(No Model.) 2 Sheets—Sheet 1.

C. A. PFENNING.

MACHINE FOR THE MANUFACTURE OF BUTTONS.

No. 376,783. Patented Jan. 24, 1888.

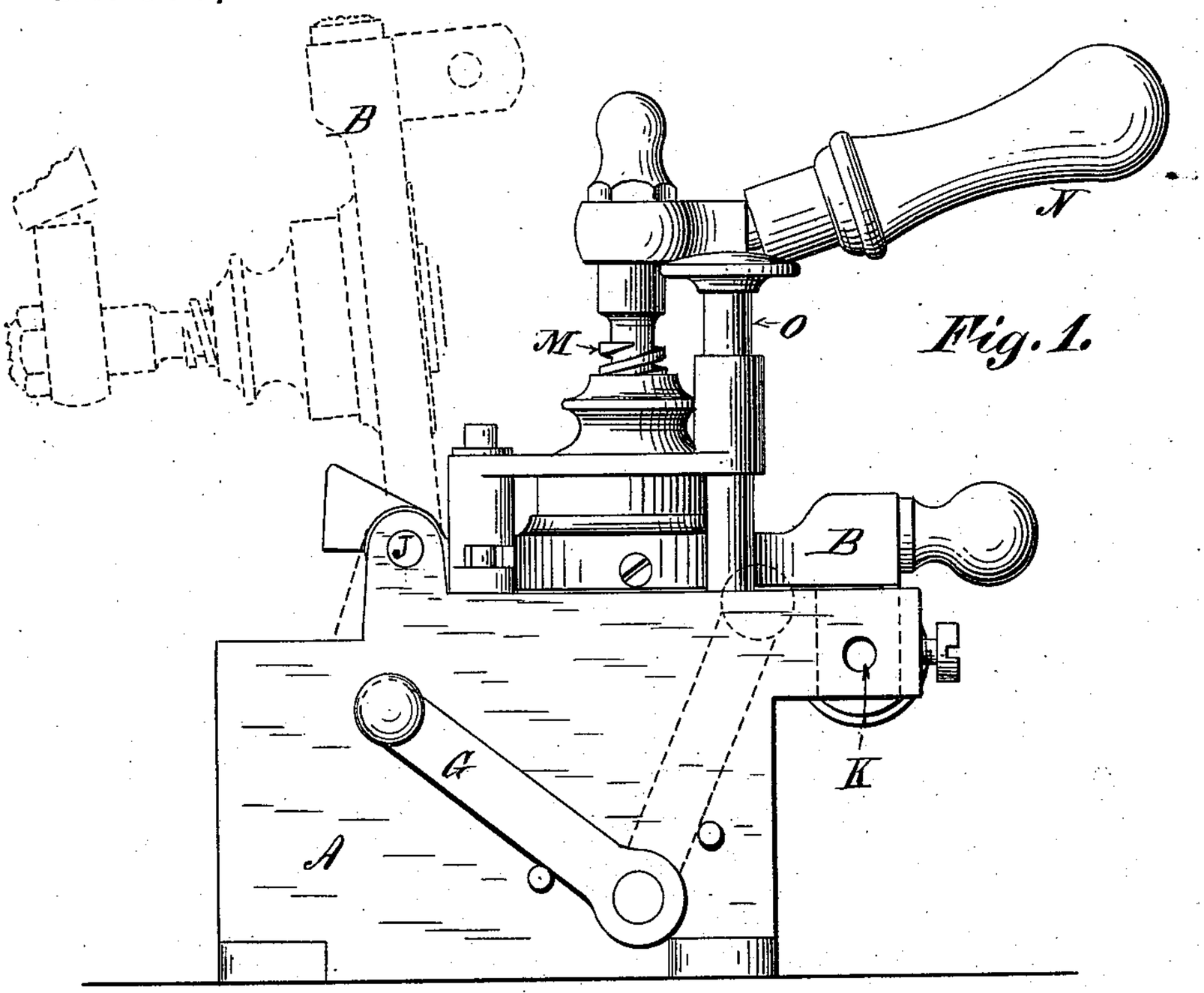

Fig. 1.

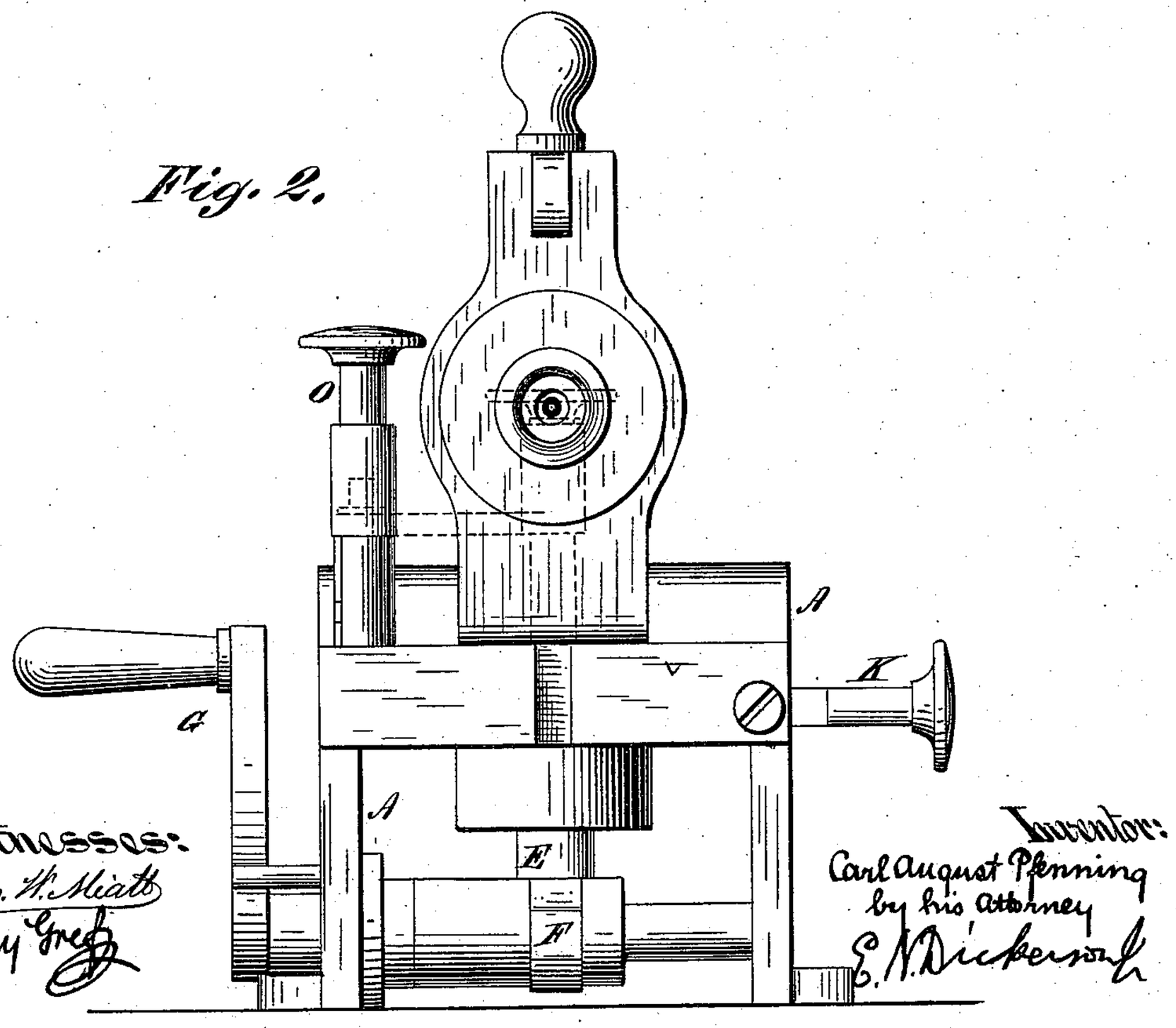

Fig. 2.

Witnesses:
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Anthony Grech

Inventor:
Carl August Pfenning
by his Attorney
E. N. Dickerson

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

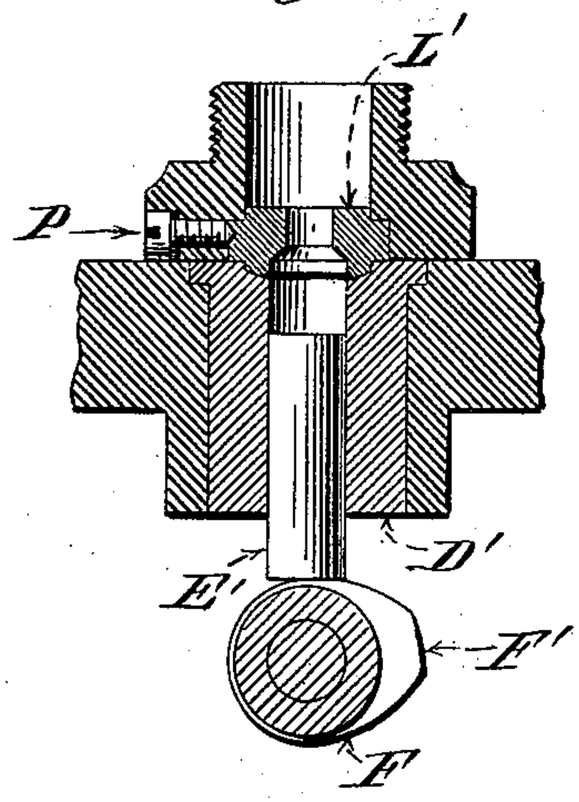

Fig. 3.

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UNITED STATES PATENT OFFICE.

CARL AUGUST PFENNING, OF BARMEN, PRUSSIA, GERMANY.

MACHINE FOR MANUFACTURING BUTTONS.

SPECIFICATION forming part of Letters Patent No. 376,783, dated January 24, 1888.

Application filed March 10, 1887. Serial No. 230,476. (No model.) Patented in Norway March 24, 1886, No. 172; in England April 20, 1886, No. 5,446; in Belgium May 15, 1886, No. 73,004; in Italy May 15, 1886, No. 20,181; in Sweden July 24, 1886; in France August 20, 1886, No. 175,617; in Germany October 12, 1886, Nos. 27,881 and 28,621; in Austria-Hungary October 15, 1886, No. 18,180; in Denmark October 27, 1886, No. 864; in Canada December 6, 1886, No. 25,497; in Spain October, 1886, No. 9,620, and in Portugal December 23, 1886, No. 1,085.

To all whom it may concern:

Be it known that I, CARL AUGUST PFENNING, a subject of the German Emperor, residing at Barmen, (Rittershausen,) in Rhenish Prussia, Germany, have invented a new and useful Machine for the Manufacture of Buttons, of which the following is a specification, reference being had to the accompanying drawings.

This invention has been patented to me abroad as follows: In Germany, Nos. 27,881 and 28,621, October 12, 1886; in Canada, No. 25,497, December 6, 1886; in Denmark, No. 864, October 27, 1886; in Austria-Hungary, No. 18,180, October 15, 1886; in Belgium, No. 73,004, May 15, 1886; in Italy, No. 20,181, May 15, 1886; in Portugal, No. 1,085, December 23, 1886; in France, No. 175,617, August 20, 1886; in Norway, No. 172, March 24, 1886; in Sweden, July 24, 1886; in Spain, No. 9,620, October, 1886, and in England, No. 5,446, April 20, 1886.

This invention relates to an improvement upon the machine patented to me October 5, 1886, No. 350,211, and the general method of making a button described in said patent is the method employed by me in the present apparatus. By means of the present apparatus I am enabled to make the button much more certainly and quickly than with the apparatus previously patented to me; and I am likewise enabled to dispense with the necessity of employing different machines for different sizes of buttons. By the present machine, by interchangeable parts, I can make any size button on the same machine, provided said size is no greater than the largest button which the machine is capable of making.

In my drawings similar letters refer to similar parts.

Figure 1 represents a perspective elevation of my machine with the button-forming cap closed; Fig. 2, a perspective elevation of the same at right angles to Fig. 1, with the button-forming cap open; Fig. 3, a central transverse section through Fig. 1; Fig. 4, a detail showing the method of substituting the ejector and cap for a different size button.

A represents the frame of the machine, upon which the other parts are mounted. This frame or base has upon its upper side a substantially flat surface, upon which the other parts are mounted. A cylindrical recess, C, is bored through the plate for the reception of the button-tube D and ejector E. The ejector is operated by a cam, F, rotating crank G, as is plainly apparent from the drawings. In the process of forming the button the ejector is first allowed to drop into the position shown in Fig. 4, allowing of the insertion of the materials to form the button within the cylindrical cavity thus left. After the cap is closed the ejector is then raised into the position shown in Fig. 3. The cam F should have a substantially flat portion, F′, which rests beneath the ejector when the ejector is raised to its upper position. The rest of the button-forming mechanism is carried upon the cover B, pivoted at J. This cover is substantially similar to the cover of the machine previously patented to me. When closed, it is locked into position by the bolt K. It carries the button-forming cap L and eyeleting screw-spindle M. The screw-spindle is turned by the handle N. The motion of this handle is by preference limited in both directions. When turned backward, a pin may be employed to arrest its motion, and when turned forward its motion is arrested against the pivoted plunger O. This plunger is supported upon a pivoted arm, as shown, and when swung inward it will be concentric with the center of the ejector E. When swung outward, as shown in Figs. 1 and 2, it serves to arrest the downward motion of the screw by the handle N coming in contact with its upper portion.

The operation of the mechanism is substantially the same as that previously patented to me. The cover is raised to the position shown in dotted lines in Fig. 1, when the cloth and shank are put in position. The plunger O is then swung over the button-tube D, and the ejector E being depressed by the motion of the crank, these parts are forced down upon it. The plunger O, when it is swung over the cloth and shank, is depressed by the hand forcing them into the cavity made to receive them. The mold is then placed in position in the but-

ton-forming cap L and the machine closed and locked. The revolution of the crank then raises the ejector, closes the parts between the ejector, the button-forming tube D, and the cap L. The eyeleting-spindle M is then depressed by moving the handle, and the button is completed. By withdrawing the bolt the cap is raised and the button can be removed.

When it is desired to form a button of a different size, the parts D' E' L', (shown in Fig. 4,) of proper size, are substituted for the parts D E L. The cap L' is preferably held in position by a set-screw, P. In this machine, as in that previously described, I find it important to have a beveled rim, *g*, in the button-forming cap.

It is obvious that the relation of the parts might be varied without interfering with the substance of my invention. For instance, some other method of raising the ejector E might be employed—such as a treadle, fluid-pressure, or a screw. The eyeleting spindle M can likewise be depressed by other means besides a screw, although I prefer a screw.

I do not limit myself to the arrangement of parts shown—for instance, the plunger O need not be pivoted upon the machine—though I prefer the form shown.

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

1. The combination of the base A, cover B, independent ejector E, and mechanism for raising said independent ejector through the button-forming tube, substantially as described.

2. The combination, in a button forming machine, of a supporting-base having a cylindrical opening for supporting the button-forming cylinder, a button-forming cylinder, D, made to the size of the button desired, an ejector, E, to fit the same, a cap or cover containing button-forming mechanism and having a cavity to receive cap L, in different sizes, provided with mechanism for turning the edges of the cloth, of identical exterior but varying interior diameters, and mechanism for supporting the cover upon the base, substantially as described.

3. The combination of the frame A, carrying button-forming cylinder C and ejector E, the pivoted cover carrying the button-forming cap and the eyeleting-spindle M, and a stop supported upon the base of the machine, against which the handle of the eyeleting-plunger strikes in its operation, thereby limiting the motion of the eyeleting-plunger, substantially as described.

4. The combination, in a button-forming machine, of the base A, the button-forming cylinder D, the ejector E, and the plunger O, pivoted upon the base A, whereby it may be swung into position to operate in depressing the cloth, substantially as described.

CARL AUGUST PFENNING.

Witnesses:
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