

No. 758,792.

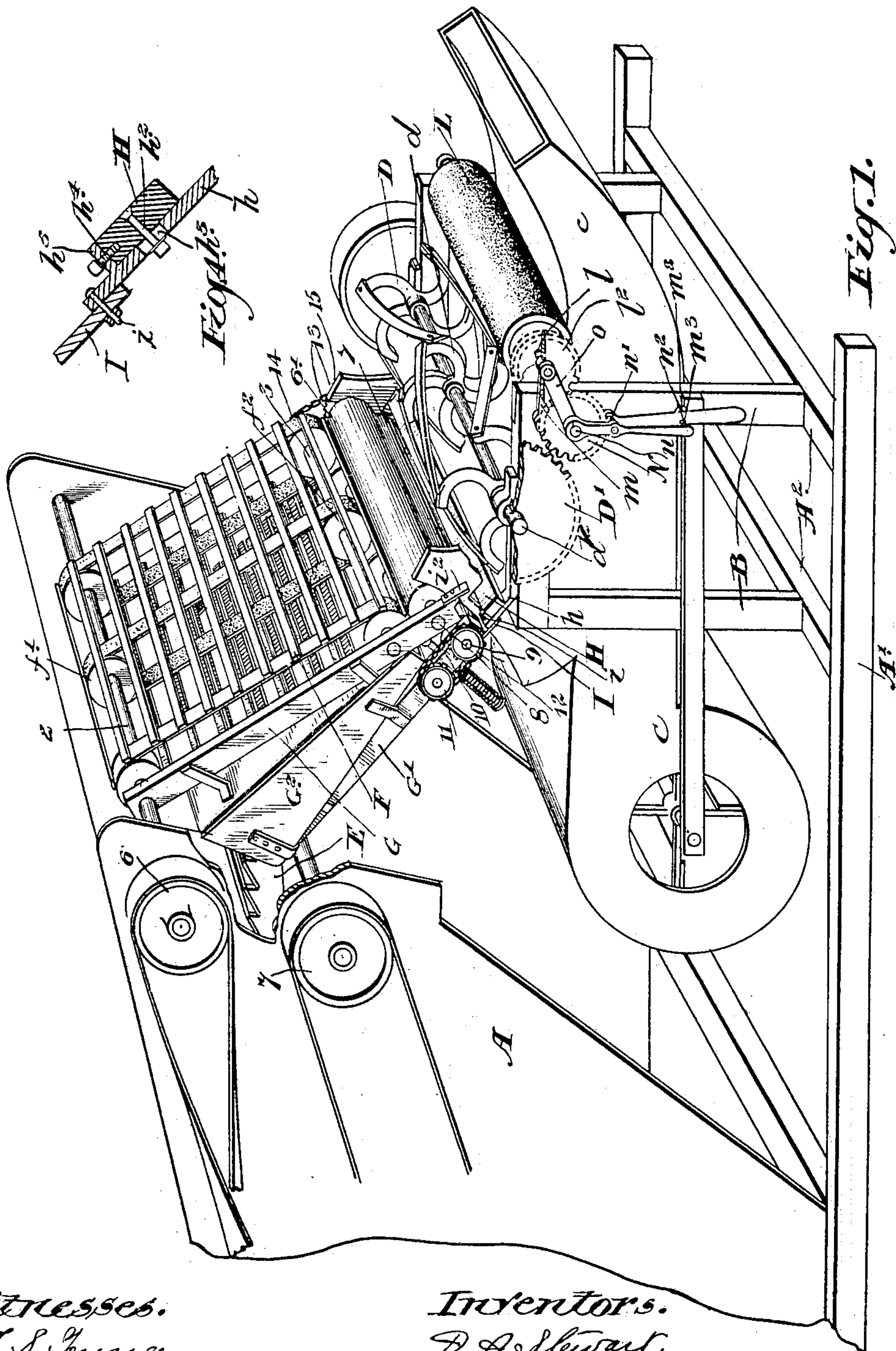
PATENTED MAY 3, 1904.

D. A. & J. F. STEWART.
STRAW CUTTER.

APPLICATION FILED DEC. 20, 1901.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses.
H. J. S. Gung.
H. Jumble

Inventors.
D. A. Stewart.
J. F. Stewart.
J. F. Stewart & Co.

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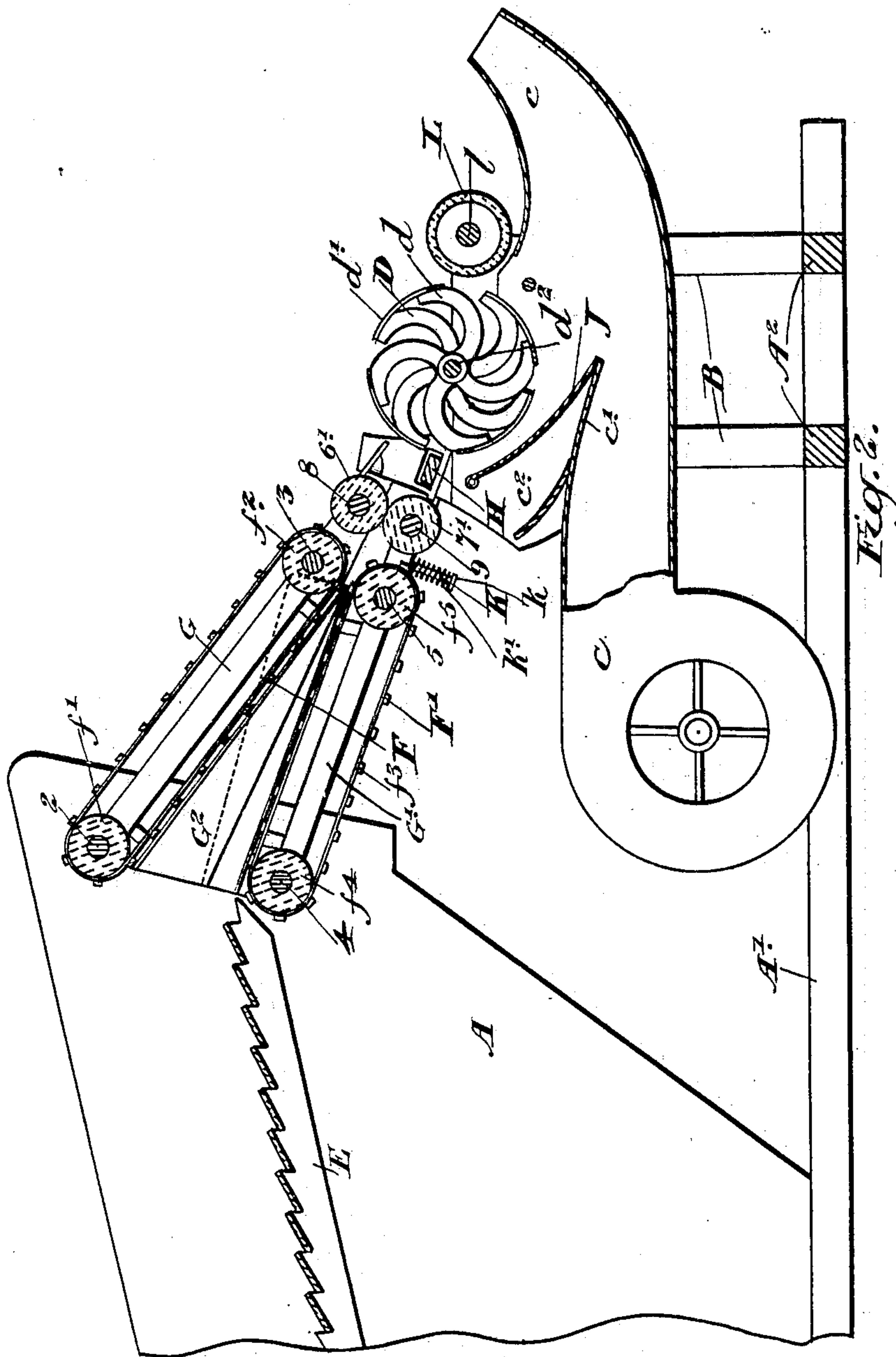


Fig. 2.

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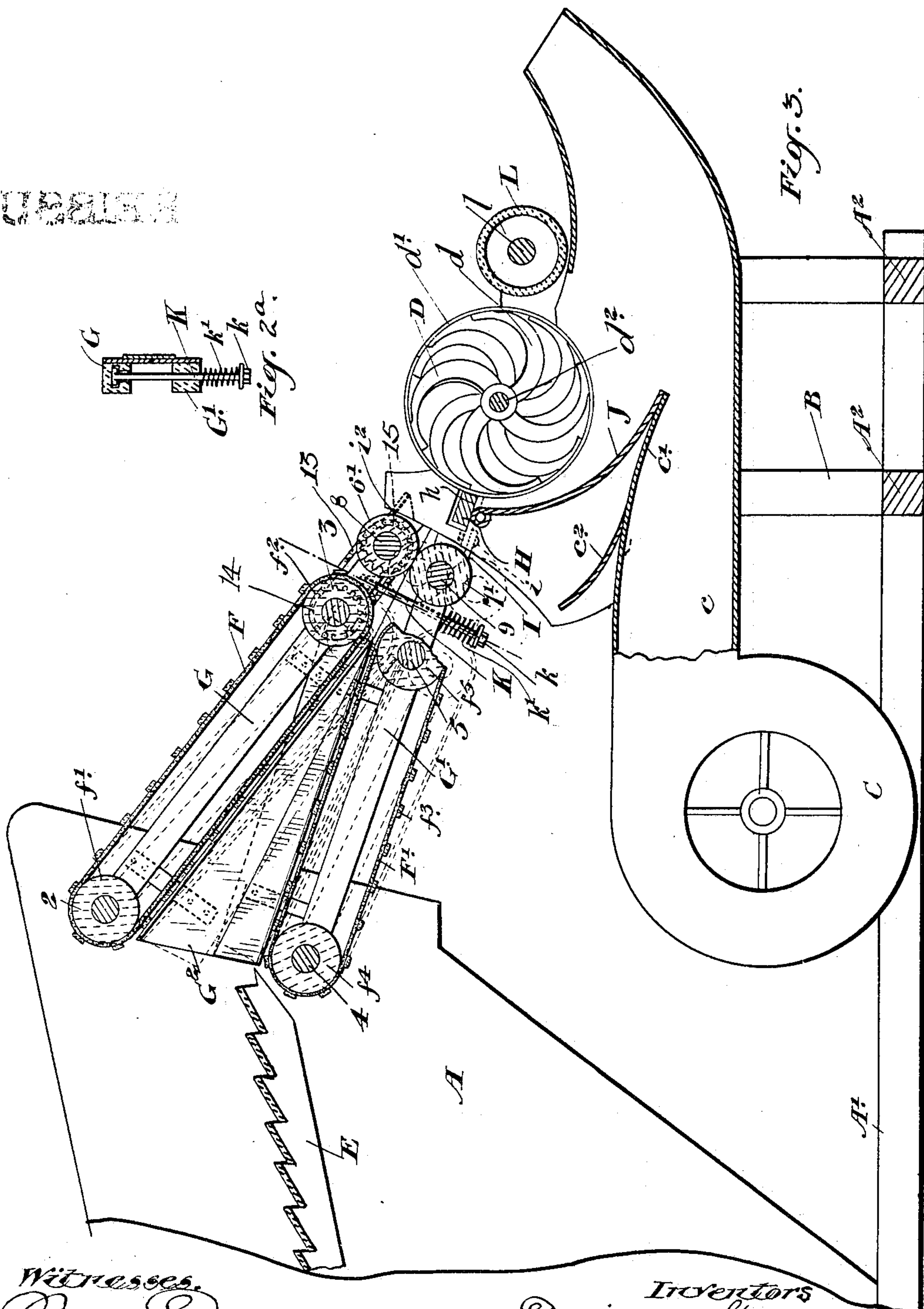
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STRAW CUTTER.

APPLICATION FILED DEC. 20, 1901.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

DAVID ALBERT STEWART AND JOHN FERGUSON STEWART, OF MOLESWORTH, CANADA.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 758,792, dated May 3, 1904.

Application filed December 20, 1901. Serial No. 86,676. (No model.)

REISSUED

To all whom it may concern:

Be it known that we, DAVID ALBERT STEWART, manufacturer, and JOHN FERGUSON STEWART, farmer, both of the village of Molesworth, in the county of Huron, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Straw-Cutters, of which the following is a specification.

Our invention relates to improvements in straw-cutters; and the object of the invention is to devise a simple attachment to an ordinary threshing-machine whereby the straw may be cut as it passes out of the machine without having to feed the same manually after it has been stacked away, and thus an economy effected in both time and labor; and it consists, essentially, of two endless carrier feed-belts, which are suitably secured to the end of the frame opposite the straw-deck and a cutter provided with a suitable blower and casing, the outer ends of the feed-belt being suitably held together and supported on the casing of the cutter and the parts being otherwise arranged and constructed in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of the straw-delivery end of a threshing-machine, showing our attachment. Fig. 2 is a longitudinal section through the machine, the rotary cutting-knife, however, being shown in end elevation. Fig. 2^a is a view of a detail. Fig. 3 is a view similar to Fig. 2, showing, however, in dotted lines the low position of some of the parts. Fig. 4 is a detail view of the knife-bar and its support.

In the drawings like characters of reference indicate corresponding parts in each figure.

A is the frame of the threshing-machine, the end portion only of which is shown.

A' represents the longitudinal timbers of the frame A, which are connected together at the outer end by the cross-beams A² A². Upon the cross-beams A² is supported the frame B of the straw-cutting attachment.

C is the blower, which is suitably supported in the frame B and is provided with an exit-spout *c*.

c' is a deflecting-plate in the blower, and *c*² is a similar deflecting-plate.

D is the knife-wheel, which comprises the arms *d* and the blades *d'*, secured to the ends thereof. The blades at one end of the knife-wheel are inclined in one direction, and the blades at the opposite end are oppositely inclined or obliquely set. The shaft *d*² of the knife-wheel is supported at the end in suitable bearings.

E is the straw-deck, from which the straw passes into our attachment.

F is the upper feed-belt, composed of endless bands having cross-slats attached thereto, the said bands being supported on suitable pulleys *f'* *f*² on the shafts 2 and 3, respectively.

F' indicates the lower feed-belt, which is made up of endless bands provided with cross-slats *f*³.

The shafts 2 and 4 are journaled in suitable bearings in the sides of the frame of the threshing-machine and are provided with end pulleys 6 and 7, which derive motion by suitable belts from the main driving-pulleys of the machine.

G and G' are the side bars of the endless-feed-belt frames. The shafts 2 and 4 extend through such side bars at the top, and the shafts 3 and 5 extend through them near the discharge end, being suitably journaled therein.

G² represents flaring hopper-shaped sides secured to the side bars G and G' by suitable brackets, as indicated, and are wider at the feeding end of the straw than at the discharge end, so that the straw will readily pass between the endless feed-belts from the straw-deck.

6' and 7' are feeding-rolls having shafts 8 and 9, which are journaled in the side bars G and G'. The lower feeding-roll 7' is driven by the sprocket-chain 10, connecting the sprocket-wheels 11 and 12 on the shafts 5 and 9, respectively. The feeding-roll 6' is driven by the sprocket-chain 13, connecting the sprocket-wheel 14 with the sprocket-wheel 15 on the opposite ends of the shafts 3 and 8.

H is a knife-bar which is supported at the ends on the brackets *h* at the top of the frame B.

I represents extension-bars secured to the bottom of the bars G' and securely bolted to the brackets h by the bolts i. The position shown in the drawings is the normal position when my attachment is used in connection with the cutting of the straw.

J is a chute-plate which is pivoted or hinged below the knife-bar H and normally extends down and rests upon the deflecting-plate c'.

K represents rods which extend through the side bars G and G', being securely held in the upper side bars and depending below the lower side bars. The lower ends of the rods K are provided with nuts k and spiral springs k', extending between the nuts and the lower side bars.

It will be noticed that the knife-bar H is adjustably held in position by means of the bolts h², which extend through the slots h³ in the brackets h, and the set-screws h⁴, which extend through a rib h⁵ at right angles to the bracket h, attached to or forming part of the bracket h. It will thus be seen that the knife-bar may be readily set in a proper relative position to the blades of the rotating knife-wheel.

The straw passes from the straw-deck through the throat formed between the endless feed-belts, being carried downwardly by such feed-belts, which carry the straw between the rollers 6 and 7, whence the straw passes through to the knife-wheel, where it is cut up and passes along the chute-plate J to the bottom of the blast-tube of the blower, the blast from which carries it out through any suitable conveying means to the place of deposit. Should it be desired not to cut the straw, the feed-belts may be lowered by taking out the bolt i, so that the projecting bars i² on the upper edge of the bars G may rest upon the knife-bar H. The straw will now pass from the feed-belts under the chute-plate J, which will be lifted by the pressure from the straw. The straw will pass out between the said chute-plate J and the deflector c', and thus the straw will not come in contact with the cutter. Under ordinary circumstances when the straw is being fed of course the springs h' give sufficiently in order to prevent any choking of the straw between the feed-rollers 6 and 7 as it passes to the knife.

What we claim as our invention is—

1. The combination with the straw-deck of a threshing-machine the straw-cutting attachment comprising the knife-wheel and knife-bar, and the endless bands and discharge-rollers forming a conveying means from the straw-deck to the knife-wheel, of the blower having the spout thereof extending underneath the knife-wheel and a swinging deflecting-plate hinged in proximity to said rollers for directing the straw into the blast from the blower located in front of the knife-wheel beneath the knife-bar as and for the purpose specified.

2. In combination in a straw-cutter, cutting

means, a pair of endless aprons for delivering the straw to the cutters, supports for said aprons, means for adjusting the supports with the aprons thereon in relation to the cutting means whereby the straw may be directed to the cutting means or aside therefrom, whereby the straw may either be cut or delivered uncut at will and yielding means for holding the supports together at their ends adjacent to the cutting means, substantially as described.

3. In combination, in a straw-cutter, cutting means, a pair of endless aprons for delivering the straw to the cutters, supports for said aprons, means for adjusting the supports with the aprons thereon in relation to the cutting means whereby the straw may be directed to the cutting means or aside therefrom, whereby the straw may either be cut or delivered uncut at will and yielding means for holding the supports together at their ends adjacent to the cutting means, said yielding means comprising a spring carried by the supports so that the said spring will be effective in all positions of the aprons in relation to the cutting means, substantially as described.

4. In a straw-cutter, the combination with cutting means, of a pair of belts, means for causing their contiguous surfaces to move in the same direction, and means whereby said pair of feed-belts may be adjusted either to direct the straw to the cutter, or aside therefrom; whereby the straw may be either cut or delivered uncut.

5. In a straw-cutter, the combination with cutting means of a pair of belts, means for causing their contiguous surfaces to move in the same direction, means whereby said pair of feed-belts may be adjusted either to direct the straw to the cutter or aside therefrom; whereby the straw may be either cut or delivered uncut, bars supporting the feed-belts and a connection between the bars consisting of a rod and a spiral spring on the said rod, said rod being secured to one of the bars and extending beyond the other bar with the spring on the extended end of the rod, said spring serving to draw the two bars together substantially as described.

6. In a straw-cutter the combination of a stationary knife, rotary knives, means for feeding the straw to the knives, a grinding-roller arranged on the side of the rotary knives opposite to that upon which the fixed knife is located, an exit-spout for the straw extending under the rotary knives and the grinding-roll and means for moving the grinding-roller to and from the rotary knives, substantially as described.

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