

W. D. JONES.

Corn Husker.

No. 85,593.

Patented Jan. 5, 1869.

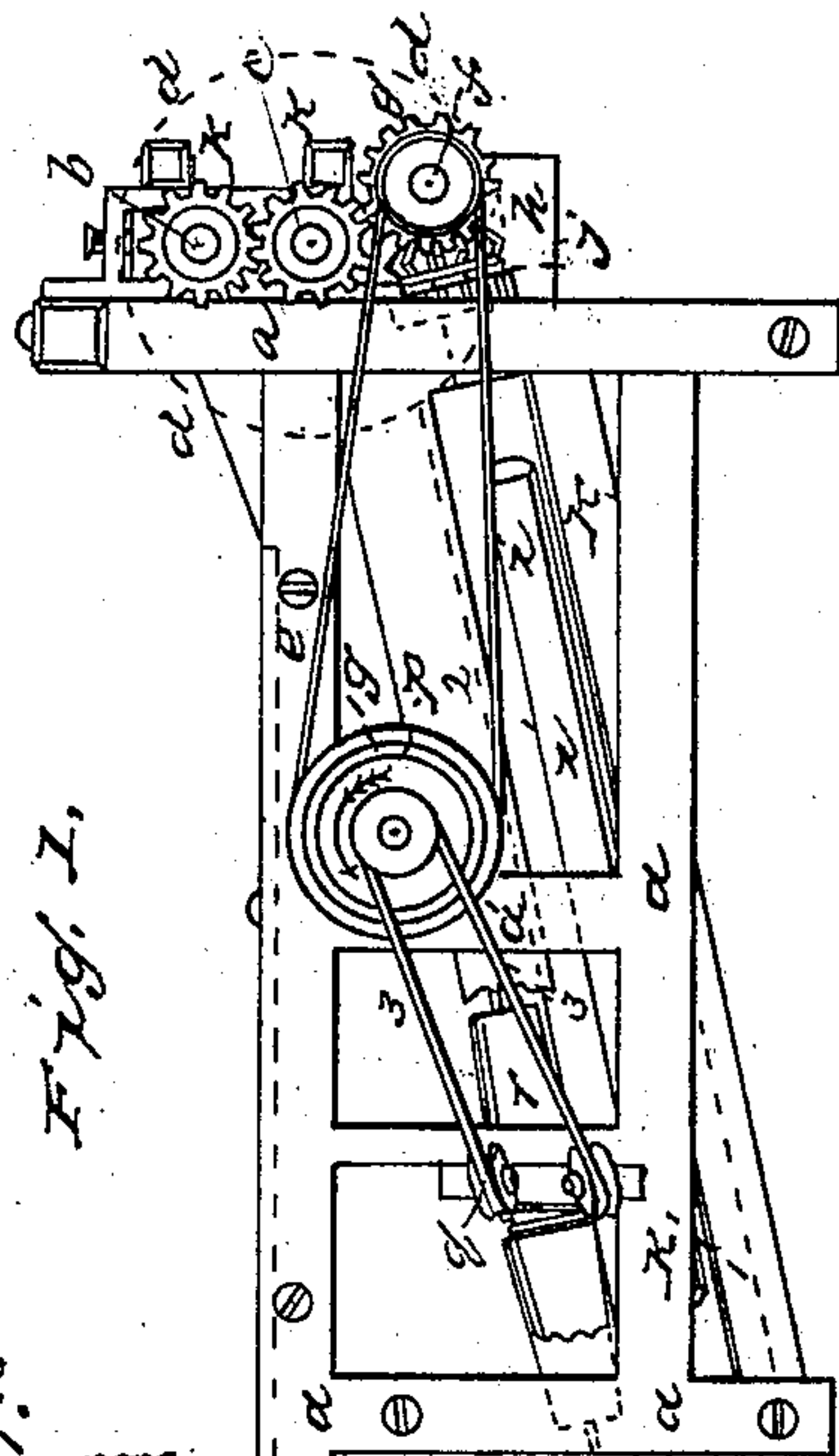
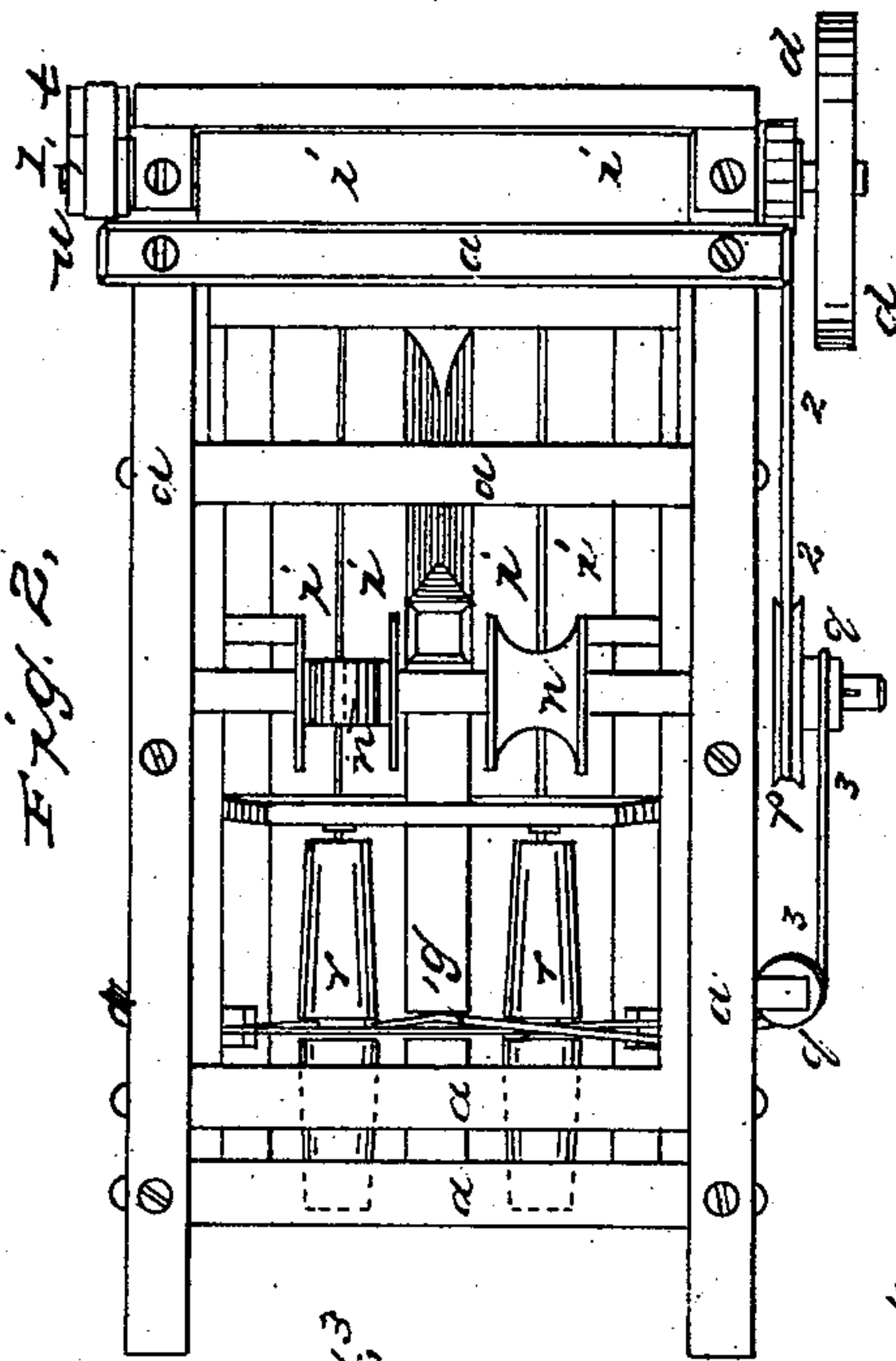


Fig. 3,

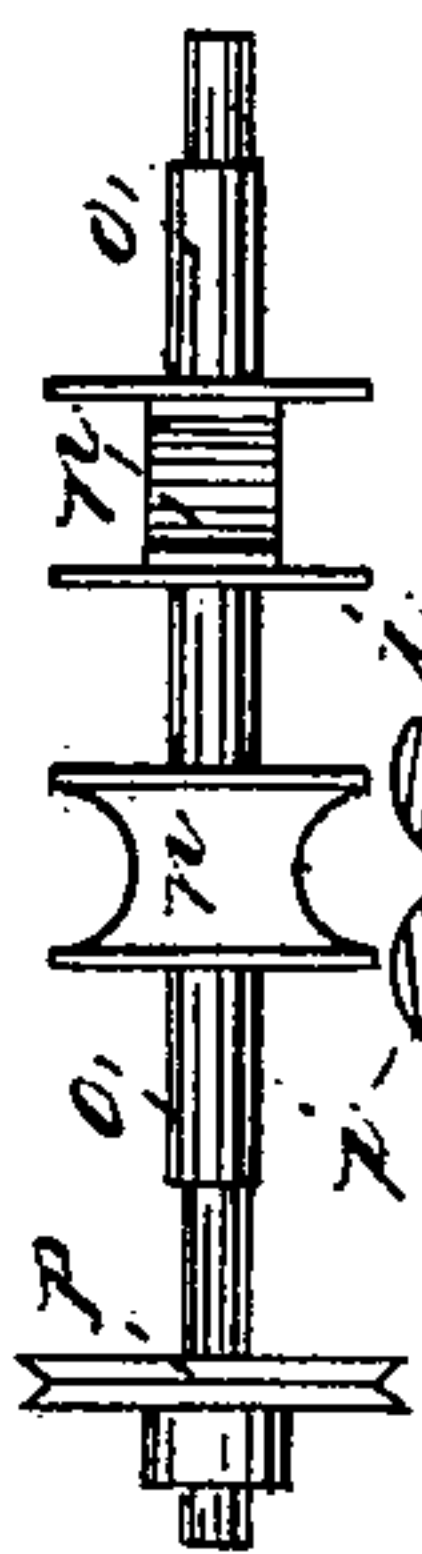


Fig. 4,



Fig. 5,



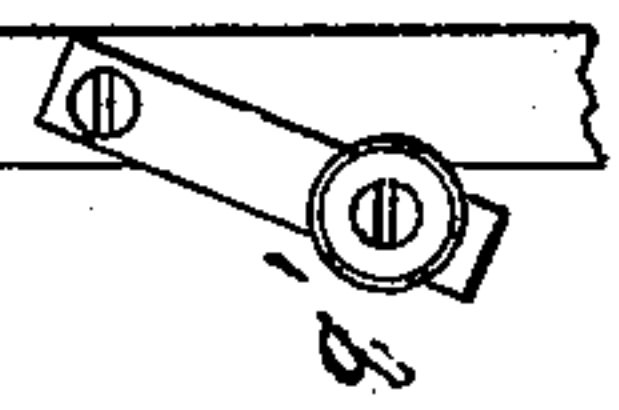
Fig. 6,



Fig. 7,



Fig. 8,



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Letters Patent No. 85,593, dated January 5, 1869.

IMPROVEMENT IN CORN-HUSKING MACHINE.

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

Be it known that I, W. DAVIDSON JONES, of Hagaman's Mills, in the county of Montgomery, in the State of New York, have invented a new mode of constructing and operating a machine which I denominate a Corn-Husker; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Before proceeding with the description of my invention, I will briefly explain the views of the drawings.

Figure 1 represents a side view of the invention, arranged in working-order.

Figure 2 represents a top view of the invention, showing the relative positions of the husking or stripping-rollers, separators, auxiliary rollers, hopper and scraper-bars, pulleys, driving-wheel and gear to the butting or feed-rollers, and band-connections to each other, when in position.

Figure 3 shows a side view of the separators, (with transverse sections, Figure 3²), and its relative position to the husking or stripping-rollers, which separators revolve in the direction indicated by the arrow on pulley *p*, as shown in fig. 1, making a part of this specification.

Figure 4 represents a lengthwise view of one of the auxiliary rollers, showing the form thereof, and the form of the boxes in which the bearings to said rollers rest or move, which boxes are made in an oblong form, and slotted, as shown by the oblong space or opening exhibited in the drawing of said oblong boxes.

Figure 4² shows a transverse section of such auxiliary rollers, with the relative position thereof to the husking or stripping-rollers, when placed in the corn-husker.

Figure 5 represents an end view of the gear which moves the husking or stripping-rollers.

Figure 6 is a top view of gear, fig. 5, with the counter-shaft, bevelled gear-wheels or pulleys, and boxes, which are hereinafter particularly described.

Figure 7 represents a side view of one of the husking or stripping-rollers, exhibiting the groove or slot in said rollers, and the necessary gear which moves said rollers.

Figure 7² shows a transverse section of the husking or stripping-rollers, exhibiting the boxes in which the bearings to the same move.

Figure 8 represents the adjustable pulley, (which is placed on the rear side of the upright post in the frame, on the left side of the machine, in rear of or just behind the separators,) and upon which the driving-belt which turns the auxiliary rollers moves. This pulley is also used for the purpose of tightening said belt for the purpose of raising said auxiliary rollers, or partially suspending said rollers by the tension of the belt.

In the drawings and sections, making a part of this specification, the frame is made of wood, and the auxiliary rollers *r r r* are also made of wood. Wood-work represented in the drawings is traced in black ink, and the metal parts are traced in red or carmine ink.

Having described the character and representations of my invention, as exhibited in the drawings of the several parts thereof, I will now proceed (clearly as may be) to illustrate the manner of constructing my invention, and the particular office of each part thereof.

I construct a frame, of wood, iron, or other material, arranged substantially as shown by *a a a a a a a*, fig. 1, and *a a a a a a a a*, fig. 2.

I then construct two rollers, from cast or wrought-iron, or other material, which I make about three inches in diameter, and about thirty-two inches long. One of these rollers is made with a smooth surface, and on each side, and lengthwise of the other roller, I cut or cast a groove, about three-sixteenths of an inch deep on the back or cutting-edge of such groove, and about one and an eighth inch wide from the sharp or cutting-edge to the feather-edge, the form of which groove is also shown by the right-hand reverse section of said roller, fig. 4². This groove or slot runs the length of such roller, to within about two inches of each end, which peculiarity is to preserve, at the ends of this roller, a circular or cylindrical form, in order that the same may, in its revolutions, maintain a circular motion correlative with the smooth roller, against and with which it turns, and thereby preserving the cutting-edge of the groove.

These two rollers are placed crosswise of the front part of the frame *a a a a a a a*, figs. 1 and 2, and are arranged for butting or feed-rollers, the smooth-surface roller being placed uppermost, and the grooved roller placed beneath and next to said smooth roller. The ends of the upper roller rest in movable boxes, the position of which boxes is regulated at each end by the boxes thereof resting against rubber or steel springs, adjusted with set-screws, which serve to permit the space between these butting or feed-rollers to conform to the size or bulk of corn-stalks passing through between them.

The right end of the upper roller has a bearing, which extends through the box attached to the frame *a a a a a a a*, figs. 1 and 2, (in which such rollers are fixed,) upon which bearings is affixed a long-tooth gear-wheel, *b b*, fig. 1, which runs in or upon another long-tooth gear-wheel, directly beneath, on the bearing of the under or grooved roller *c c*, fig. 1.

Upon the extension of the bearing to said lower roller, I place a driving-wheel, represented in fig. 1 by the dotted line *d d d*.

Across the front end of the frame *a a a a a a a* of this corn-husker, and under the butting or feed-rollers hereinbefore described, I place an iron shaft, as shown by letter *f* in figs. 6 and 1, each end of which passes through and turns in metal boxes fastened to the frame *a a a a a a a*.

On the centre or middle of this shaft, I place a bevel-gear wheel, marked *g*, figs. 6 and 1, which rests or runs against another counter-bevelled gear-wheel, marked *h*, figs. 6, 1, and 5, which last wheel is fastened to the

front or upper end of one of the husking or stripping-rollers, which rollers are hereinafter more particularly described. This last-named bevel-wheel communicates the power used to the husking or stripping-rollers.

The husking or stripping-rollers of my invention are constructed of cast or wrought-iron, or other material, and are made about four feet long and about three inches in diameter, and, when adjusted for use, are arranged in pairs, as will more fully appear hereafter.

These husking or stripping-rollers are constructed in the same manner as the butting or feed-rollers hereinbefore described; that is, each pair consists of one smooth roller and one grooved roller, which groove or slot I cut lengthwise, and on each side of the roller, about three-sixteenths of an inch deep on one side, (which I call the back or cutting-edge of the groove,) and about one and an eighth of an inch wide from the cutting or sharp edge to the feather-edge; the groove, with respect to the surface of the roller, being slanting.

When these rollers are placed in the frame hereinbefore described, they are to be arranged in pairs, one smooth and one grooved roller, in an inclined position, at the ratio of inclination of about three and one-half inches to the foot, as represented by *i i*, fig. 1.

The groove is represented by letters *i i*, figs. 1, 2, and 7, and in sections 3 and 4².

At the upper ends of each of these husking or stripping-rollers are bearings, upon which I place long-tooth gear-wheels, *j j*, figs. 5, 6, and 7, which move in concert by the action of the gear-wheel *h*, figs. 6 and 7, as hereinbefore particularly described.

On the lower sides of each pair of these husking or stripping-rollers, (and also on the outside of the machine, as shown in fig. 1, by *k k*, on a horizontal line with the centres of the feed or butting-rollers,) I place metal scrapers, which are represented by dotted lines *k* on the roller *i i*, fig. 1, fastened to wooden bars or strips running the entire length of the rollers, which scrapers are intended and used for the purpose of keeping said rollers clear of any foreign substances which may be likely to adhere thereto.

The lower and upper ends of the husking or stripping-rollers turn on bearings in metal boxes, substantially as represented in fig. 7.

The bearings of the outer or grooved roller are supported by and turn in suitable movable metal boxes, as shown by *l l*, in centre of fig. 7².

Said boxes *l l* fit into suitable metal shells, as shown by *m m*, fig. 7², and held in position by rubber or steel springs, adjusted by set-screws, so as to allow the rollers to yield to the inequality of the bulk of corn-husks or stalks which may pass between them.

Another and chief feature in these husking-rollers, and butting or feed-rollers, is the peculiar form of them, as hereinbefore particularly and respectively set forth, thereby making the capacity of the husking or stripping-rollers equal to that of the butting or feed-rollers, the only difference being in the position they respectively occupy in the machine, and the length of them.

This uniformity and construction of the husking or stripping-rollers is necessary and intended, so that they shall be of the same or of similar dimensions as the butting or feed-rollers, except as to length, in order that stalks with ears of corn attached may pass (breaking off the ears, and husking the same,) freely through between the two husking or stripping-rollers, and also that stalks, pieces of stalks, leaves, and like matter, which must of necessity sometimes fall with the broken-off ears or corn upon the husking or stripping-rollers, in front of the separators, may pass through without clogging or obstructing the working of the machine.

The boxes in which the bearings of the husking or stripping-rollers which are not grooved, move, are stationary, and the boxes in which the bearings of the

grooved or slotted butting or feed-rollers move, are stationary.

I also construct and place in the husker, crosswise, above or over the centre of the husking or stripping-rollers, separators, as shown by *n n*, fig. 2 and figs. 3 and 3². These separators are placed upon an iron shaft, *o*, figs. 2 and 3, the body of which separator, *m m m m*, is made of wood, and of the form shown by lower *n*, fig. 2, and upon each side of these wooden bodies I place iron flanges, as indicated by red-ink tracings.

Each separator is set at quarters, with respect to each other, upon the shaft which turns them—shaft *f*; said shaft extending sufficiently beyond the frame, on the right-hand side thereof, to allow the placing on such shaft of pulleys *p q*, which pulleys are driven by band 2 2, in connection with pulley *e*.

These separators are used and intended for the purpose of singling out or stringing the ears of corn in line, one after the other, and arranging them, so they may pass down the inclined space between the husking or stripping-rollers; and the flanges are intended and used as guides for directing and keeping the ears of corn in their proper channel aforesaid. This shaft, upon which the separators are suspended, is turned by means of a band or belt, marked 2 in figs. 1 and 2, going around pulley *p* and pulley *e*, fig. 6, on the right extreme of the shaft *f*.

Around the small part of pulley *p*, figs. 1 and 3, I place a band, as shown by small figures ³ in figs. 1 and 2, which passes back over two small pulleys, figs. 1 and 2, by *q'*, and then through, and crossing the auxiliary rollers alternately, the machine, to and around a small movable pulley, *q'*, fig. 2 and fig. 8, on the opposite side of the machine.

This band is passed through the machine crosswise, over and under the auxiliary rollers *r*, figs. 2, 1, and 4, and is used for the purpose of turning, supporting, and elevating, if necessary, the said auxiliary rollers *r*, substantially as represented in fig. 2.

Whenever it is necessary to elevate these auxiliary rollers, or to tighten the band 3, the same may be done by moving the movable pulley *q'*, fig. 2 and fig. 8, outward, in the position as shown in fig. 8.

The auxiliary rollers marked *r*, figs. 1, 2, and 4, are made of wood, or other material, of a form somewhat resembling a double cone, with a groove cut around the centre part, over which the double cross-band 3, as shown in fig. 2, passes.

At each end of these auxiliary rollers I place, or insert in the ends of the centre, metal bearings, resting or turning in oblong boxes, represented by *s s* in fig. 4. These boxes are constructed so as to allow a perpendicular motion to the auxiliary rollers.

These auxiliary rollers are suspended directly over the centre, between and in the same position of inclination as the husking or stripping-rollers, and the provision for the perpendicular motion of these rollers, as hereinbefore described, is made for the purpose of crowding or holding down a small ear of corn upon the gutter formed by the two husking or stripping-rollers, when it comes under one end of said auxiliary rollers at the same time when a large ear of corn has, by its size, necessarily elevated the other end of the same roller, by which motion and operation, and in conjunction with the rotary motion of the same auxiliary roller and that of the husking-roller, each and every ear of corn which passes through the machine, whether large or small ears, is turned over and over, presenting every side of each ear to the action of the husking or stripping-rollers, and finally stripped of any and all husks or silk which theretofore have been missed.

These auxiliary rollers are driven by being connected, by bands 2 and 3, as shown in fig. 1, with the

shaft *f*, fig. 6, in front of the machine, as hereinbefore described, the left bearing of which shaft *f* has a pulley, at the point marked *t* in fig. 2 and fig. 6, affixed thereon, which is connected with the pulley *u*, fig. 2, on the left bearing of the under or lower butting-roller.

This machine or invention, thus constructed and arranged as I have herein described, is propelled by horse, water, or steam-power, applied to the driving-wheel, shown by the dotted lines in fig. 1, and *d d* in fig. 2.

When the machine is in motion, the corn-stalks holding the unhusked ears of corn, are fed over a table or lid, furnished and placed on the top of the frame *a a a*, and pushed against the butting or feed-rollers, placed in front of the machine, as hereinbefore described.

The slot or groove upon the under or lower one of these rollers, in conjunction with the smooth roller, seizes the stalks, and by the revolving motion of such rollers, the stalks are carried on through between these butting or feed-rollers, while the ears of corn are cut off, and drop or fall down promiscuously in bulk, as the case may be, upon the husking or stripping-rollers, in front of the separators hereinbefore described, which last-named rollers, the one grooved or slotted, and the other smooth, as herein set forth, strip the ears of their husks and silk, which husks and silk pass down between the husking or stripping-rollers, underneath the machine, and the ears of corn ride on, down the lap or gutter formed between the two husking or stripping-rollers, against the separators, placed as herein described, which separators whirl the ears of corn over and over, and arrange them singly in line, one after the other, and thus they pass under these auxiliary rollers, on down the gutter formed by the husking or stripping-rollers, which are arranged in pairs, and are delivered at the lower rear end of the machine.

I do not limit my invention to the number of pairs of husking or stripping-rollers, for they may be duplicated in number, according to the capacity of the machine desired to be constructed.

The advantages gained by this invention are manifold, and chief among them is the fact that by the ar-

rangement, made as herein described and set forth, corn may be husked cleaner, and far more rapidly than by any other mode.

Labor is saved in husking. The stalks, by passing through between the butting-rollers, are crushed so as to render them in better condition for "fodder," while the husks are separated from the stalks, so that they may be easily gathered for use in mechanical purposes.

I do not confine myself to any given length of butting or feed-rollers, but they are to be made, as to length, according to the size of the machine required.

I am aware that there have been other and various machines or designs and arrangements for husking corn by machinery, patented heretofore. All such I disclaim. I also disclaim rollers merely for husking corn.

What I do claim, and desire to secure by Letters Patent, is—

1. Rollers, in pairs, one of which shall be smooth, and the other grooved lengthwise, in the manner as hereinbefore set forth, and operating substantially as and for the purpose shown and set forth.

2. The separator *n*, operating as and for the purposes substantially as shown, and hereinbefore set forth.

3. The auxiliary rollers *r*, acting in combination with the stripping or husking-rollers *i i*, operating substantially as and for the purposes as shown and set forth.

4. Constructing the husking-rollers of the same form and capacity as the feeding-rollers, except as regards their length, so that stalks of corn, or broken pieces of stalks, leaves, and like matters, that accidentally fall upon them, may pass through, the ears broken off and husked, and the husking-rollers thus kept clear from obstruction, as hereinbefore specified.

5. The belt 3 3 3, arranged as described, in combination with the pulleys *q*, *q*, *q*, and *q'*, operating substantially as described and set forth.

W. DAVIDSON JONES.

Witnesses:

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