

No. 817,121.

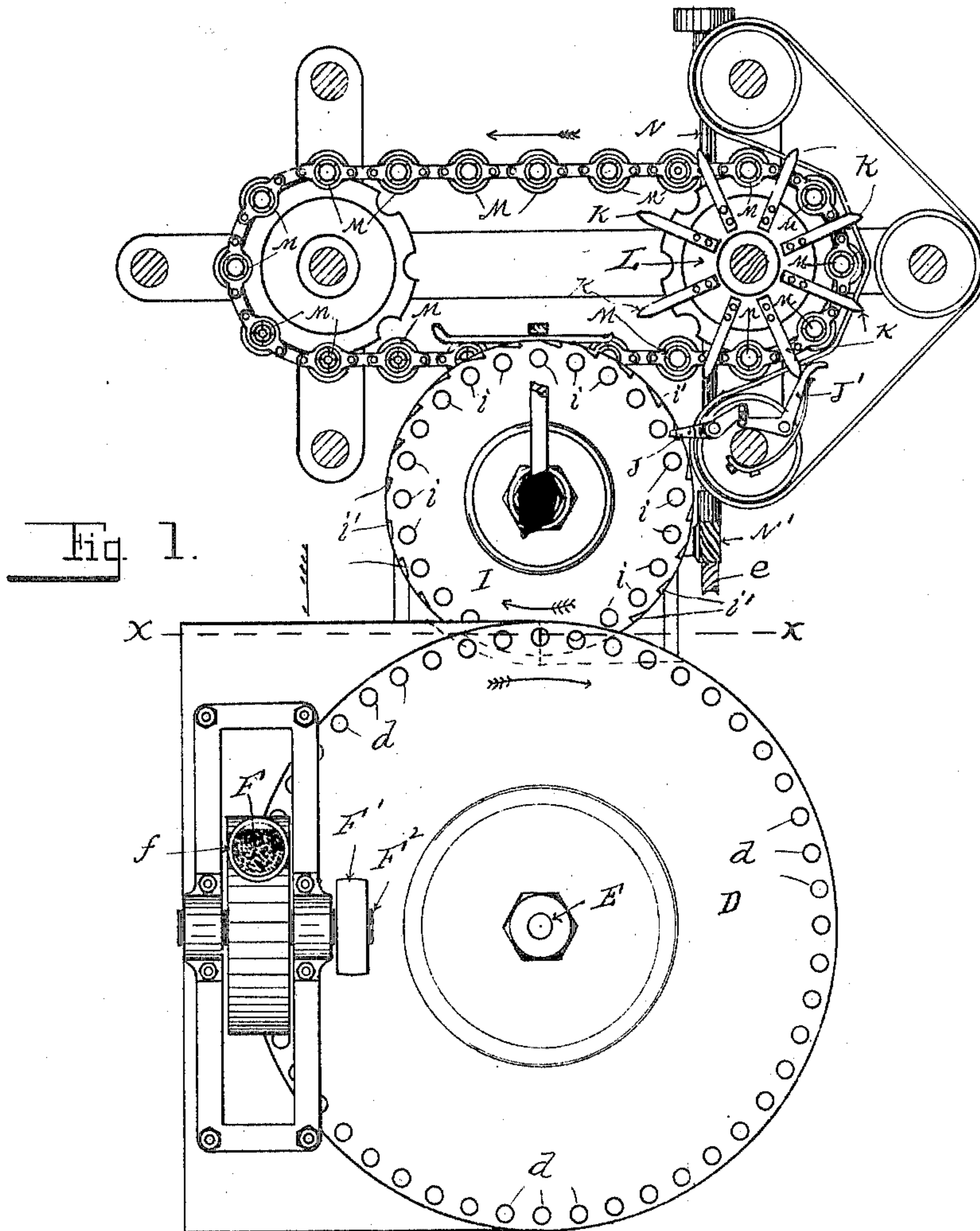
PATENTED APR. 3, 1906.

W. E. KNOTT.

BUTTON BLANK GRINDING AND FEEDING MACHINE.

APPLICATION FILED MAR. 20, 1905.

2 SHEETS- SHEET 1.



Witnesses.
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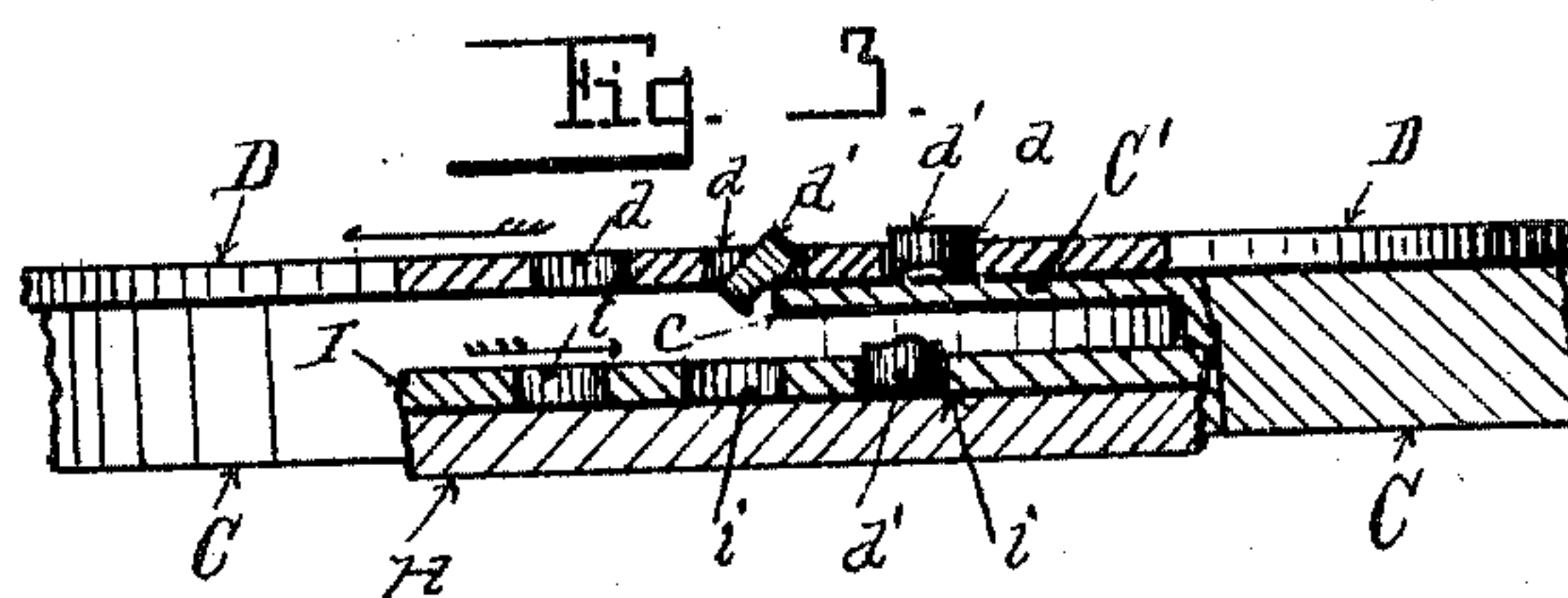
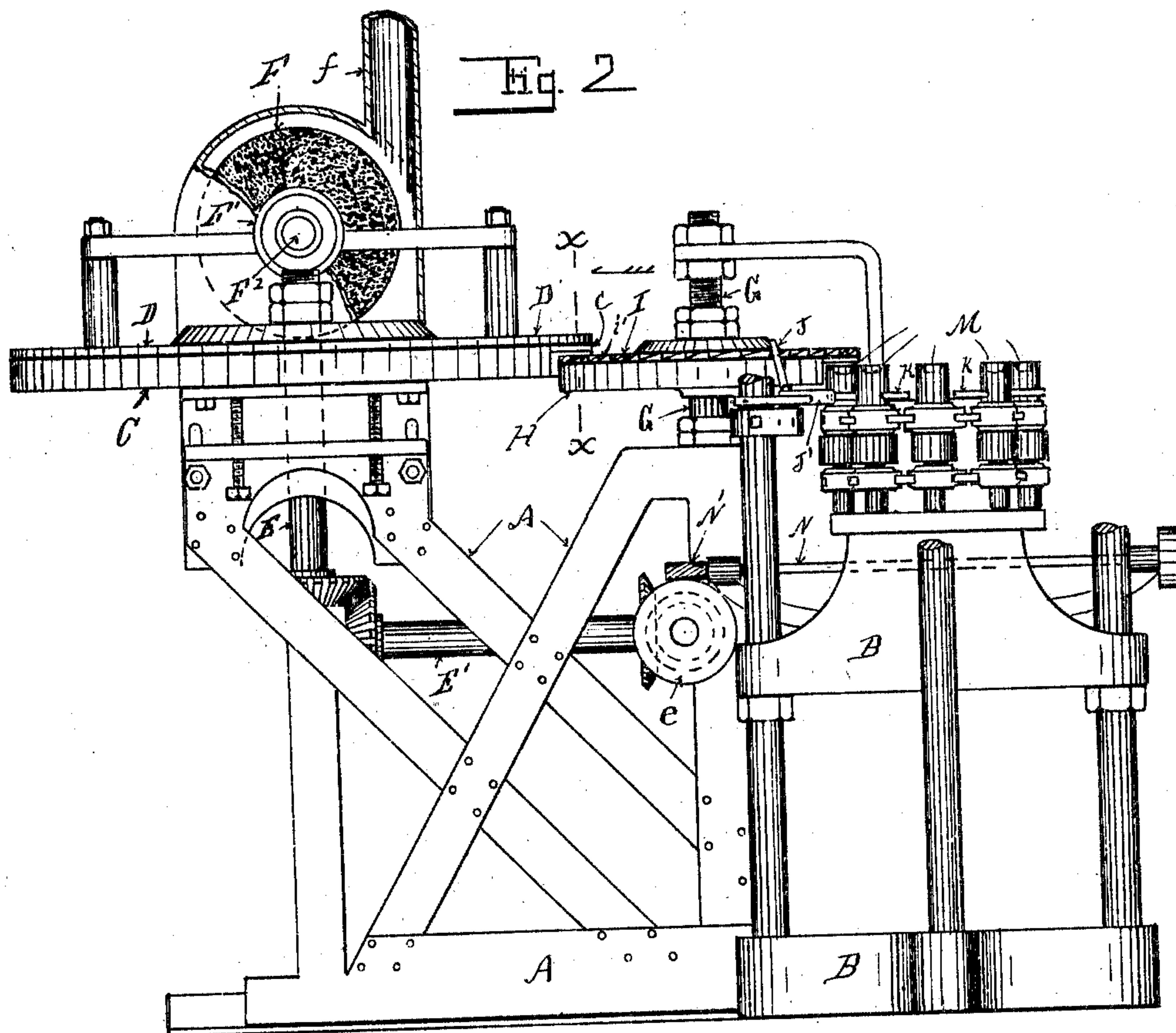
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2 SHEETS—SHEET 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WARREN E. KNOTT, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH
TO CLARA WALKER, OF ERIE, PENNSYLVANIA.

BUTTON-BLANK GRINDING AND FEEDING MACHINE.

No. 817,121.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed March 20, 1905. Serial No. 251,080.

To all whom it may concern:

Be it known that I, WARREN E. KNOTT, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Button - Blank Grinding and Feeding Machines; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

This invention relates to button - blank grinding and feeding machines, and has for its object the production of a mechanism to which button-blanks are fed and thereafter one side of the blank is ground and the blank then automatically turned over and delivered to the chucks of a button-machine associated therewith.

The features of this invention are hereinafter set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of mechanism embodying my invention, together with parts of a button-machine. Fig. 2 is a view in elevation of the same. Fig. 3 is a sectional detail on the line *xx* in Figs. 1 and 2.

In the drawings illustrating my invention, A is the framework of my improved machine, and B a portion of the framework of a button-machine associated therewith, which latter machine, however, forms no part of my invention.

In my improved machine, C is a table adjustably secured to the top of the frame A, so that it can be raised or lowered, as desired. One edge of this table C is cut away, so as to leave a ledge *C'* extending from the upper surface thereof and terminating in a radial shoulder or edge *c*, as and for the purpose hereinafter set forth. On the top of the table C there is mounted a rotating disk D, driven by a vertical shaft E, and above one side of the disk D there is mounted a grinding-wheel F, suitably incased and provided with a suction-pipe *f*. This grinding-wheel F is preferably driven by a belt (not shown) operating on a pulley *F'* on the shaft *F*² thereof.

Around the periphery of the disk D there

is a row of holes *d* of suitable size to receive button-blanks *d'* to be inserted bottom side up therein, and as the disk D is rotated by the shaft E in the direction of the arrow the blanks so inserted are carried under the grinding-wheel F and faced off and carried onward.

Under the edge of the disk D there is a circular table H, adjustably secured on a vertical post G, extending upward from the frame A. Loosely mounted on the post G and rotating on the table H there is a disk I. The edge of the disk I revolves under the ledge *C'* of the table C, preferably in the opposite direction than the disk D revolves, and has around its periphery a row of holes *i* of suitable size to receive button-blanks, and the revolutions of the disks D and I are so timed that the button-blank holes *i* in the disk I are just in front of the edge of the ledge *C'* at the time the button-blanks *d'* in the holes *d* of the disk D tip over the front edge of the ledge *C'*, the continuous forward movement of the disk D operating on the button-blanks *d'* to turn them over, so that they drop into the holes *i* in the disk I the other side up, as illustrated in Fig. 3, this operation being facilitated by the movement of the disk I in the opposite direction from that of the disk D. The periphery of the disk I is also provided with ratchet-teeth *i'*, adapted to be engaged by a dog mechanism J J', which is intermittently actuated by arms K on the part L of a button-machine mechanism associated with my improved machine, which dog mechanism operates to actuate the disk I intermittently in the direction of the arrow, so as to bring the openings *i* therein consecutively under the openings *d* of the continuously-moving disk D, and as each blank *d'* passes off of the edge *c* of the ledge *C'* of the table C the front edge will turn downward and the blank *d'* will turn over the other side up, as illustrated in Fig. 3, and fall into the openings *i* in the disk I. The disk I in its intermittent travel then carries the blank around over the table H and over the upper ends of the traveling chucks M of the associated button-machine and delivers one blank to each chuck M, with the side thereof up which it is desired to finish. These two machines are adapted to be connected so as to operate in unison in any suitable manner; but I have

connected them by means of a shaft N, which is placed in the associated button-machine and is driven thereby and intermeshes a worm-gear N' with a gear e, connected with the shaft E', driving the vertical shaft E.

From the foregoing description it will be seen that button-blanks placed in the holes d of the disk D are automatically carried under the grinding-wheel F, faced off thereby, and then carried onward and turned over and automatically delivered the other side up into the holes i of the disk I, which disk I carries them onward and automatically delivers them consecutively to the traveling chucks M of an associated button-machine.

I have herein described a convenient mechanism for automatically turning over button-blanks during the process of feeding them to a button-finishing machine. I do not, however, limit myself to the exact mechanism herein shown and described therefor, as many modifications of said mechanism can readily be made by those skilled in the art to which my invention appertains without departing from the spirit of my invention.

Having thus described my invention, so as to enable others to construct and utilize the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a button-blank-feeding machine, of mechanism for finishing the backs of button-blanks, mechanism for moving button-blanks to and past said finishing mechanism, receiving and delivering mechanism adapted to receive and deliver button-blanks into the open chucks of an associate button-finishing machine with their finished backs down, and actuating mechanism adapted to operate the said mechanisms synchronically with each other and with the chucks of an associate button-finishing machine, substantially as set forth.

2. In a button grinding and feeding machine, a horizontal table a ledge at one side thereof, a horizontal disk revoluble on the top of said table having button-blank openings therethrough operating to move button-blanks over the edge of said ledge whereby they are turned over, and mechanism below the ledge to receive the turned-over button-blanks and move them into chucks of an associate button-finishing machine, substantially as set forth.

3. In a button-blank grinding and feeding machine, a horizontal table, a horizontal disk revolving thereon having button-blank openings therethrough, a second horizontal table extending under the edge of the first-named table, a horizontal disk having button-blank openings therethrough revolving thereon with one edge thereof extending un-

der the edge of the disk revolving upon the first-named table, substantially as set forth.

4. In a button-blank-feeding machine, a horizontal table, a ledge at one edge thereof, a horizontal disk revoluble on the top of said table having button-blank openings therethrough and operating to move button-blanks over the edge of said ledge whereby they are turned over, mechanism below the ledge to receive the turned-over button-blanks and carry them to the chucks of a button-machine, substantially as set forth.

5. In a button-blank grinding and feeding machine, a horizontal table, a horizontal disk rotatable on said table having button-blank openings therethrough, a grinding mechanism operating over the upper surface of said rotatable disk and upon the upper surfaces of button-blanks placed in the openings therein as they pass under the grinding mechanism, a ledge at one edge of the table over the edge of which the button-blanks are carried by said disk after being faced off on their upper surfaces, and whereby the button-blanks are turned over as they pass off of the edge of the ledge, and mechanism to receive the turned-over button-blanks and deliver them to chucks of a button-machine, and mechanism adapted to operate said mechanisms in synchronism with each other and with the chucks of an associate button-finishing machine, substantially as set forth.

6. In a button-blank grinding and feeding machine, a horizontal table, a ledge at one edge thereof, a horizontal disk revolving thereon having button-blank openings therethrough means for vertically adjusting said table and disk, a grinding-wheel operating over one side of and adjacent to the upper surface of said disk, means for continuously rotating said disk, a second horizontal table one edge of which extends under one edge of the first-named table, a horizontal disk having button-blank openings therethrough intermittently revolving thereon in the same direction as the first-named disk and extending under the edge thereof so that the button-blank openings in both disks will coincide at one point, and mechanism for intermittently operating said second-named disk synchronically with the first-named disk, substantially as set forth.

7. In a button-blank grinding and feeding machine, a horizontal table cut away at one side so as to leave a ledge projecting from the upper surface thereof, a horizontal disk revolving thereon and extending over the part of the table cut away and having button-blank openings around the same near the edge thereof, mechanism for continuously revolving said disk, a second horizontal table, one edge of which extends under the ledge on

the first-named table, a horizontal disk having button-blank openings therethrough intermittently revolving thereon in the same direction as the first-named disk and extending under the ledge on the first-named table so that the holes in the two disks will coincide at that point, and means for intermittently rotating said second-named disk synchronic-

ally with the first-named disk, substantially as set forth.

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

WARREN E. KNOTT.

Witnesses:

H. M. STURGEON,
G. J. SNEAD.