrier *H*. *I* is the hulling-drum, *K* the fan, *L L* cleaning-sieves, and *M* a box to receive the seed after it comes through the machine cleaned. Whatever chaff may remain on the sieves *L L* and be carried to their rear extremity will fall into the inclined conducting-box *N* and be carried to the elevator *O*, by which it will be returned to the front part of the machine and emptied again upon the feed-table, again to make its passage through the machine. Upon the left-hand end of the shaft *d* are two pulleys, *d' d''*, the inner one, *d'*, carrying a belt, *d'''*, which operates the fan *K* by means of the pulley *k*, and the outer one, *d''*, carrying another belt, which operates a large pulley, *f*, on the extremity of the beater-shaft. The pulley *d''* is small, and the pulley *f* large, in order to decrease the velocity of the beater. Inside of the large pulley *f*, and attached to the same shaft, is a small pulley, *f'*, which, by a belt crossed in order to reverse the direction of revolution, communicates motion by the pulley *e''* to the roller *e'*, which carries the rear end of the apron *E*. Outside of the pulley *e''*, and attached to the same shaft, is a second and smaller pulley, *e'''*. The latter carries a belt which operates the shaft *h*, upon which the rear end of the straw-carrier is supported by means of a pulley, *h'*. Inside of this pulley, and attached to the same shaft, is another and larger pulley, *h''*, which, by means of a belt and a pulley on the end of the pick-shaft, operates the pick *G*. The rollers upon which the front ends of the apron *E* and the straw-carrier *H* work are inside of the machine, and are represented in fig. 1 at *e⁴* and *h³*. *P* is a pitman, jointed at *p*, and operated by the crank-pin *p'* on the pulley of the fan. By an armature near the joint *p* it agitates the cleansing-sieves *L L*, and by means of a right-angled lever, *l*, to which its extremity is jointed, it operates the conducting-box *N*. The latter is slightly inclined, to facilitate the passage of the uncleansed chaff into the elevator. *R* is a basin, situated over the cleansing-sieves, and having an aperture in its bottom, into which the seed can be placed if necessary, in order to pass it a second time through the cleansing-sieves and remove whatever impurities may have been left by the first winnowing. *g*, figs. 2 and 4, is a belt-drum running loosely on the end of the shaft which carries the hulling-drum. Outside of it, firmly attached to the same shaft, is a secondary belt-drum, *g'*. The outer end of the drum *g* is provided with ratchet-teeth into which works a pawl on the inner face of the drum *g'*, the ratchet and pawl being so arranged that when the power applied from the shaft of the thresher by means of the belt *C* and the drum *b* works the drum *g* from right to left, the ratchet and pawl will operate the outer drum *g'* and through it the huller; but when the power is applied to the drum *g* in the opposite direction, that drum

will have a motion of its own, entirely independent of the motion of the outer drum g' and its shaft. By this means the motion of the huller will be rendered uniform, notwithstanding any irregularities in the action of the threshing-drum from which the motive power is communicated; for whenever the belt C is delayed in its movement, and thereby diminishes the velocity of the drum g , the drum g' will run on at its high rate of speed entirely independent of the action of the inner drum g . On the extremity of the shaft of the beater F, fig. 2, is a drum from which a belt carries motion to the wheel S, which operates the elevating mechanism. A crank on the opposite end of the axle of the wheel S agitates the conducting-box T, and facilitates the passage of the chaff from the elevator to the feed-table. U is a pitman, connecting the fan-wheel K with the cleansing-sieves L L and with the corresponding arrangement on the left side of the machine, rendering the motion of those sieves even and regular. $v v'$ are pins and links by which the cover or case enclosing the cleansing-sieves is fastened in its place. W is an inclined table directly under the straw-carrier, and upon which the lower side of the straw-carrying apron rests. Of course, whatever chaff falls upon this table from the straw-carrier over it will, by the action of the returning-bars of straw-carrier, be scraped along the inclined table W and delivered to the huller. This table also receives the chaff from the apron E and conducts it to the huller. The bars of my straw-carrier, it will be observed, are of peculiar construction. I make them double—two parallel strips of wood one-half or three-fourths of an inch thick, and an inch or two in width, fastened together by little blocks at each end, and resting on their edges. This gives them strength enough to support the straw, while their thinness presents but little obstruction to the falling of the chaff through between the slats to the table W. $y y$ are movable bearings in which the pick-shaft runs, and which enable it to be adjusted higher or lower, as may be desired, by means of the pin y and the slot and pin y' .

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The adjustable pick G, working in the movable bearings $y y$, substantially as and for the purpose described.
2. The drums $g g'$, connecting or disconnecting with each other when in motion by the ratchet and pawl, substantially as and for the purpose specified.
3. The combination and arrangement of the thresher B, the beater F, the apron E, the pick G, the straw-carrier H, the table W, the huller I, the frame K, the cleansing-sieves L L, and the elevator O, all constructed and arranged substantially as and for the purpose specified.

To the above specification of my improvement I have signed my hand this 26th day of April, 1867.

I. N. YOUNG.

Witnesses:

CHAS. A. PETTIT,
S. C. KEMON.