(No Model.)

C. A. PFENNING.

BUTTON MACHINE.

No. 396,427. Patented Jan. 22, 1889.

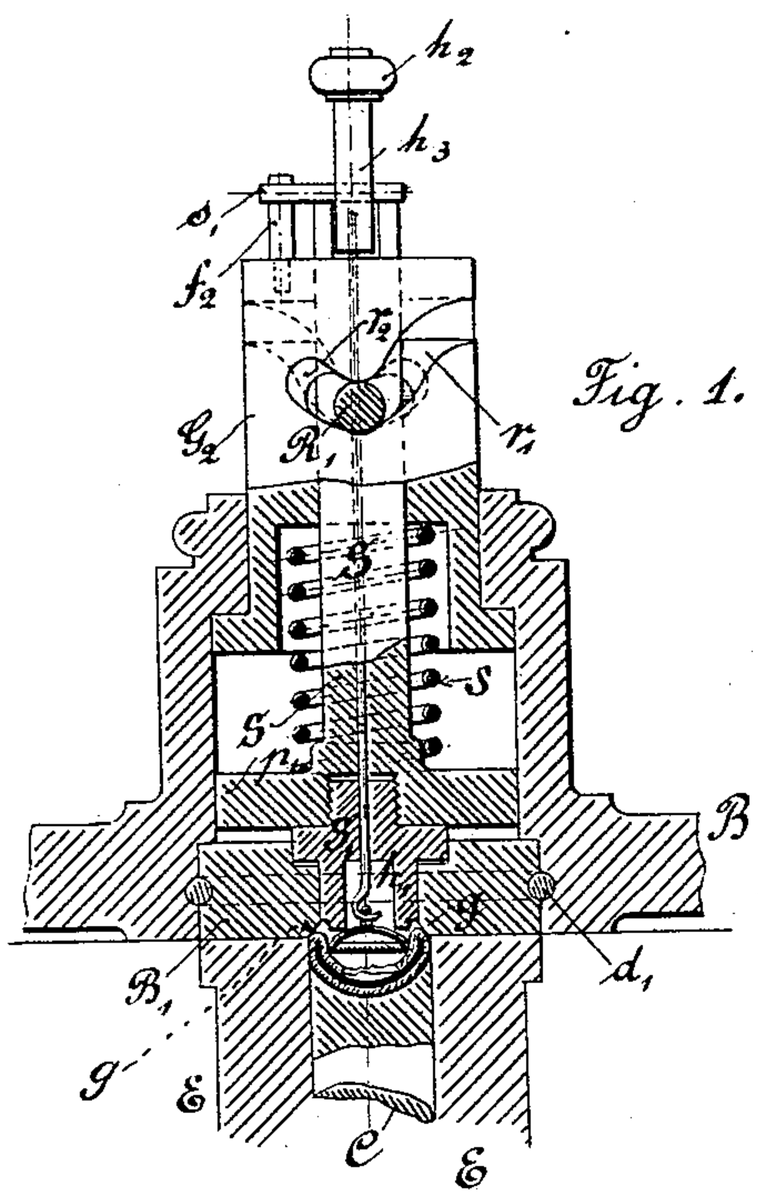

Fig. 1.

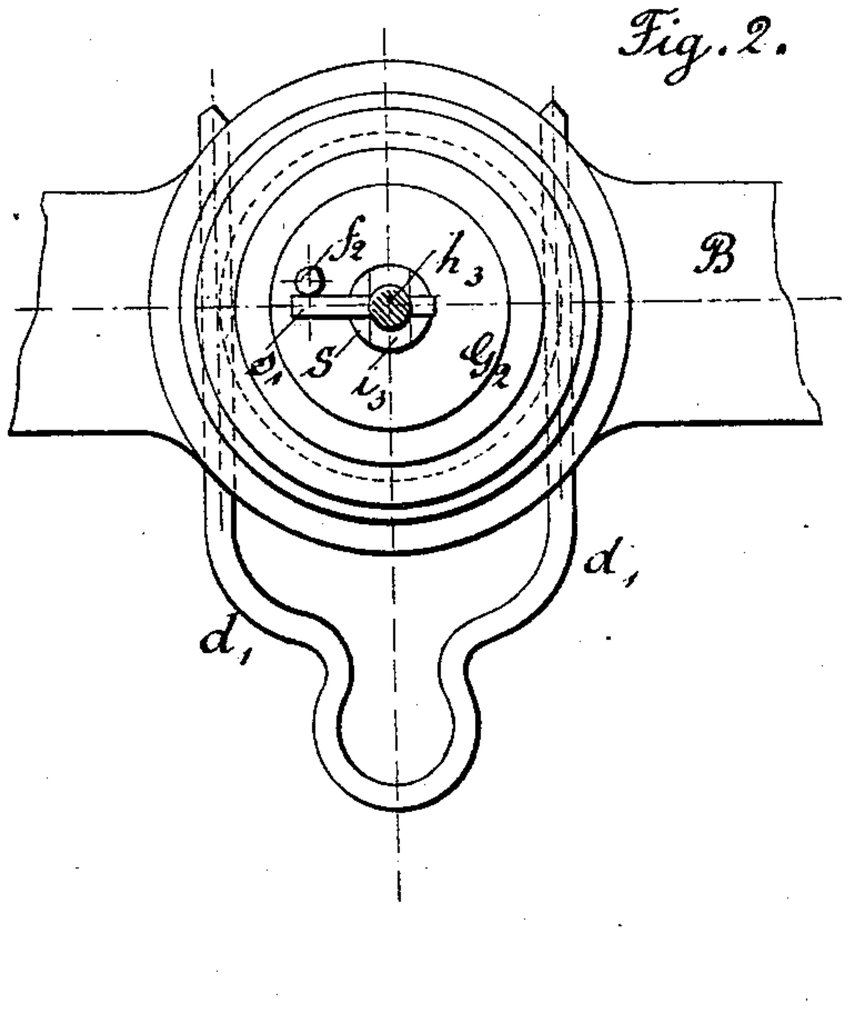

Fig. 2.

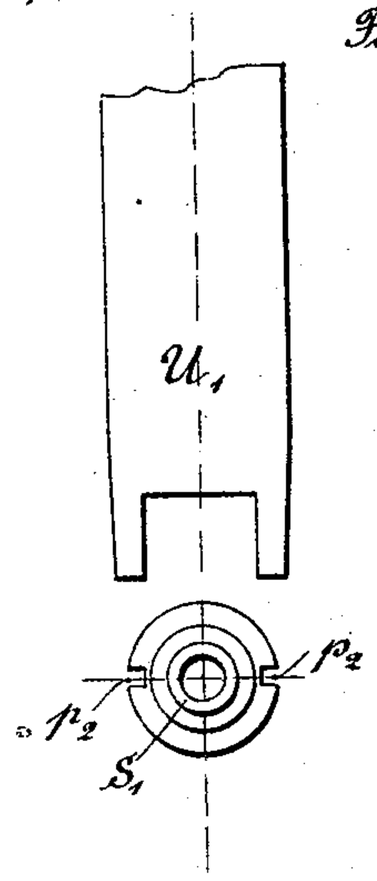

Fig. 4.

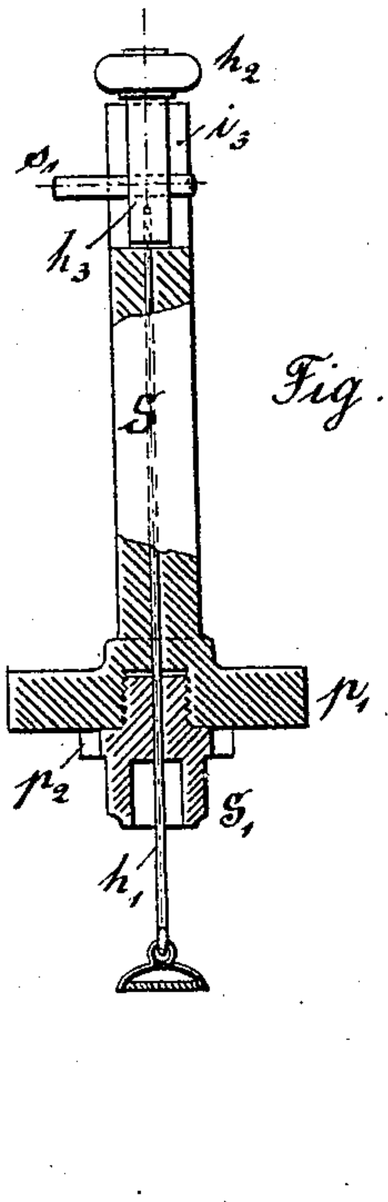

Fig. 3.

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UNITED STATES PATENT OFFICE.

CARL AUGUST PFENNING, OF BARMEN RITTERSHAUSEN, PRUSSIA, GERMANY.

BUTTON-MACHINE.

SPECIFICATION forming part of Letters Patent No. 396,427, dated January 22, 1889.

Application filed April 5, 1888. Serial No. 269,675. (No model.)

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 Apparatus for the Manufacture of Buttons, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This machine consists of mechanism for forming buttons, especially hemispherical in shape.

It consists, essentially, of two parts—the base for receiving the mold and covering material, called the "button upper part," and the cover for receiving the shank or button lower part.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a sectional elevation; Fig. 2, a top view of the cover; Fig. 3, a detail of the button-raising mechanism, and Fig. 4 mechanism for altering the size of the stamp for different-shaped buttons.

B represents a cap or cover, and E the base fitting the same. The cap B may be pivoted upon the lower part or arranged in any other way so as to assume the position shown in Fig. 1 for making the button when it is to be locked upon the base. The base itself contains a cylindrical core, C′, driven upward through the cylinder E by suitable mechanism—for instance, an eccentric upon a shaft. The cap B sustains the part G^2, which is provided with a peculiar-shaped slot, r' r^2. Through the center of the part G^2 traverses the plunger or stamp S, driven downward by a spring, *s*, as shown. The lower part of the cover B, which is somewhat expanded, contains the disk-shaped guide-plate p', which is vertically adjustable in this space, and the spring *s* bears against the part G^2 and the guide or part p'. Within the movable guide or part p' is screwed the stamp S′, which traverses the folding-die B′, as shown. The part B′ is held in the part B by the pronged wire d', as clearly shown in Figs. 1 and 2. On the withdrawal of this wire a different-shaped part may be substituted, and a corresponding difference may be made by substituting a new plunger, C′, or a plunger with a variable head to correspond to different-shaped buttons.

The part B′ has a bending-flange, *g*, as shown. Through the center of the stamp S′ and the plunger S passes the wire hook h'. The end of this hook may be a hook, as shown, or, if a cloth-shank button is used, a point to catch in that cloth shank. The upper end of the stamp S is provided with a transverse slot, i^3, as shown, and the wire itself is lifted by the button h^2, having a stem, h^3, adapted to drop into the slot at one position of its revolution, and otherwise to be sustained upon the edge by pin s'. A pin, s', supported in the stem h^3, serves to rotate the stem h^3 into the position when it will drop in the slot. In Fig. 1 the pin rests upon the top of S, while in Fig. 3 it has dropped within the slot. This revolution is accomplished by the engagement of the pin s' upon the fixed pin f^2, fixed in the part G^2, as shown. The part S′ is provided with slots p^2, with which a key, U′, engages, so that different parts S′ can be screwed into the stem S.

The operation of my machine can now be readily understood. The mold and button are dropped upon the core, which is at first depressed. By turning the handle h^2 the hook h' is dropped and the shank hooked upon it, the cover being raised. This position is shown in Fig. 3. The button h^2 is then raised and the pin revolved into the position shown in Fig. 2, thereby holding up the shank until it is again dropped by the revolution of the stem i^3. The machine is then closed upon the mold and surrounding material. The piston C′ is then raised to the height shown in Fig. 1, and the handle R′ being turned to the position shown in Fig. 1 the pin s' strikes upon the fixed pin f^2 and drops the wire hook h' into the position shown in that figure. The continued turning of the handle R′ after the button lower part has been dropped into the button upper part and pressed therein by the stamp S′ raises the stamp S′ out of the way, and the continued upward motion of the core C′ bends in, by reason of the bevel *g*, the metal mold and cloth forming the button upper part around and embracing the button lower part. Upon raising the cover B, the hook h' being in its lower position, the button is readily detached.

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

1. In a button-forming machine, a cylinder

within which the button is formed, a core for raising the button therein, a stamp having its axis coincident with the core, and a hook for sustaining the button passing through said stamp, substantially as described.

2. In a button-forming machine, a movable guide and a stamp, S, supported and centralized thereby and detachably connected thereto, in combination with the spring *s*, actuating said guide, and the handle R′, traveling in the slot *r*′, for elevating the guide and stamp, substantially as described.

3. The combination, in a buttom-forming machine, of the cap B, the button-forming part B′, provided with bevel *g*, and the stamp S′, depressed by spring *s* and raised by handle R′, traveling in the slot *r*′, substantially as described.

4. The combination, in a button-forming machine, of a stamp, S′, and a central longitudinally-movable button-holding wire, *h*′, substantially as described.

5. The combination, in a button-forming machine, of the stamp S, provided at its upper end with a slot, a central button-supporting wire traversing the stamp, and an arm at or near the upper end of said supporting-wire, whereby the latter may be sustained from the top of the stamp or be permitted to drop into the slot therein, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL AUGUST PFENNING.

Witnesses:

CARL KRÜGER,

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