

# J. Hatch. Paper Cutting Mach.

N<sup>o</sup> 48395.

Patented Jun. 27. 1865.

Fig. 1.

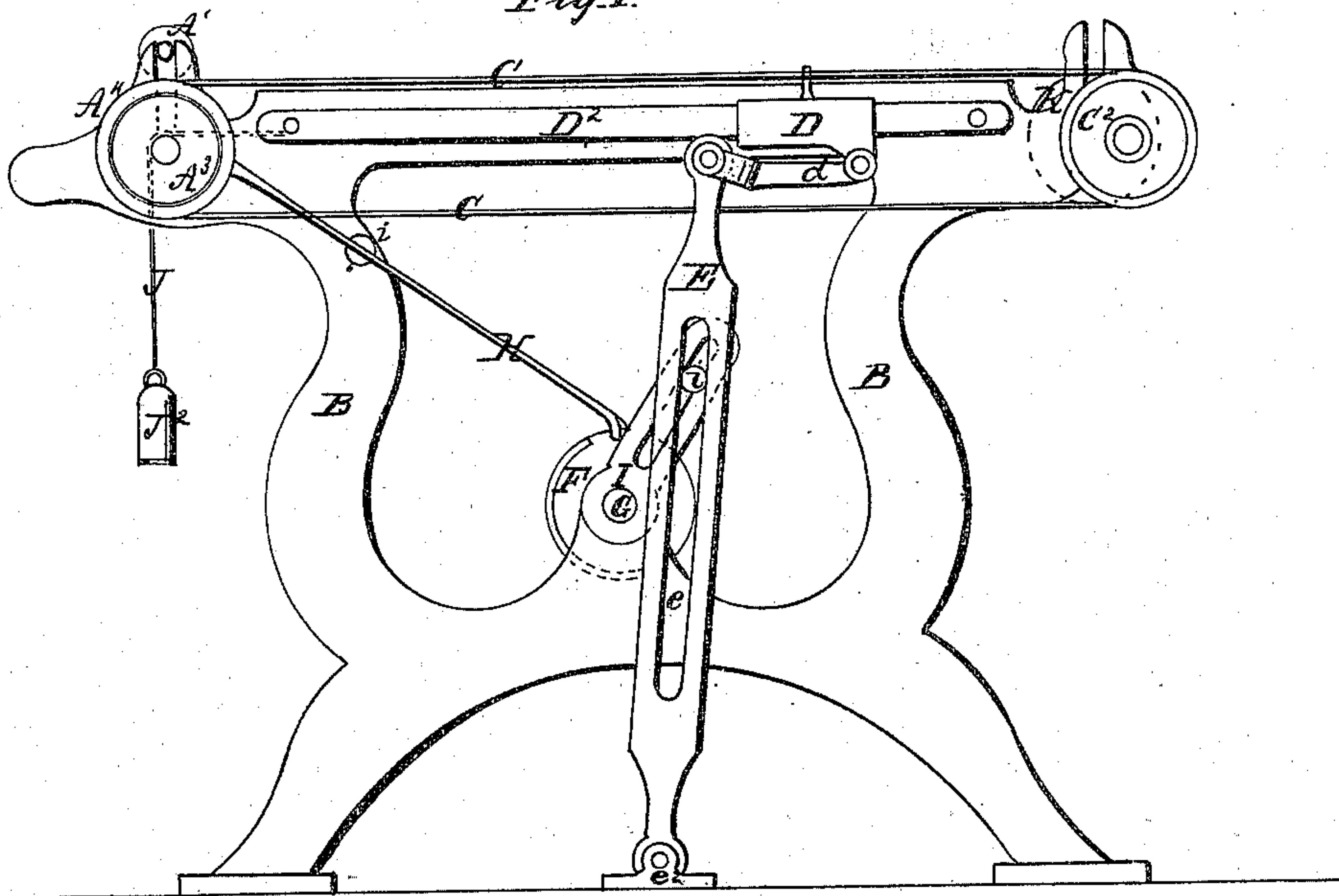
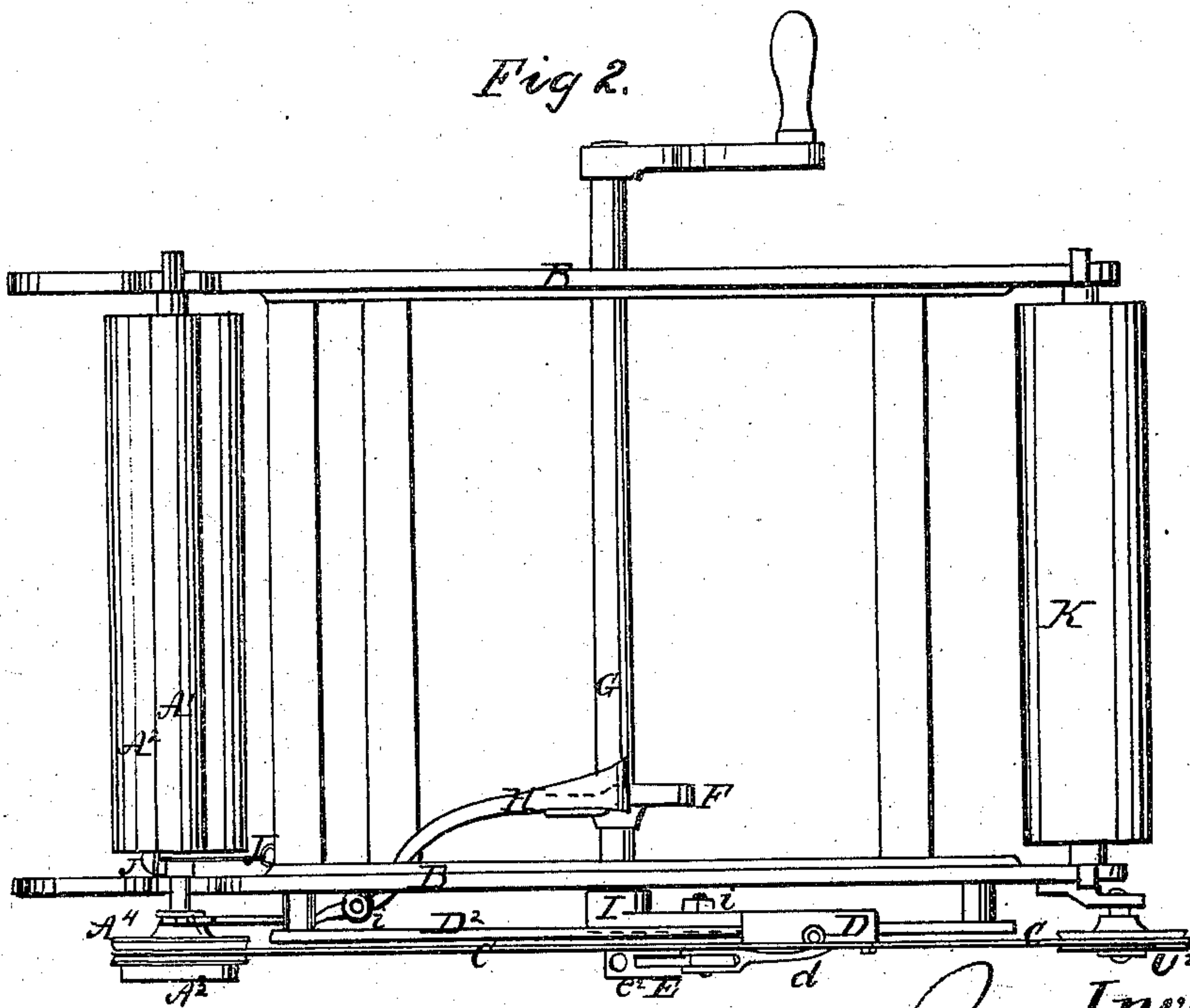


Fig 2.



Witnesses

J. W. Coombs  
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Inventor

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR CUTTING PAPER INTO SHEETS.

Specification forming part of Letters Patent No. 48,395, dated June 27, 1865.

*To all whom it may concern:*

Be it known that I, JONATHAN HATCH, of South Windham, in the county of Windham and State of Connecticut, have invented a new and useful Improvement in Machines for Cutting Paper into Sheets; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figures 1 is a side elevation of the feeding apparatus and other parts of a paper-cutting machine with my improvement. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to a mode of producing the intermittent movements of the feed-rolls by which the roll of paper is fed to the cutting-knife between the successive movements of the latter. Its objects are to produce the starting of the said rolls gradually and without the twitching movement usual when other feed-operating mechanisms are employed, and also to stop them gradually, and to provide for a more exact variation of the length of feed and size of the sheet than can be done by gearing. I obtain the feeding movement by means of an endless reciprocating band running on a pulley on the shaft of the lower feed-roll; and my invention consists in certain means of giving the said band the necessary intermittent movement, and of coupling and uncoupling the aforesaid pulley with and from a friction-clutch on the shaft of the lower roll.

To enable others skilled in the art to make and apply my invention, I will proceed to describe it with reference to the drawings.

The feed-rolls  $A'$   $A^2$  are arranged at one end of the frame B of the paper-cutting machine, the shaft of the lower one,  $A^2$ , being in fixed bearings, and that of the upper one,  $A'$ , being arranged in vertical guides, which permit it to move up and down and accommodate the latter roll to the thickness of the paper upon which it bears.

C is the driving-band, running on the loose pulley  $A^4$  on the shaft of the lower feed-roll, and upon a loose pulley,  $C^2$ , fitted to a stud at the opposite end of the machine. This band is connected with a slide,  $D^2$ , which slides upon a fixed guide-bar, D, secured to one side of the framing. This slide is connected by a rod,

d, to the upper end of a longitudinally-slotted lever, E, which moves upon a fulcrum-pin,  $e^2$ , at its lower extremity.

Upon the shaft of the roller  $A^2$ , close to one end, is the friction clutch  $A^3$ , with which the pulley  $A^4$  is thrown in gear at the commencement of each forward motion of the bar E, and from which it is thrown out of gear as the bar E commences to move back by means of a forked lever, H, working upon a fixed fulcrum, v, and a cam, F, on the constantly-revolving shaft G. The movements of the lever E are produced by a crank, I, on the shaft G, the wrist of which works in the slot E. This crank I also has a longitudinal slot, in which the wrist  $i'$  is adjustable, to vary the length of stroke of the lever E for the purpose of varying the length of movement of the band produced by the forward movements of the said slide, thus enabling the same machine to cut sheets of different lengths. Any receding motion of the rollers  $A$   $A^2$  which might be produced by the friction of the pulley  $A^4$  as the band C is moved back by the slide D is prevented by a friction-band, J, and weight  $J^2$  bearing upon the said roller-shaft and producing enough friction to hold the rollers to the position in which they stopped at the end of the previous forward stroke of the rod E and until the beginning of the following stroke. This band J is secured to any convenient portion of the frame-work and passes over the shaft of the lower leading-roller,  $A^2$ . At the opposite end of the frame from the rollers  $A'$  and  $A^2$  is situated, parallel to them, a third roller, K, for the purpose of conducting from a reel the roll or web of paper to be cut into sheets.

The cutter may be of the usual kind and arranged in the usual position near the feed-rolls, and I have therefore not thought it necessary to represent it.

What I claim as my invention, and desire to secure by Letters Patent, is—

The crank I, slotted lever E, slide D, band C, clutch  $A^3$ , pulley  $A^4$ , lever H, and cam F, in combination with each other and with the feed-rolls of a paper-cutting machine, substantially as and for the purpose herein specified.

JONATHAN HATCH.

Witnesses:

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L. C. KIMO.