

No. 632,434.

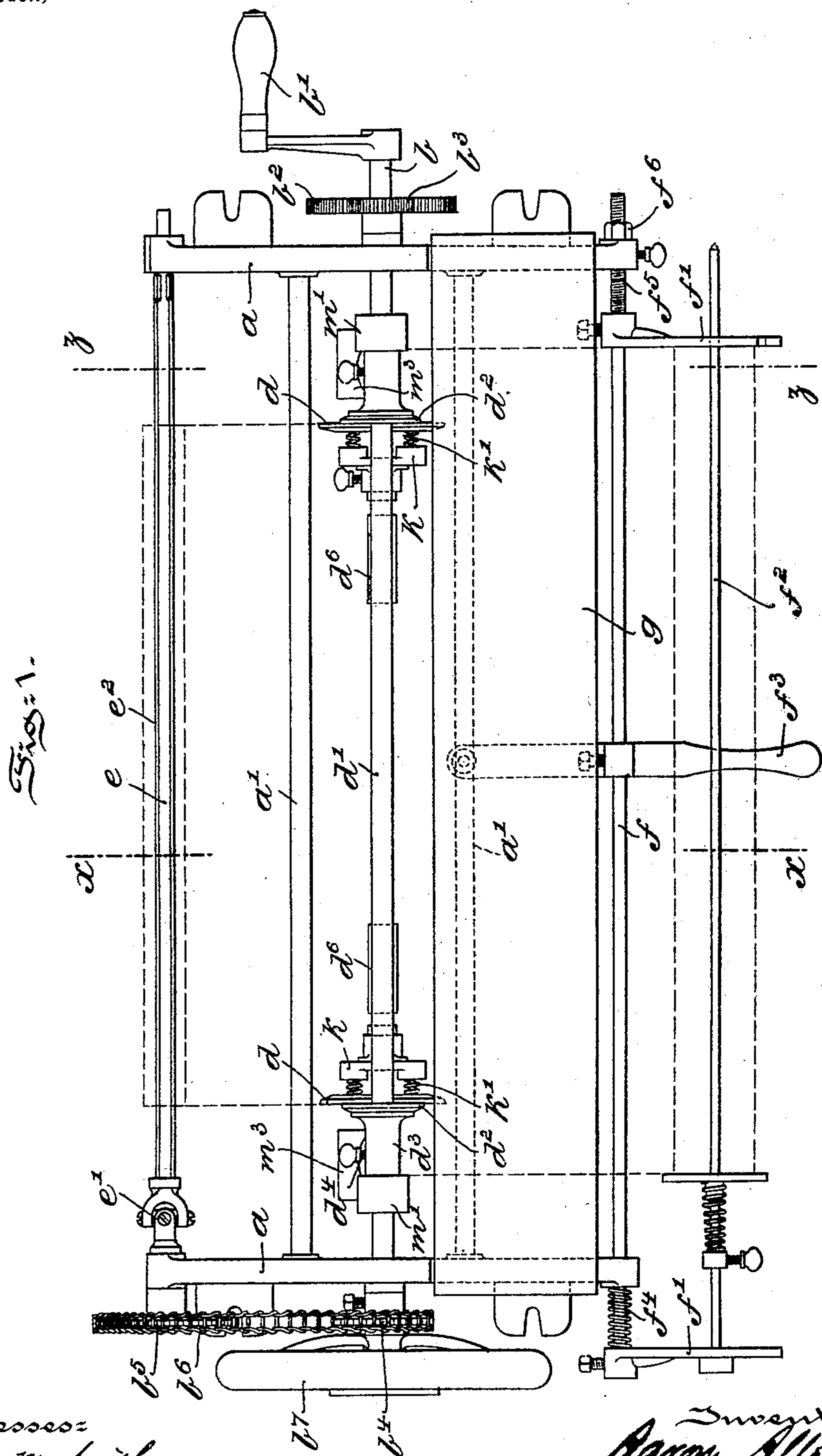
Patented Sept. 5, 1899.

A. ALLEN.  
MACHINE FOR TRIMMING PAPER.

(Application filed Mar. 15, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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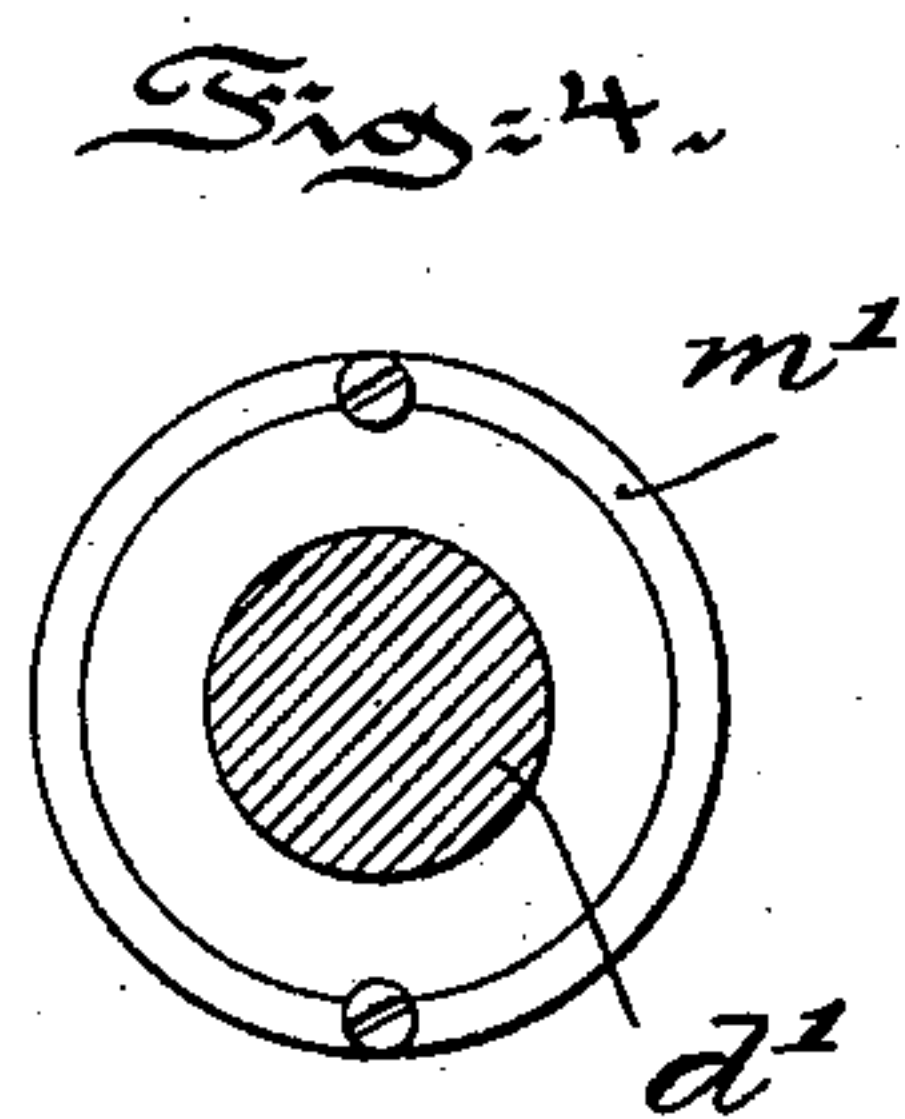
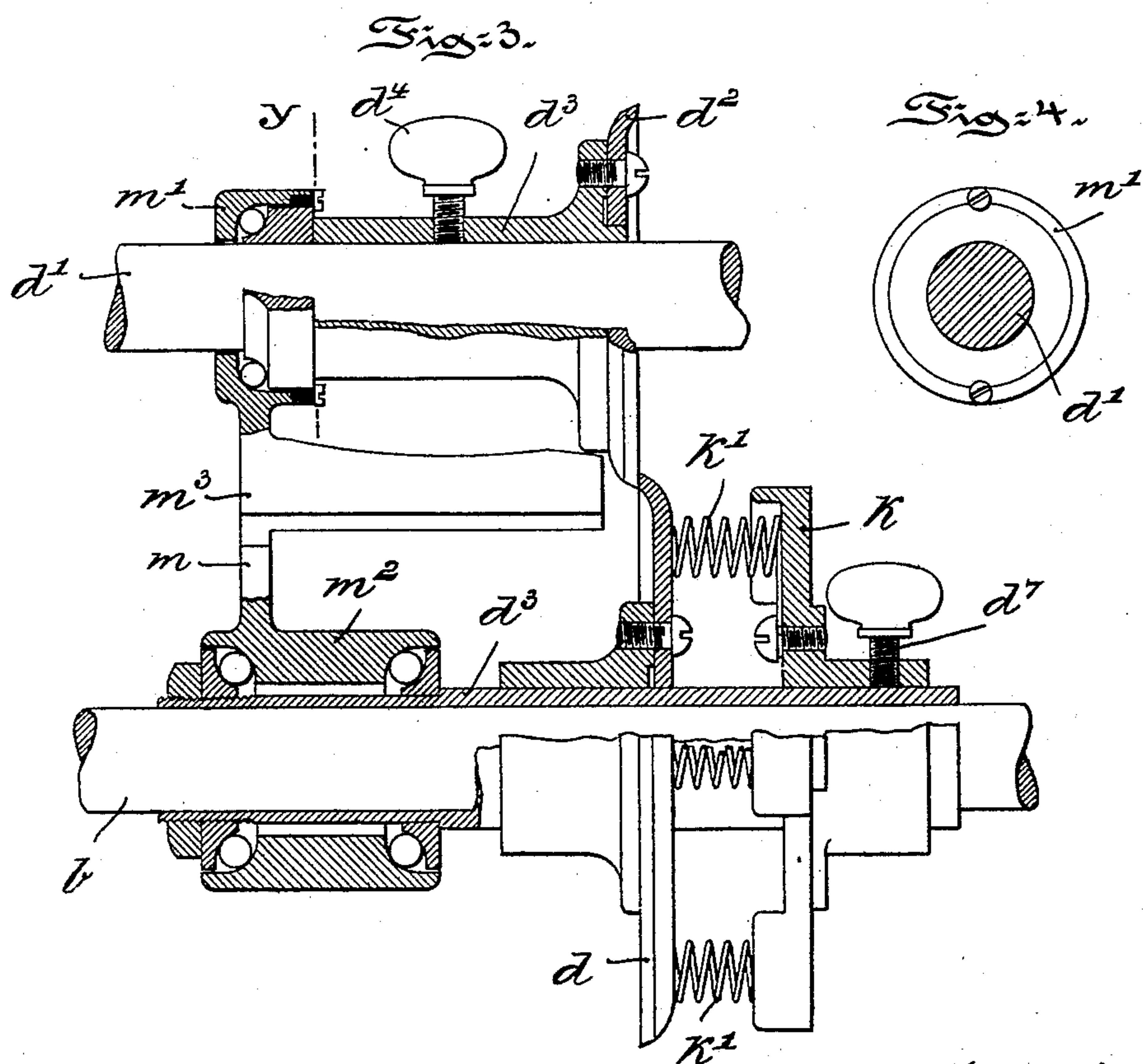
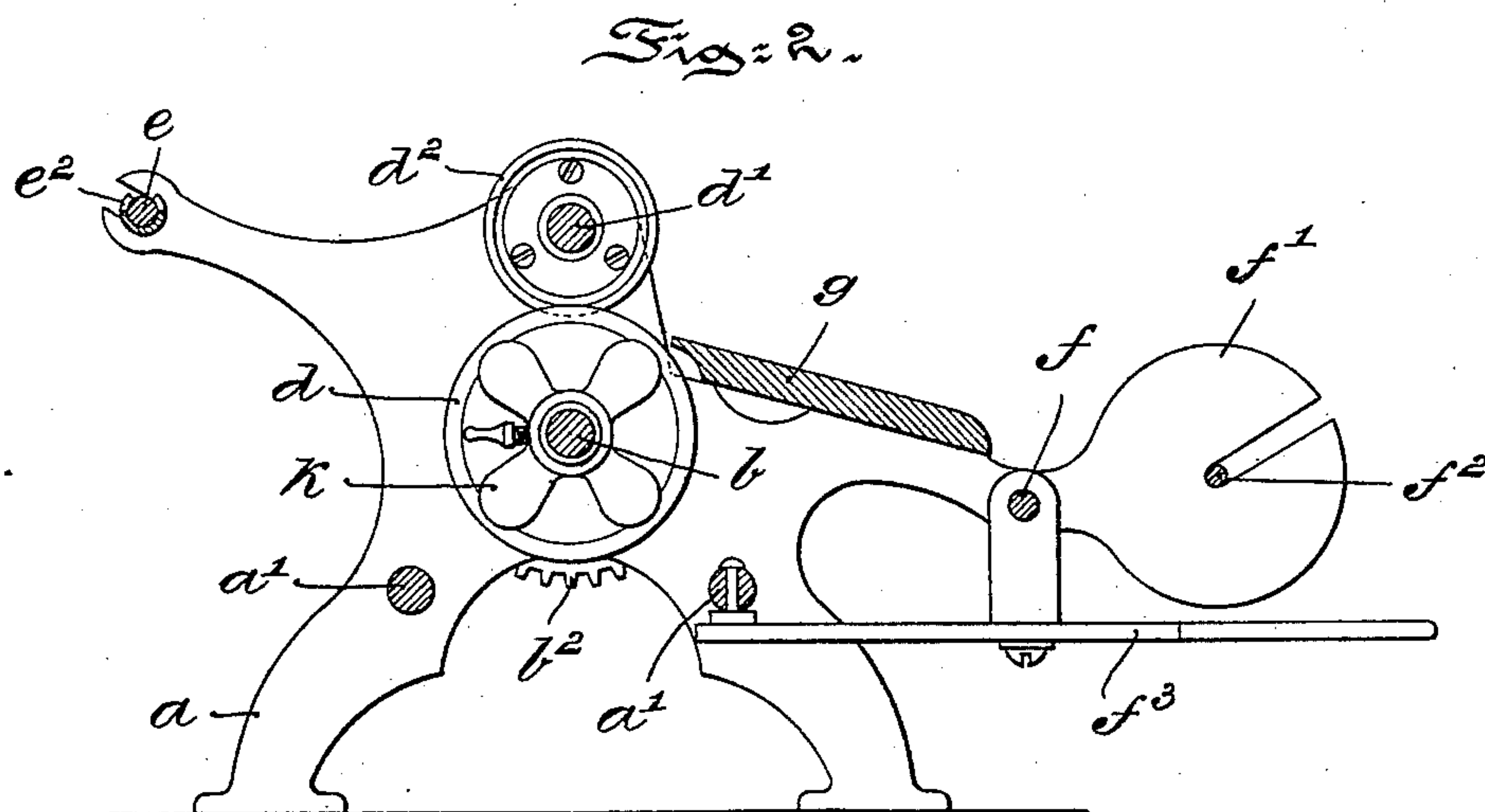
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3 Sheets—Sheet 2.



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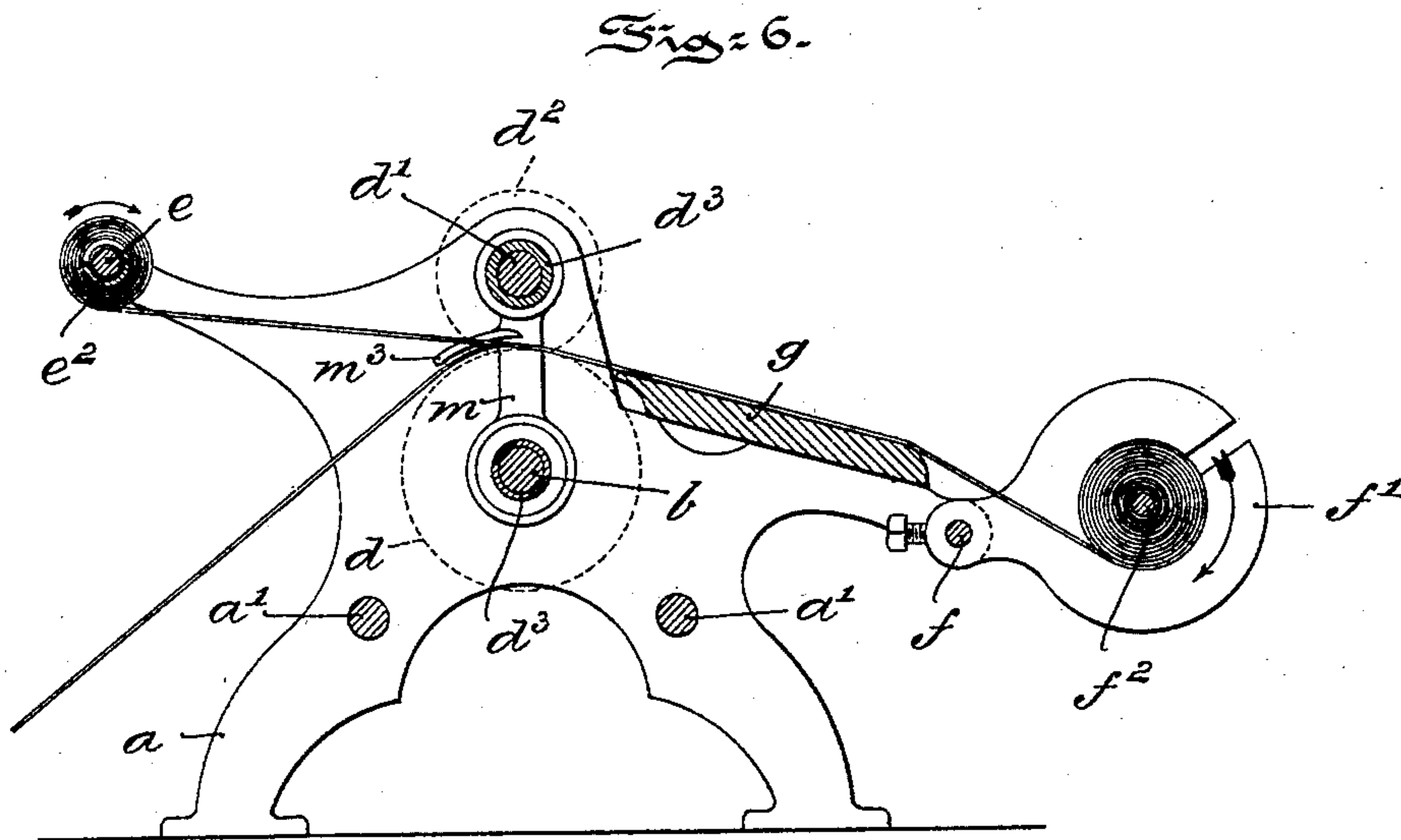
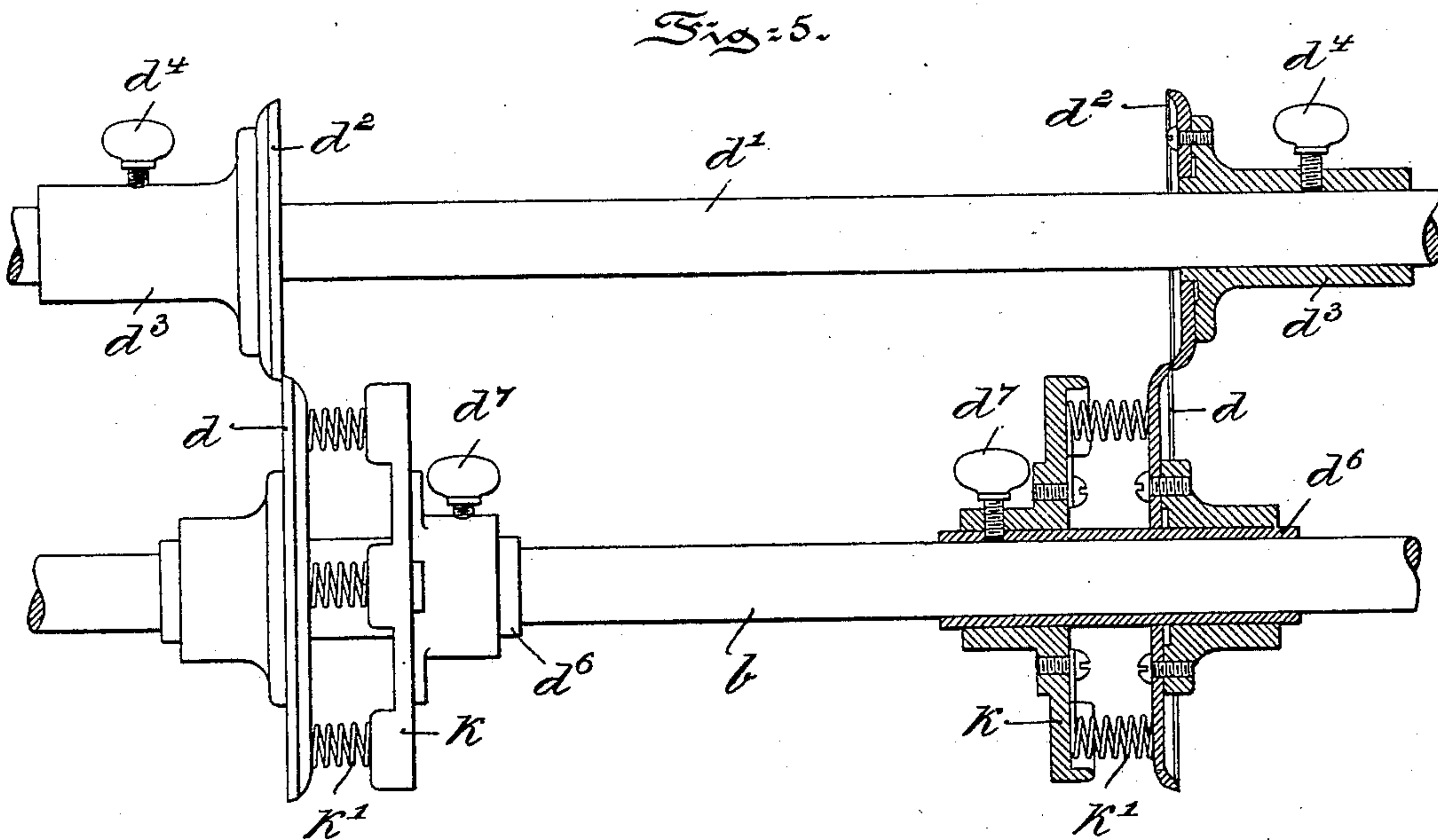
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

AARON ALLEN, OF PHILADELPHIA, PENNSYLVANIA.

## MACHINE FOR TRIMMING PAPER.

SPECIFICATION forming part of Letters Patent No. 632,434, dated September 5, 1899.

Application filed March 15, 1899. Serial No. 709,126. (No model.)

*To all whom it may concern:*

Be it known that I, AARON ALLEN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Cutting Borders and Trimming Wall-Paper, &c., of which the following is a specification.

My invention has relation to a machine for cutting borders and trimming the edges of wall and other paper, and in such connection it relates to the construction and arrangement of the elements or parts constituting such a machine for the said purposes.

The principal objects of my invention are, first, to provide, in a machine for cutting borders and trimming wall-paper and the like, two parallel shafts, on which are mounted the sleeves bearing the complemental cutting-blades, a yoke connecting said sleeves and their respective complemental cutting-blades, the lower blade being arranged to slide freely and longitudinally upon its sleeve, a spring-cushion device mounted upon said lower sleeve and adapted to hold the cutting edge of the lower cutting-blade against the cutting edge of the upper cutting-blade, and a set-screw or similar device for adjusting the required degree of pressure of one blade against the other blade, and, second, to provide in such a machine, in conjunction with mechanism carrying the roll of paper to be trimmed, means for shifting such mechanism longitudinally with respect to the cutters and means for locking such mechanism in its shifted position.

My invention, stated in general terms, consists of a machine for cutting borders and trimming wall-paper and the like, constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of the machine, embodying main features of my invention. Fig. 2 is a cross-sectional view, slightly enlarged, on the line  $x x$  of Fig. 1. Fig. 3 is an enlarged detail view, partly in

longitudinal section, of the cutting-blades and auxiliary mechanism. Fig. 4 is a transverse sectional view on the line  $y y$  of Fig. 3. Fig. 5 is a detail view, partly in front elevation and partly in section, showing the respective cutting-blades separated from the sleeves or bearings of the bracket or yoke upon which said blades are detachably mounted; and Fig. 6 is a cross-sectional view on the line  $z z$  of Fig. 1, showing the selvage-clearance device of the bracket or yoke and also showing the trimmed portion of the paper guided in a downward direction by said device.

Referring to the drawings,  $a a$  represent the end frames or standards suitably connected by the longitudinal tie-rods  $a' a'$ . The end frames  $a a$  form the bearings for the driving-shaft  $b$ , upon which one of the cutting-blades  $d$  is mounted, and for the shaft  $d'$ , parallel to the shaft  $b$ , upon which the other cutting-blade  $d^2$  is mounted. The frames  $a a$  also form bearings for the shaft  $e$ , upon which the trimmed paper is wound, and for a longitudinally-movable rod  $f$ , to which are secured the brackets or yokes  $f'$ , supporting the shaft  $f^2$ , upon which the roll of untrimmed paper is supported. The frames  $a a$  also support a table  $g$ , over which the paper travels from the roll supported on the shaft  $f^3$  to the circular cutting-blades  $d$  and  $d^2$ . The shaft  $b$  is operated by a crank  $b'$  or by a power pulley, if desired, and when operated sets in motion by means of the gears  $b^2$  and  $b^3$  the shaft  $d'$ , and by means of the sprockets  $b^4$  and  $b^5$  and a chain  $b^6$  sets in operation the shaft  $e$ , upon which the trimmed paper is wound. The shaft  $d'$  is preferably provided with a fly-wheel  $b^7$ . The shaft  $e$  upon which the trimmed paper is wound has a joint  $e'$ , so that its free end may be lifted out of the side frame  $a$  to take off the wound trimmed paper, and it is also provided with a clip or clamp  $e^2$ , between which and the shaft  $e$  the end edge of the paper is inserted prior to its being wound around the shaft.

So far as described the machine is constructed and arranged in substantially the manner illustrated and described in the Letters Patent No. 473,411 granted to me under date of April 19, 1892. My present inven-



tion relates to certain improvements upon said machine of the character hereinafter explained and claimed.

Referring now to Fig. 3, the circular blades  $d$  and  $d^2$  are complementally arranged with their cutting edges facing each other. Each blade is carried by a sleeve  $d^3$ , one of which (for the upper blade) is adapted to be clamped by a set-screw  $d^4$  or in any other preferred manner to its respective shaft. The lower blade  $d$  is held up to its work by means of a disk  $k$ , from which project springs  $k'$ . This disk  $k$  is provided with a set-screw  $d^7$  for adjusting the tension of the lower blade or adjusting the pressure of the same with respect to its bearing against the upper blade at the cutting edges thereof, thereby insuring good or reliable working at all times of said blades in the operation of the machine by providing means to compensate for any wear of the said blades about their cutting edges. The sleeve of the blade  $d$  is held frictionally in contact with its shaft  $b$ . During the operation of cutting the paper or other material introduced between the blades has a tendency to separate the cutting edges, and the thrust thus created tends to bend or spring the supporting-shafts  $b$  and  $d'$ . To overcome this thrust or strain is one of the features of my present invention. To accomplish this there is located adjacent to the cutting-blades a bracket or yoke  $m$ , having at either end a ball-bearing  $m'$  or  $m^2$  for the sleeves of each blade  $d$  or  $d^2$ . This bracket or yoke thus serves as a brace for the two parallel shafts  $b$  and  $d'$ , and the ball-bearings  $m'$  and  $m^2$  take up the thrust or strain on the cutting-blades. From the yoke or bracket  $m$  projects, preferably, an integral selvage-clearance device  $m^3$  to prevent the severed edge of the wall-paper sheet coming in contact in the operation of the machine with the paper being trimmed and rolled or, in fact, in any manner therewith.

Another important feature of my invention is that the respective cutting-blades  $d$  and  $d^2$  may be readily slipped along their shafts on the sliding bearings or sleeves  $d^3$  and  $d^6$  and secured in required position thereon by means of the set-screws  $d^4$  and  $d^7$ , thereby adapting the machine, as fully illustrated in Fig. 1, to cutting through wall-paper borders, as illustrated in Fig. 5. It being understood that it is common in the making of wall-paper borders to arrange the borders in series in one sheet, and after the selvage and opposite edge of the combined borders have been severed by the operation of the machine in the manner, for example, as illustrated in Fig. 1 of the drawings, the said blades are shifted in the manner illustrated in Fig. 5, so as to cut the border into strips for use. Of course it is to be understood that in the latter instance the yoke or bracket  $m$ , with its end ball-bearings supported by the shafts  $b$  and  $e$ , will be shifted on their shafts  $b$  and  $e$  toward both standards  $a$  of the machine.

The second feature of my present invention relates to the arrangement of the rod  $f$ , which supports the shaft  $f^2$  and flanges  $f'$ , on and between which the untrimmed paper is supported. In the trimming of successive rolls of paper it will be found that the edge to be removed will vary slightly in width from the figure or decorated portion of the roll in different papers. In order to easily adjust the position of the paper roll in relation to the cutters, I provide in my present machine the rod  $f$ , made longitudinally movable in the end frames  $a$ . To this rod is secured a handle  $f^3$ , by means of which the said rod is shifted into suitable position. On one end of the rod  $f$  is coiled a spring  $f^4$ , normally tending to shift the rod in one direction—that is, as illustrated in Fig. 1, from left to right. The opposite end of the rod  $f$  is threaded outside the frame  $a$ , as at  $f^5$ , and provided with a nut  $f^6$ , bearing against the outside of said frame. If the roll-carrying shaft  $f^2$  is to be shifted from right to left, the nut  $f^6$  is loosened on the rod  $f$  until the flanges  $f'$  are in proper position, the spring  $f^4$  in this instance serving to retract and hold the rod  $f$  and the shaft  $f^2$ . If the roll-carrying shaft  $f^2$  is to be shifted from left to right, the nut is made to revolve, thus carrying the rod until the proper position is secured, as the pressure of the reciprocating spring tends to hold the device in the opposite direction.

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

1. In a machine of the character described, two parallel shafts, two complementally-arranged cutting-disks, a sleeve carrying each disk and supported upon the parallel shafts, a bracket interposed between the shafts, a sleeve formed at each end of said bracket and surrounding each shaft, the sleeves of the bracket and the sleeves of the disks being complementally arranged so as to receive roller-bearings for the cutting-disks upon the sleeves of said bracket, substantially as and for the purposes described.

2. In a machine of the character described, two end frames, a rod longitudinally movable in said frames, a spring adapted to shift said rod in one direction, flanges or brackets, and a shaft carried by said brackets and adapted to receive the roll of untrimmed material, and means, substantially as described, adapted to shift and lock the rod in its shifted position, substantially as and for the purposes described.

3. In a machine of the character described, two shafts, a bracket or yoke interposed between said shafts and forming part of movable bearings with said shafts and a selvage-clearance device projecting from said bracket or yoke, substantially as and for the purposes described.

4. In a machine of the character described, two shafts, two cutting-blades mounted on sleeves of said shafts, a bracket or yoke in-



terposed between said shafts and forming part of the ball-bearings of the sleeves of said shafts, one of said blades held under spring tension by a spring-cushion device against the other blade, and means connected with one of said sleeves for shifting said yoke and bracket and therewith said cutting-blades detachably secured to said sleeves, substantially as and for the purposes described.

10 5. In a machine of the character described, two shafts, a bracket or yoke provided with a selvage or edge clearance device, said

bracket or yoke provided with ball-bearings with said shafts, removable sleeves engaging said bracket or yoke and cutting-blades detachably mounted on said sleeves, substantially as and for the purposes described. 15

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

AARON ALLEN.

Witnesses:

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RICHARD C. MAXWELL.