No. 817,122. PATENTED APR. 3, 1906.

W. E. KNOTT.

BUTTON BLANK GRINDING AND FEEDING MACHINE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

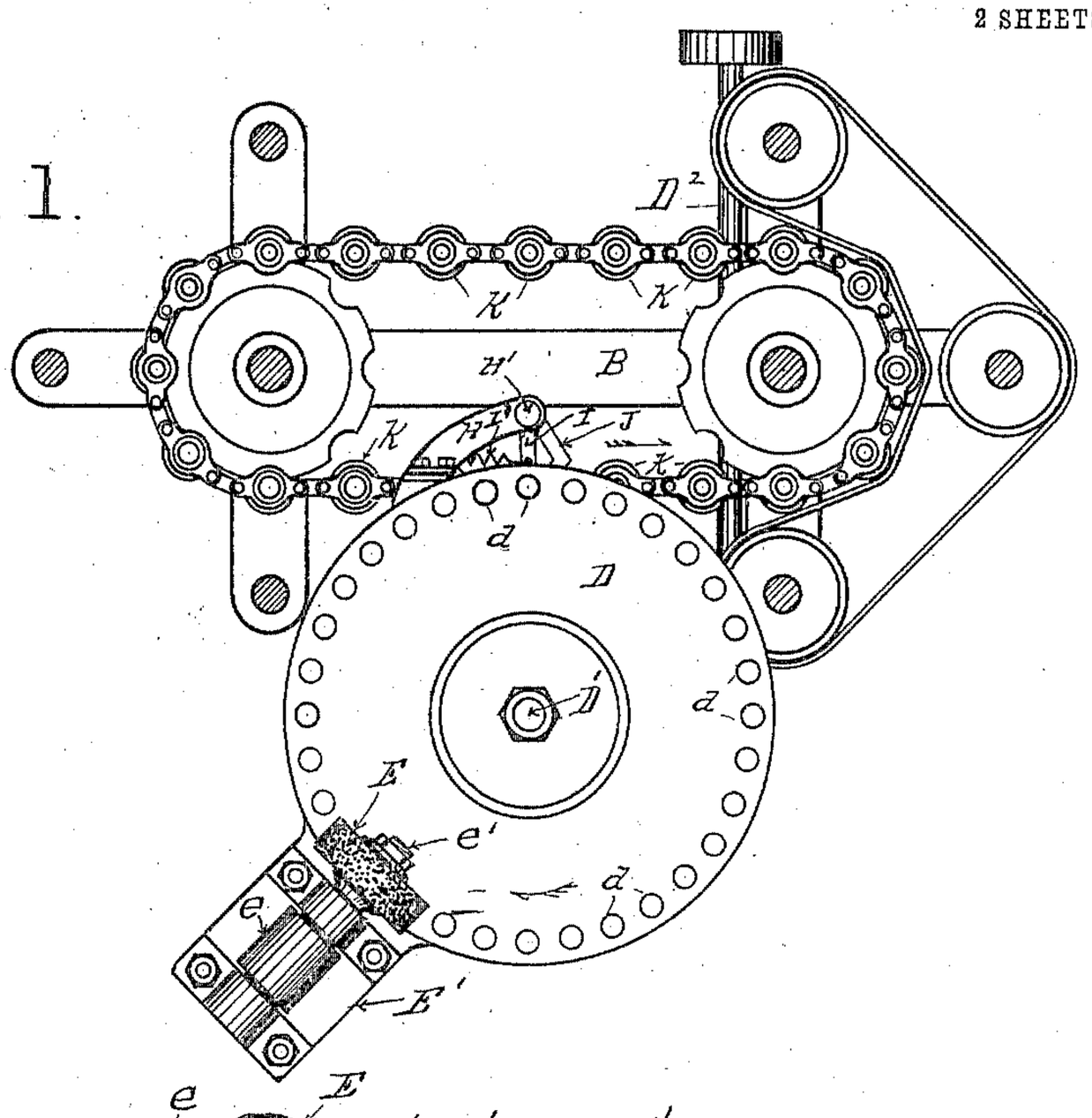
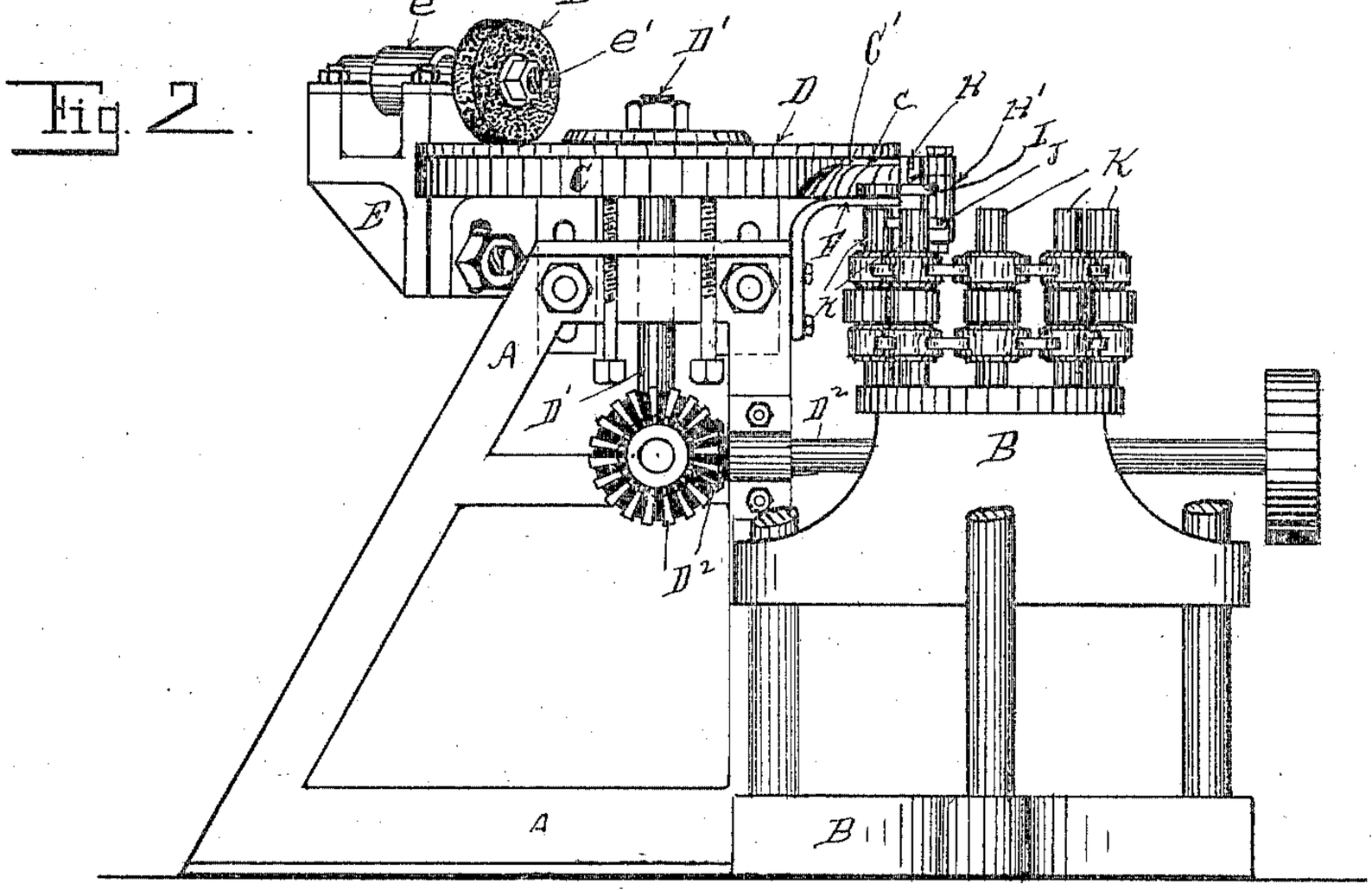


Fig. 2.



Witnesses.
G. J. Mead
Florine Stockett.

Inventor
Warren E. Knott
By J. C. & D. M. Sturgeon
Attys.

No. 817,122. PATENTED APR. 3, 1906.

W. E. KNOTT.

BUTTON BLANK GRINDING AND FEEDING MACHINE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 2.

Fig. 3.

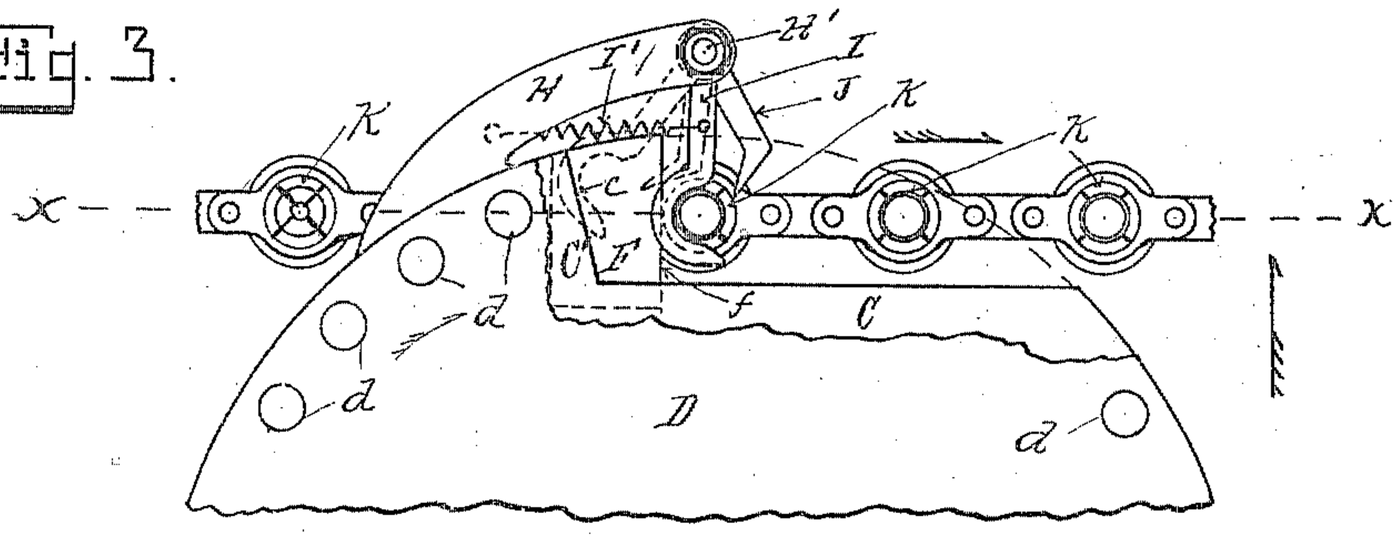


Fig. 4.

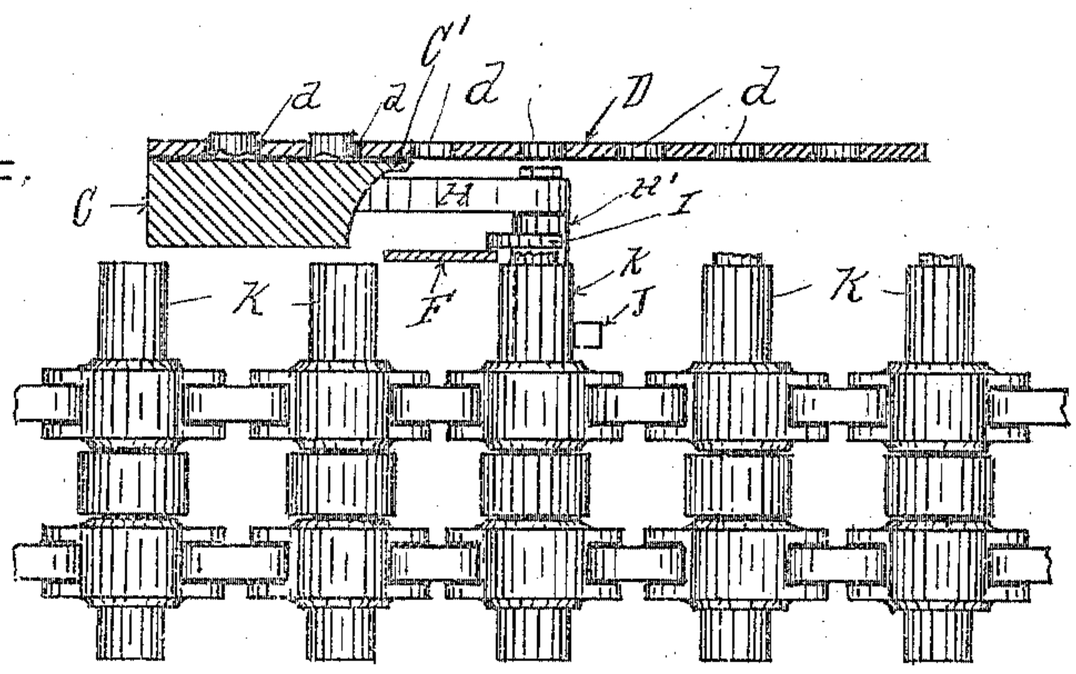
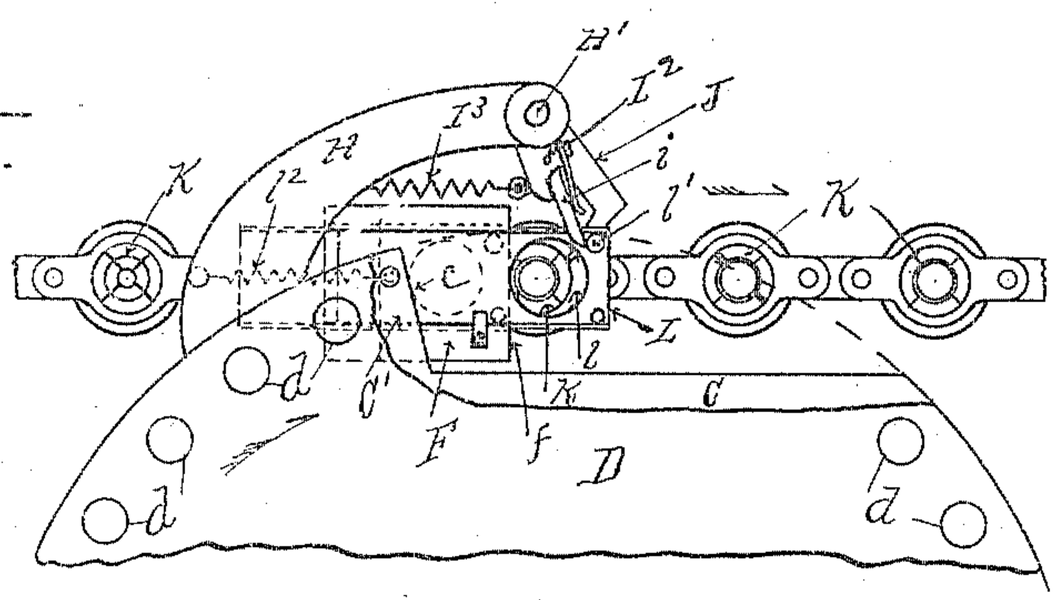


Fig. 5.



Witnesses.
G. J. Mead
Florence Stockart.

Inventor
Warren E. Knott
By J. C. & H. M. Sargent
Atty's.

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. 817,122. Specification of Letters Patent. Patented April 3, 1906.

Application filed April 10, 1905. Serial No. 254,777.

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 supplied and thereafter one side of the blank is ground off and the blank then automatically turned over and delivered to the chucks of a button-machine associated therewith and is designed as an improvement on the mechanism shown and described in my pending application, Serial No. 251,080, filed March 20, 1905, for a button-blank grinding and feeding machine.

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 plan view of the same with parts broken away. Fig. 4 is a vertical section of the same on the line *x x* in Fig. 3 with parts of the button-machine in elevation. Fig. 5 is a sectional plan view of a modification of the same.

In the drawings illustrating my invention, A is the frame of my improved machine, and B a portion of the framework of a button-machine associated therewith, which latter machine, however, is not of my invention.

In my improved machine, C is a horizontal table adjustably secured to the top of the frame A, so that it can be raised and lowered, as desired. The under portion of one edge of this table C is cut away so as to leave a thin plate forming a ledge C′, a part of which is cut away so as to form approximately a radial edge *c*, as illustrated in Figs. 2 and 3, as and for the purpose hereinafter set forth. On the top of the table C there is a horizontally-rotatable disk D, mounted on and driven by a vertical shaft D′, operated by a train of gearing D^2 from the associated button-machine, so as to operate in unison therewith. The disk D is provided near its periphery with a row of holes *d* of suitable size to receive button-blanks to be inserted therein bottom side up, so as to rest upon the top of the table C and be carried around over it by the rotation of the disk D.

Above one edge of the disk D there is a button-grinding wheel E, mounted in a suitable support E′, adjustably secured to the frame A. This grinding-wheel E is driven by a suitable belt (not shown) operating on a pulley *e* on the shaft *e′*, on which the grinding-wheel is mounted, and as the disk D is rotated in the direction of the arrow the button-blanks inserted therein bottom side up are carried under the grinding-wheel E and faced off and carried onward and over the edge *c* of the ledge C′ on the table C. Under the ledge C′ and extending some distance beyond the edge *c* thereof there is a horizontal plate F, (see Figs. 2, 3, and 4,) and as the button-blank passes off over the edge *c* of the table-ledge C′ the front edge thereof falls first, and as the blank falls it turns over so that the ground surface rests upon the plate F.

To the frame A there is secured a curved arm H, which extends outward beyond the edge of the table C, where it is cut away, and in the end of the arm H there is mounted a vertical oscillatory shaft H′, and on this shaft H′ there is a hooked arm I, adapted to swing back and forth over the plate F, as illustrated by full and dotted lines in Fig. 3, and on the shaft H′ there is another arm J, adapted to be engaged by the traveling chucks K of the button-machine.

The button-blank grinding and feeding machine and button-machine are so associated that the chucks K of the button-machine traveling in the direction of the arrow pass directly under the plate F of the button-blank grinding and feeding machine, and as the arm J is engaged by one of the chucks in its traverse it operates through the oscillatory shaft H′ to carry the hooked arm I forward in unison with the travel of the chuck and sweep a button-blank lying on the plate F off of the edge *f* of said plate into the open end of the chuck K, and when the arm J during the further traverse of the chuck becomes disengaged therefrom the retracting-spring I′ on the hooked arm J operates to draw the arm I back to the position shown by dotted lines in Fig. 3, so that it will be behind the

next button-blank falling over the edge *c* of the ledge C′ upon the plate F, and this operation is repeated as each chuck K passes under the plate F.

In Fig. 5 I have shown a modified construction of mechanism for moving the button-blank off of the plate F and over the upper ends of the chucks K. In this case I place upon the top of the plate F a reciprocating plate L, having a button-blank opening *l* therein, and in lieu of the hooked arm I, hereinbefore described, I secure to the shaft H an arm I^2, provided with a spring-actuated pivoted tongue *i*, adapted to engage a stud *l′* on the reciprocating plate L, and move the plate L forward by the action of the traveling chuck on the arm J until the opening *l* in said plate L is directly over the chuck K, so as to allow a button-blank in said opening to fall into the open end of the chuck K as it passes out from under the plate F, as clearly shown in said Fig. 5. To return the plate L to its normal position, a retracting-spring l^2 (shown in dotted lines) is provided, and to return the arm I^2 to its normal position for reëngagement with the stud *l′* on the plate L there is a retracting-spring I^3. In all other respects the mechanism of the modified construction illustrated in Fig. 5 is the same as hereinbefore described, both in its construction and operation.

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

1. In a button-blank grinding and 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 operating to move button-blanks over the edge of said ledge whereby they are turned over, a plate below said ledge to receive the turned-over button-blanks, and reciprocating mechanism to move said turned-over button-blanks from said plate into the chucks of an associated button-machine as said chucks pass under said plate, and means for operating said reciprocating mechanism, substantially as set forth.

2. In a button-blank grinding and feeding machine, a horizontal table, a horizontal rotative disk on the top of said table having button-blank openings therethrough, a grinding mechanism adapted to grind the upper surfaces of button-blanks placed in the openings in said disk, a ledge at one side of said table over the edge of which button-blanks are carried by said disk after they pass under the grinding mechanism, whereby the button-blanks are turned over bottom side up, a fixed plate under said ledge upon which the turned-over button-blanks fall, and a reciprocating plate having an opening therethrough to receive the turned-over button-blanks as they fall from the table-ledge into the opening in said reciprocating plate, and upon said fixed plate, and means for operating said reciprocating plate forward and back to carry the button-blanks, received into the opening therethrough, off of the edge of said fixed plate, substantially as set forth.

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

WARREN E. KNOTT.

Witnesses:
HERBERT J. L. CHINNECK,
H. M. STURGEON.