

(No Model.)

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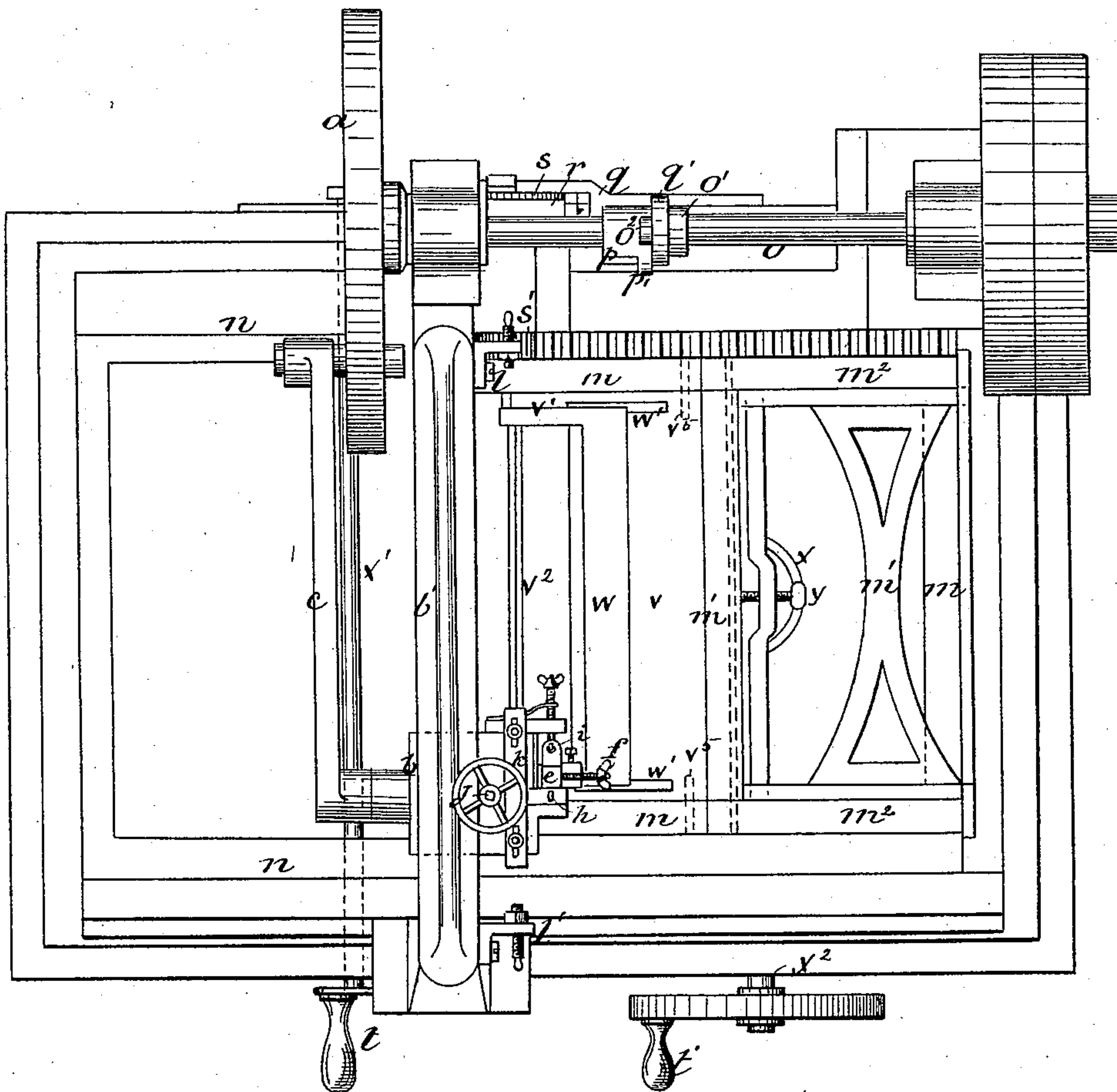
A. W. DARRÉ.

MACHINE FOR CUTTING CARDBOARD OBLIQUELY.

No. 589,075.

Patented Aug. 31, 1897.

FIG 1



Witnesses:
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Inventor

Anton Waldemar Darre

by his Attorney

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(No Model.)

3 Sheets—Sheet 2.

A. W. DARRÉ.

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FIG 2

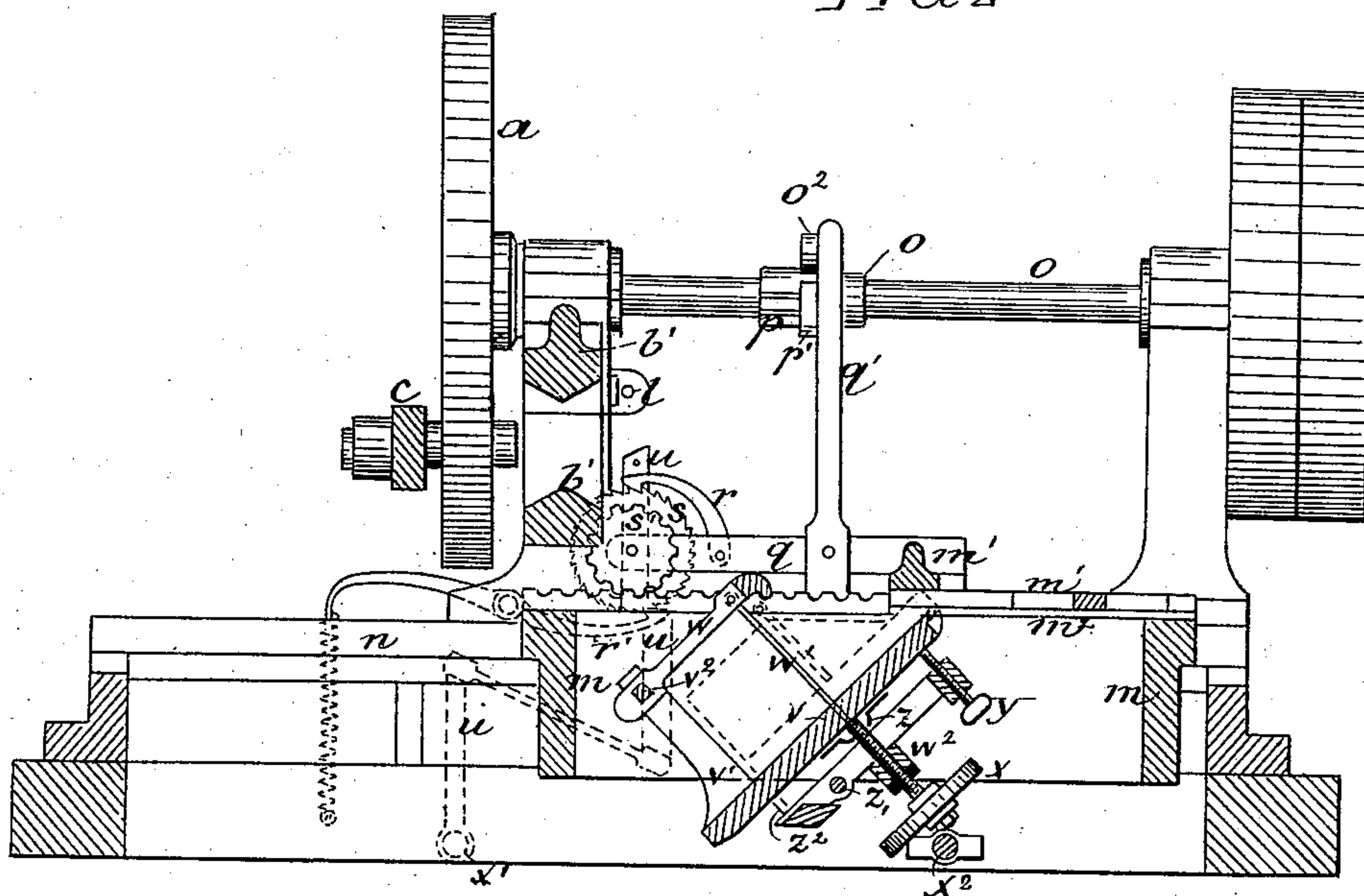


FIG 3

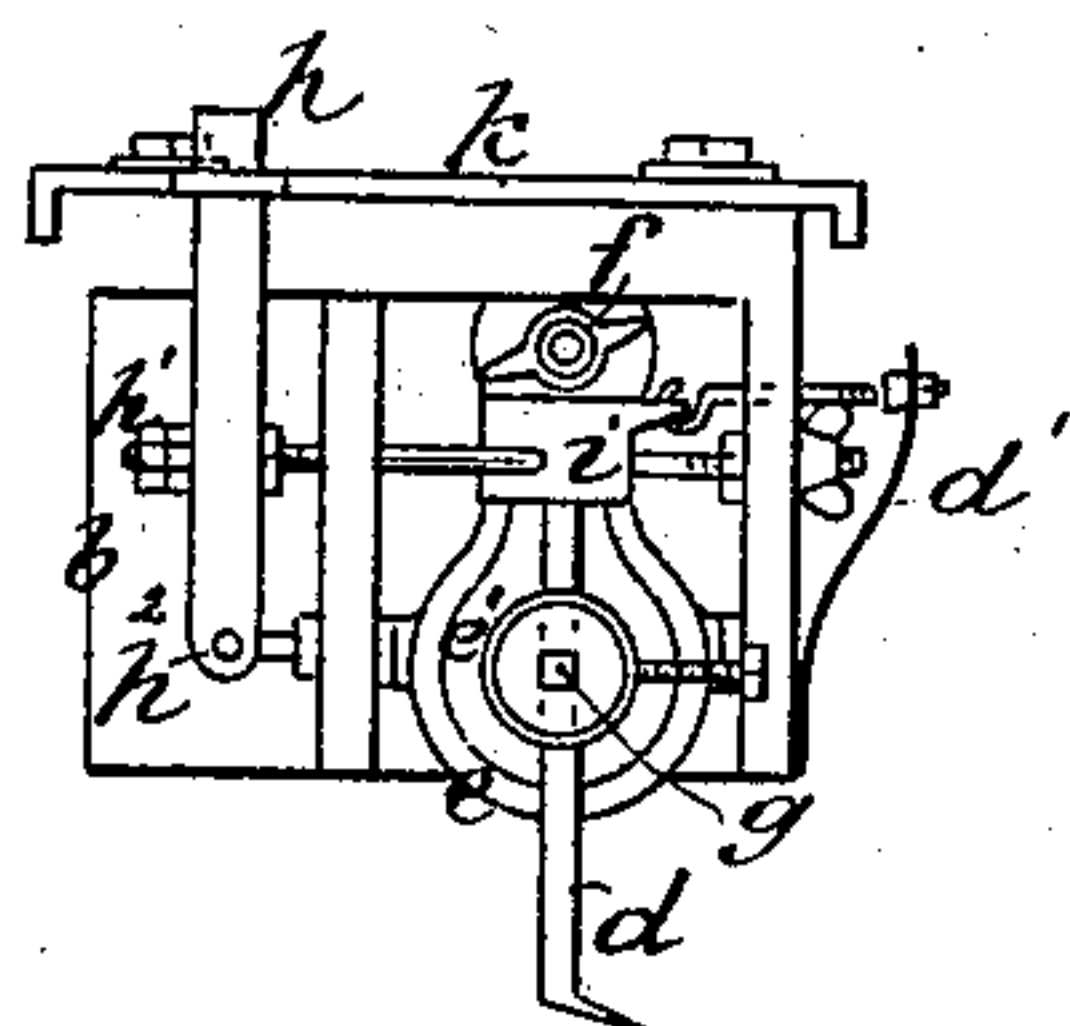
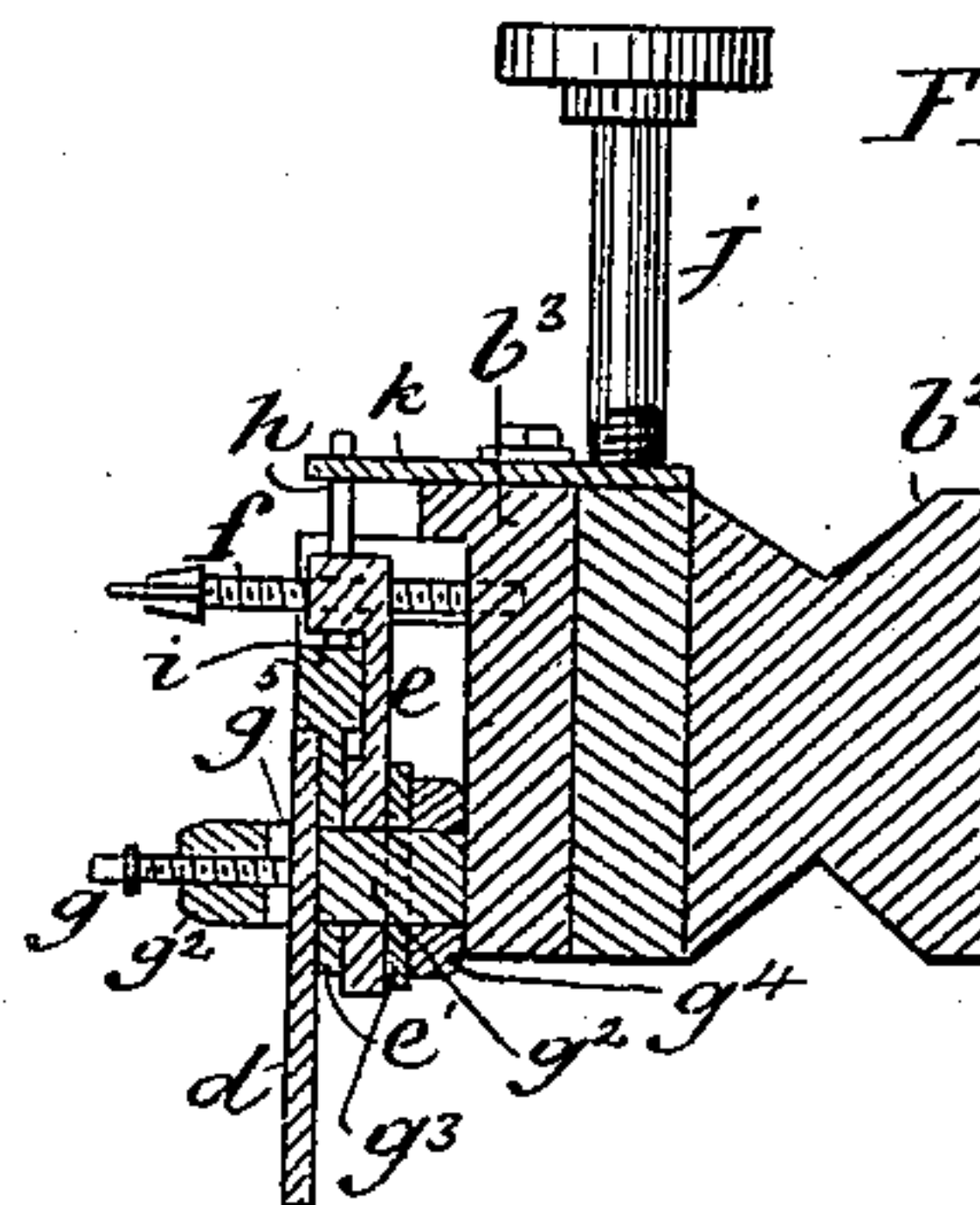


FIG 4



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(No Model.)

3 Sheets—Sheet 3.

A. W. DARRÉ.

MACHINE FOR CUTTING CARDBOARD OBLIQUELY.

No. 589,075.

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FIG 3

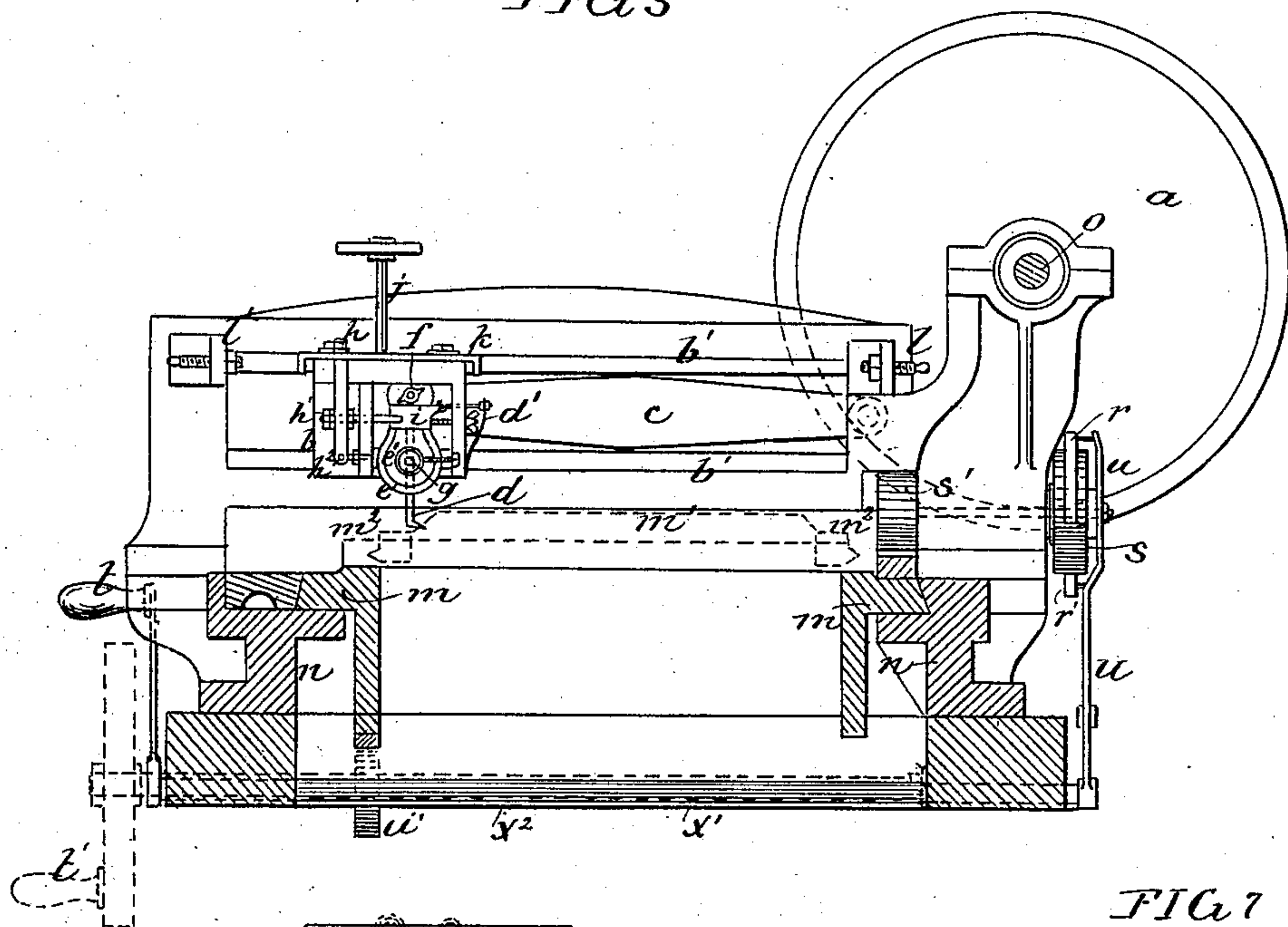


FIG 7

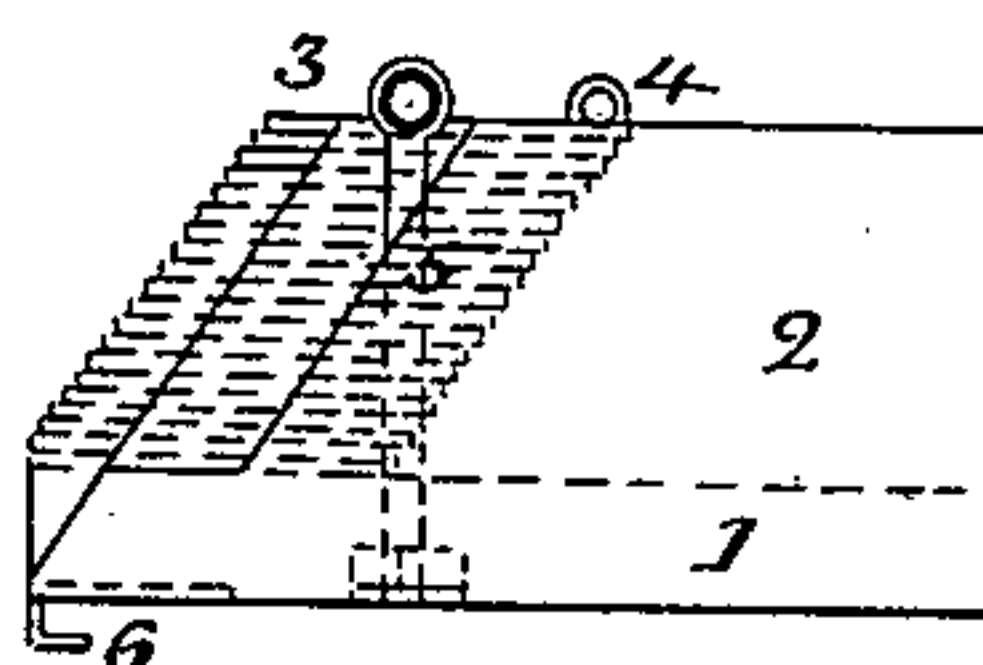
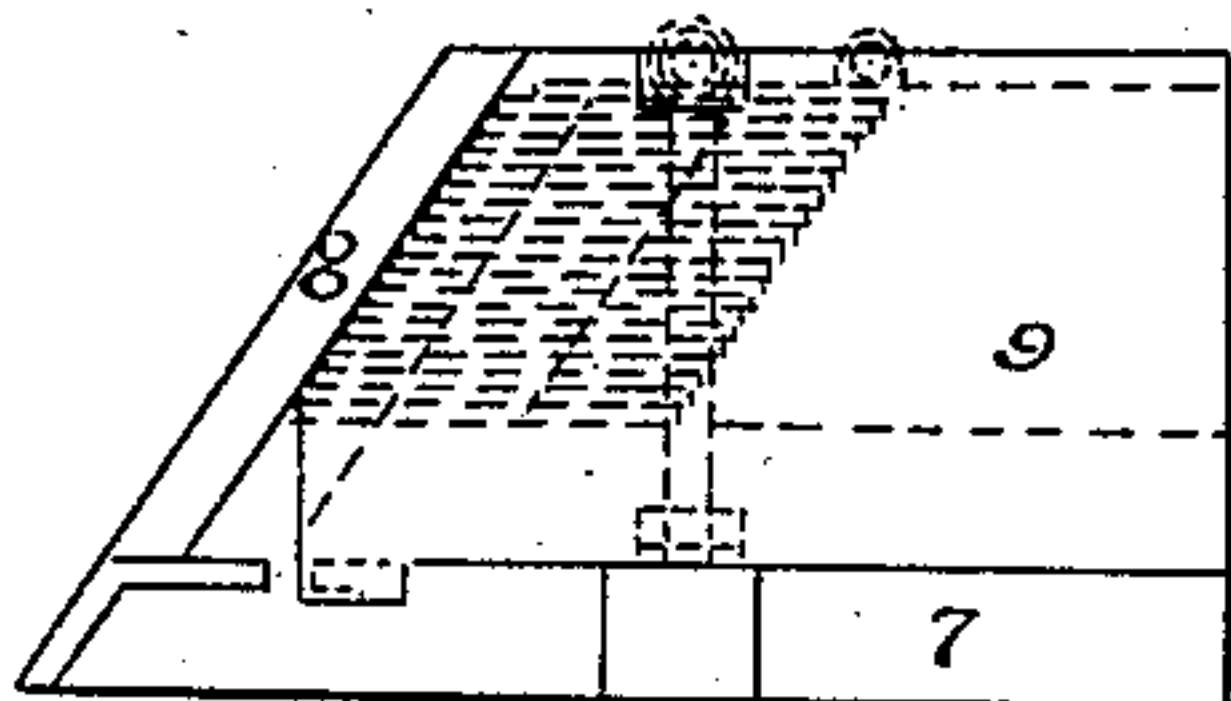


FIG 5



FJG 6

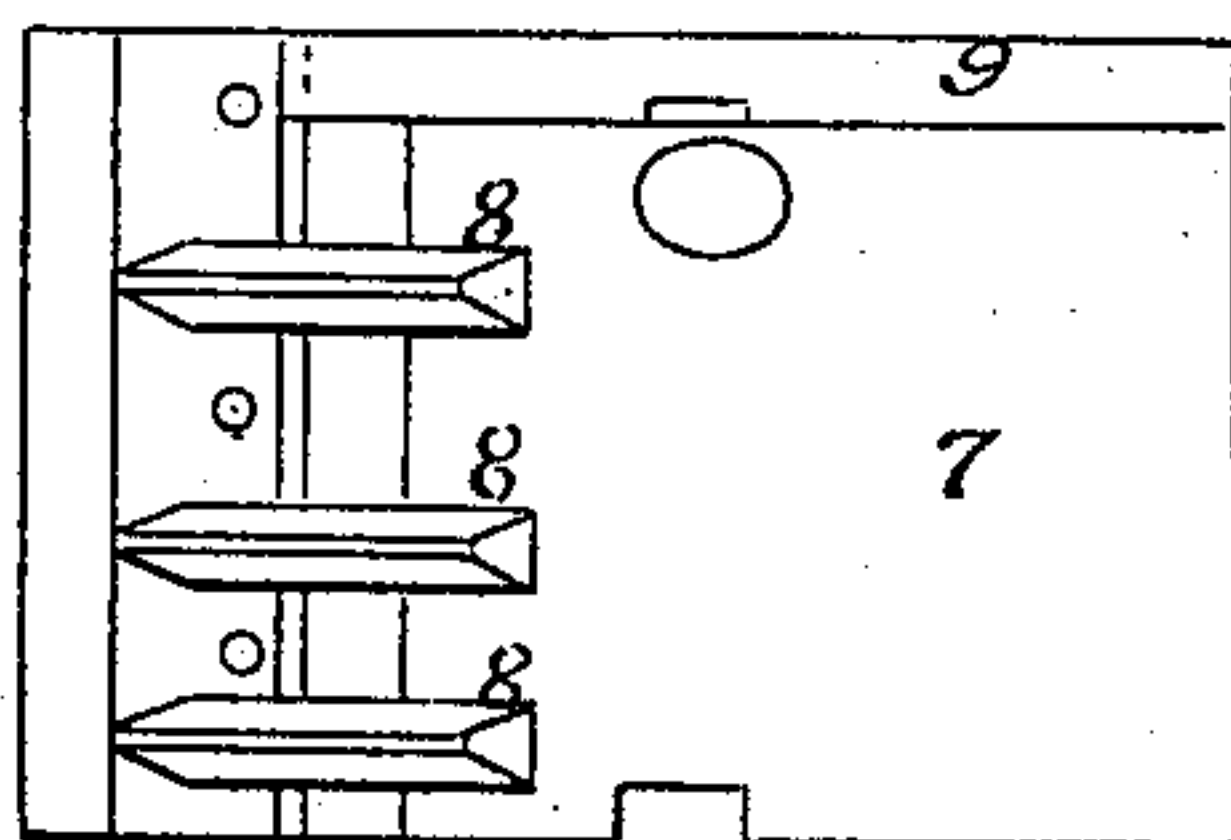
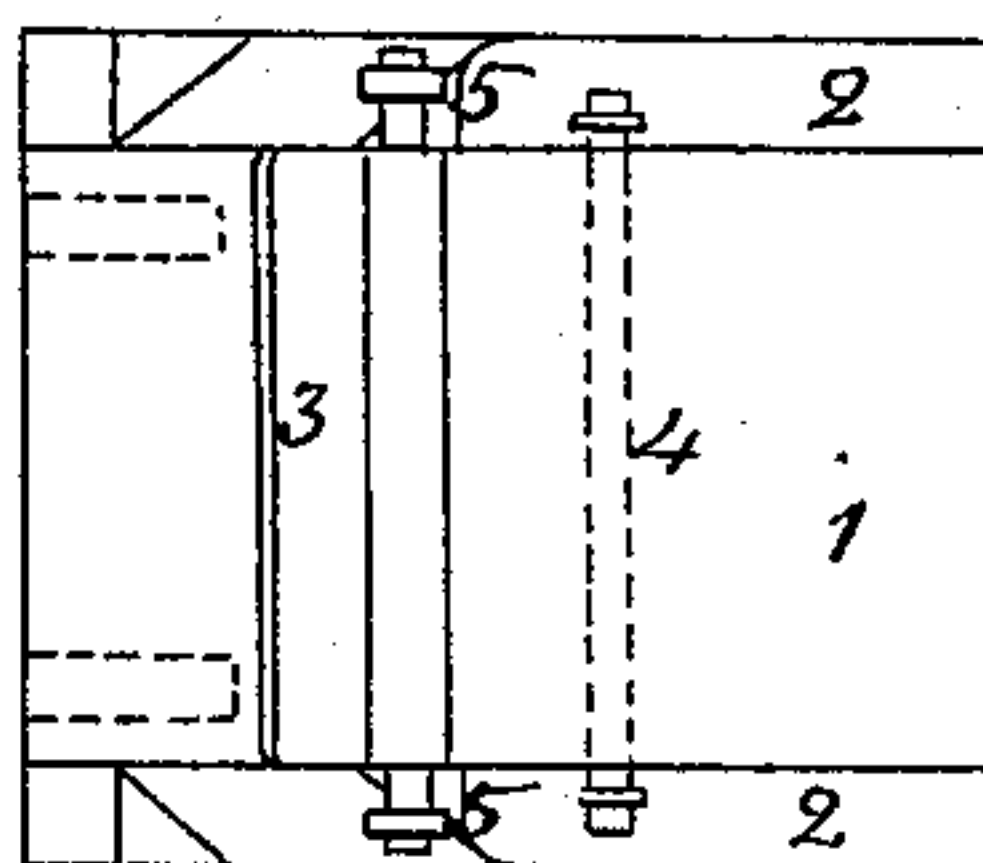


FIG 8



Witnesses:

Witnesses:
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Thompson

Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

ANTON WALDEMAR DARRE, OF COPENHAGEN, DENMARK, ASSIGNOR TO
CARL MORTENSEN, OF SAME PLACE.

MACHINE FOR CUTTING CARDBOARD OBLIQUELY.

SPECIFICATION forming part of Letters Patent No. 589,075, dated August 31, 1897.

Application filed April 15, 1895. Serial No. 545,812. (No model.)

To all whom it may concern:

Be it known that I, ANTON WALDEMAR DARRE, a subject of the King of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Machines for Cutting Cardboard Obliquely; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Heretofore it has been usual to cut the edges of cardboard on the slant by hand, the operator either scraping the edges of the cardboard with a scraping-steel or grinding them off with an emery-wheel. As this operation is not only difficult, inexact, and tedious, but also unhealthy, and consequently costly, it will be of considerable advantage if it can be effected by the aid of machinery. The present invention embraces a machine for this purpose, this being so constructed that the cardboards, fixed in a press, are brought successively against a knife reciprocating at right angles to the direction in which the press travels and which, during its forward movement, cuts the edges of the cardboards on the slant and returns out of contact therewith.

In the annexed drawings, Figure 1 is a plan, Fig. 2 a side sectional elevation, and Fig. 3 an end sectional elevation, of a complete machine; Fig. 4, a vertical section of the knife-holder; Figs. 5 and 6, a perspective view and side elevation, respectively, of the knocking-on-end box; Figs. 7 and 8, a perspective view and side elevation, respectively, of the card-press; and Fig. 9, a front elevation of the knife-holder.

The machine consists of two cheeks n , on which slides a carriage m , having means by which the clamp can be fastened. Extending across the cheeks at one end are the slides b' , in which slides the knife-holder. Said knife-holder is connected to the eccentric disk a by a rod c , so that it is reciprocated when the disk is revolved.

The knife-holder b , Figs. 1, 3, 4, and 9, consists of a block b'' , moving in the slide b' , and to which is secured the sliding piece b^3 in such a manner that it may be raised or lowered relatively to the block b'' by means of the regulating-screw j , which engages with a nut in the sliding piece. A disk e is pivoted

to the sliding piece b^3 by means of two trunnions g' , Fig. 9, near its lower end. Through this disk e passes a cylindrical bolt or piece g'' , held in position by means of nut g^4 and disk g^3 on the rear of the disk e . This cylindrical bolt g'' forms pivot for a second disk e' , which is fitted over the disk e and in its upper end provided with an additional piece i . The bolt g^2 has a vertical recess g^5 for the knife d , which is held in this recess against the front surface of the disk e' by means of a screw g . The position of the disk e , and consequently of the parts attached to it, in relation to the front surface of the sliding piece can be varied by means of a screw f in such a manner that the knife can be placed in a more or less slanting position.

As above mentioned, the knife-holder b'' reciprocates in the slide b' . At the end of the forward movement the foremost hook of the movable plate K , which is mounted on the top of the sliding piece b^3 , strikes against a projection l , fixed on the machine-frame, so that said plate is driven back. This movement turns the small lever or pin h , one end of which extends into a recess in the plate K and which is pivoted in h'' , so causing the hook h' , which is connected with the lever h , to engage with a recess in the piece i on the disk e' and revolve the latter, thereby raising the knife-edge, which consequently, during the return stroke, is then held free of the cardboards. By this means the jamming of the cuttings between the knife and the cardboards is prevented. The other end of the piece i is connected to a spring d' , which normally holds the piece against the adjusting-screw d^2 . The friction between the plate K and the sliding piece b^3 is, however, so great that the spring cannot move back the disk e' when it is turned backward by the lever h .

In the backward movement of the knife-holder the hindmost edge of the plate K pushes against another projection l' , which moves the plate K forward again, causing the lever h to cease from drawing in the projection i , and then the spring d' brings the disk e' and the knife d into position for cutting.

The sliding carriage m , sliding upon the cheeks n , is worked in the following manner: The machine is worked by means of belt and pulleys or by a hand-wheel fixed at the end of the axis o . On the axis o is fixed a collar

or box p , provided with a cam p' , which bears against a roller o^2 on the upper end of a rod q' . This rod has also in its upper end an elongated hole for the shaft and is held against the end of the box by means of a collar o' , fixed to the shaft o . The lower end of the rod q' is hinged to a lever q , pivoted on the shaft of the wheel s . When the shaft o is rotated, the cam p' will reciprocate the rod q' , and thereby oscillate the lever q , so that the pawl r on the lever, acting upon the toothed wheel s , turns this wheel around, while at the same time another toothed wheel s' , placed on the same axis as s , engages with a toothed bar on the upper edge of the sliding bar. In order to prevent the sliding bar from suddenly backing from some cause or other, another pawl r' is provided, which by engaging with the wheel s stops any retrograde movement.

If it is required to bring the sliding bar back again after its forward movement, this is done in the following manner: By turning the hand-lever t the escape-lever u is set in motion and the two pawls r and r' are disengaged from the wheel s by means of the pins x and x' , fixed to the lever u . The escape-lever u is an angular lever fixed in one end to the axis of the hand-lever t and near its other end pivoted on the axis of the wheel s . The hand-wheel t is then turned, and the toothed wheel u' , Fig. 3, engaging with the rack placed on the lower side of the sliding carriage, is put in motion and the sliding carriage drawn back.

The clamp placed between the sides of the sliding carriage, (see Figs. 1 and 2,) in which the card-press, Figs. 7 and 8, is placed during the cutting operation, consists of a plate v , which at the top can turn in the sliding carriage m upon two pivots v^5 , Fig. 1, and leaves a margin for the hook of the press. Besides this it is provided on the under part with two upright arms v' , between which is placed a bolt v^2 , to which is pivoted the frame w and around which it can turn. At the upper part of the frame w are fixed two bolts w' , one on each side. These pass through two holes at the back of the plate v and are here united with a cross-bar w'' , in which is the boss for the hand-screw x , which acts against the plate v . By means of this hand-screw x the distance between the plate v and the frame w can be regulated.

Behind the plate v there is a second frame z , turning on a pin z' , carried by the carriage m , (see Fig. 2,) which is at its under part provided with two knobs z'' , resting against the plate v . This frame has at its top the boss for the screw y , which likewise acts against the plate v , which by turning the screw y can be raised or lowered, thereby raising or lowering the frame w .

The cardboard-press in cutting works upon the projecting edge of the plate v , Figs. 7 and 8, and it is firmly screwed between the frame w and the plate v by the hand-screw x . Then careful examination must be made as to

whether the cutting-surface lies exactly horizontal, and this is done by moving the frame m' , which moves between a pair of brackets m'' , fitted above the carriage m . Over these brackets, if necessary, the frame, together with the press, may be raised or lowered somewhat by turning the screw y , and then the cutting may proceed.

The cardboard-press shown in Fig. 7 in side elevation and in Fig. 8 in plan, in which the cardboards are put during the cutting, consists of a bottom 1, two side pieces 2, slanting toward the front, and a plate 3 put on the top between these, which can turn upon a pin 4, pivoted in the side pieces, and which plate is fastened by two bolts 5, which pass through holes in the side pieces. By turning the nuts of these bolts, for which nuts there are cavities in the bottom of the side pieces, the plate 3 is turned downward, so that the cardboards placed between this plate and the bottom are pressed firmly together. There are at the bottom two hooks 6, by means of which the press fastens onto the salient edge of the plate v .

In order that the cutting may be effected carefully, it is of importance that the front edges of all the cardboards should lie evenly and level. In order to attain this, a leveling-box is used, (shown in Fig. 5 in side elevation and Fig. 6 in plan,) consisting of a bottom 7, upon which are put guide-pieces 8 in a slanting position, and a side piece 9. Into this box is placed the cardboard-presses shown in the drawings, there being in the bottom and side piece of the box the necessary places cut out for the projecting portions. The front edge of the cardboards is pressed firmly against the slanting pieces and then screwed down by the bolts 5.

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

1. In machines for beveling the edges of cardboards a reciprocating vertically-adjustable knife-holder in which the knife is fixed, consisting of the slide b^3 , a revolving disk e' with the top piece i , an adjustable disk e , lever h with the hook h' engaging with the piece i and the sliding plate k in combination with projections l and l' on the machine-frame, substantially as set forth.

2. In machines for beveling the edges of cardboards the combination of a sliding carriage consisting of the plate v , arms v' , bolt v'' , frame w , bolts w' passing through the plate v and united with a cross-bar w'' , having nut for the hand-screw x , another frame z turning on the pivot z' , knobs z'' , and screw y , by means of which clamp card-presses of various sizes can be inserted in the cutting-machine; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANTON WALDEMAR DARRÉ.

Witnesses:

CHR. LARSEN,
KRISTIAN NIELSEN.