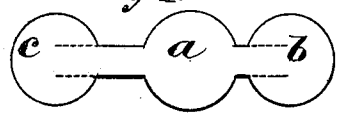
J. KEATS.

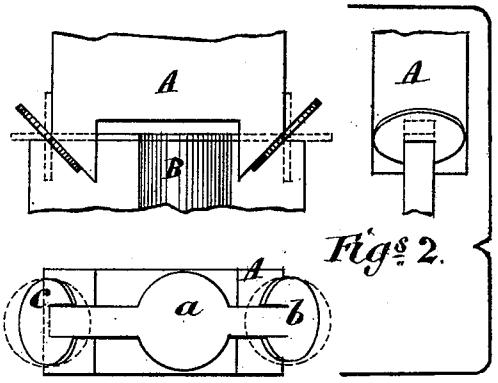
BUTTONS.

No. 177,253. Patented May 9, 1876.

Fig. 1.



Figs. 2.



Figs. 3.

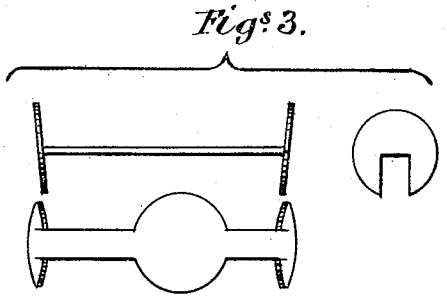


Fig. 4.

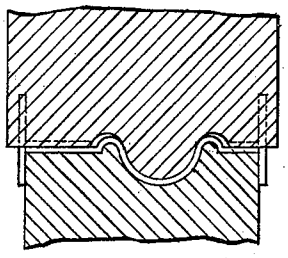
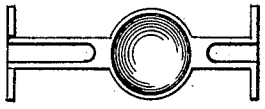


Fig. 5.



Figs. 6.

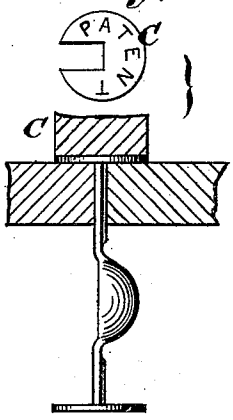


Fig. 7.

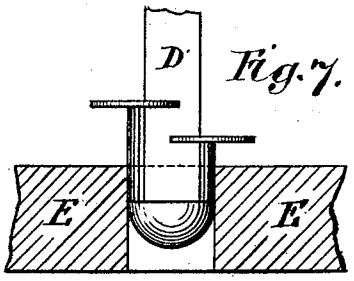


Fig. 8.

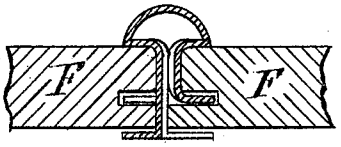
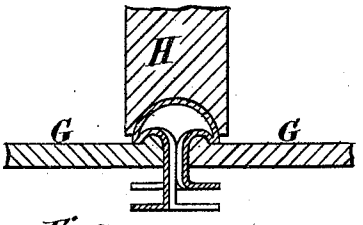
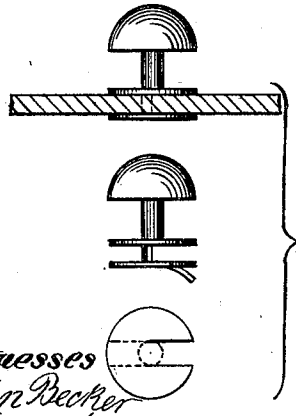


Fig. 9.



Figs. 10.



Figs. 11.

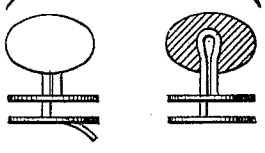


Fig. 12.

Witnesses
John Becker
Fred Haynes

John Keats
by his Attorneys
Brown & Allen

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN KEATS, OF NEWCASTLE-UNDER-LYME, ENGLAND.

IMPROVEMENT IN BUTTONS.

Specification forming part of Letters Patent No. **177,253**, dated May 9, 1876; application filed August 2, 1875.

To all whom it may concern:

Be it known that I, JOHN KEATS, of Newcastle-under-Lyme, in the county of Stafford, England, have invented certain Improvements in the Manufacture of Buttons, of which the following is a specification:

This invention relates to a novel construction of button or stud which will admit of permanent application to leather and other fabrics without the use of stitching. The shank of the stud or button is formed with two flanges, which are intended to gripe the fabric to which it is to be applied, and hold firmly thereto.

One side of the bottom flange is divided, and one edge formed by the severance is more or less pointed, and it is, moreover, bent outward so as to convert the flange into a rude screw-thread. The object of this peculiar construction of stud or button is to allow of the bottom flange worming its way through the cloth or leather when an axial motion is given to the stud, and of its being permanently attached to the fabric to which it has been applied by pressing the flanges together.

In manufacturing the button from thin sheet metal I stamp out a blank therefrom, which takes the form of three disks connected together by short necks, and this blank I convert by means of suitable dies into a stud that will admit of being attached to leather or other fabric by means of pressure. The middle disk of the blank will constitute the head of the stud or button and the end disk two flanges, which will embrace and may tightly gripe the fabric to which the button is to be applied.

In the accompanying drawings I have shown, in several views, the mode of carrying out this improved manufacture from thin sheet metal. Figure 1 shows a blank which may be stamped out of thin sheet-brass, or other metal, by means of a fly-press, or other suitable contrivance. This blank consists, substantially, of three disks, *a b c*, connected together by two necks of different lengths. The disk *a* is intended ultimately to form the head of the stud or button, and the disks *b* and *c* to form respectively the upper and lower flanges that are to embrace the fabric, while the necks serve to form the stem of the stud or button. This blank I submit to cutting-dies similar to those shown in side and plan views and end elevation at Fig. 2, for the purpose of cutting slits in the disks *b c*, as indicated by the dotted lines, Fig. 1, and turning up those disks at right angles, or nearly so, with the disk *a*, as shown in plan, edge, and end views at Fig. 3.

By reference to Figs. 2, it will be seen that the upper and movable die A has in its descent upon the blank, which is supported upon a fixed die or bed, B, made the cuts in the disks indicated at Fig. 1, and turned them over to an angle of about forty-five degrees. By the further descent of this die A the disks will be forced into a nearly vertical position. The blank thus far formed will now be ready for the next operation, the object of which is to dish the disk *a* so as to bring it to a suitable shape for a stud or button-head, and at the same time to channel or convert to a half round the greater portion of the so-called necks, which are to constitute the stem of the button. This operation is effected in dies similar to those shown at Fig. 4, and the result of the pressure of these dies upon the blank is shown at Fig. 5. At this stage of the manufacture it may be convenient to stamp any desired device upon the article. For this purpose the blank is placed between griping-dies (see Fig. 6) with the disk upward that is to have the device impressed upon it. These griping-dies will be so arranged as to sustain the pressure of a stamp or die, C, which, being brought down on the lower flange of the stud, will impress its device thereon.

The next operation is to bend over the necks and bring them parallel to each other. This may be readily performed by a device similar to that shown at Fig. 7, where D is a narrow plunger brought down upon the blank, which is laid with its rounded head downward over a hole made in a fixed die, E. By forcing down the plunger D, the stamped metal will be doubled up, as shown in the figure. To fold over these necks, and to bring them together so as to form the stem of the stud, it is requisite to subject them to lateral pressure. To this end they are submitted to the action of a pair of jaws, F F, Fig. 8, which will bring the disks or flanges one under the other, and the half-round necks into contact, thus forming a round stem. The completion of this

stem, and giving the head a proper set upon its stem, are conveniently effected by the combined action of a pair of griping-dies, G, and a hollowed plunger, H, Fig. 9. It only now remains to bend down one of the points of the lower flange out of the plane of the other point, and thus to give that flange somewhat the character of the thread of a screw, and the manufacture of the stud is then complete, as shown at Fig. 10.

In order to insert this improved construction of stud in leather, an eyelet-hole is punched in the fabric. The lower flange is then passed through the hole by entering the same after the manner of a screw-thread, and on the application of pressure the flanges are caused to bite the fabric tightly between them.

When inserting the stud in a woven fabric no hole will require to be punched, as the point entering the fabric will open a way for the flange.

A modification of the invention is shown at Fig. 11, where instead of a metal head the button is provided with a head of glass or other material that will admit of being molded onto the stem. In this case, in forming the metal blank I omit the middle disk *a* of Fig. 1, and form the blank as shown at Fig. 12. This blank I operate upon by dies and punches after the manner above described, the same being, however, modified so as to produce the stem with its double flange, as shown at Fig. 11.

The head of the stem may be looped, as shown, or otherwise enlarged to take a good hold of the material that is to form the head. If the head is to be of glass, it may be molded upon the stem or attached thereto in any well-known and approved manner of combining glass with metal.

When making the head of horn or clay, the stem will be inserted in the die in which the plastic material is brought to shape, and thus an intimate union of the stem and head will be secured.

Having now set forth the nature of my invention, I wish it to be understood that I do not claim the means described of attaching the heads of buttons to their studs, but have explained those modes merely for the sake of illustrating the application of the invention to buttons having attached heads; nor do I claim a stud or button provided with a single lower flange constructed to form the worm of a screw; but

What I do claim is—

A button having its shank constructed of duplicate necks, posts, or studs, parallel with each other, and each one carrying a disk or flange arranged below the head of the button, substantially as and for the purposes herein set forth.

Dated the 23d day of June, 1875.

JOHN KEATS.

Witnesses:

J. M. LUCAS,
U. S. Consul.

HENRY VIGURS,
Newcastle, Staffordshire.