

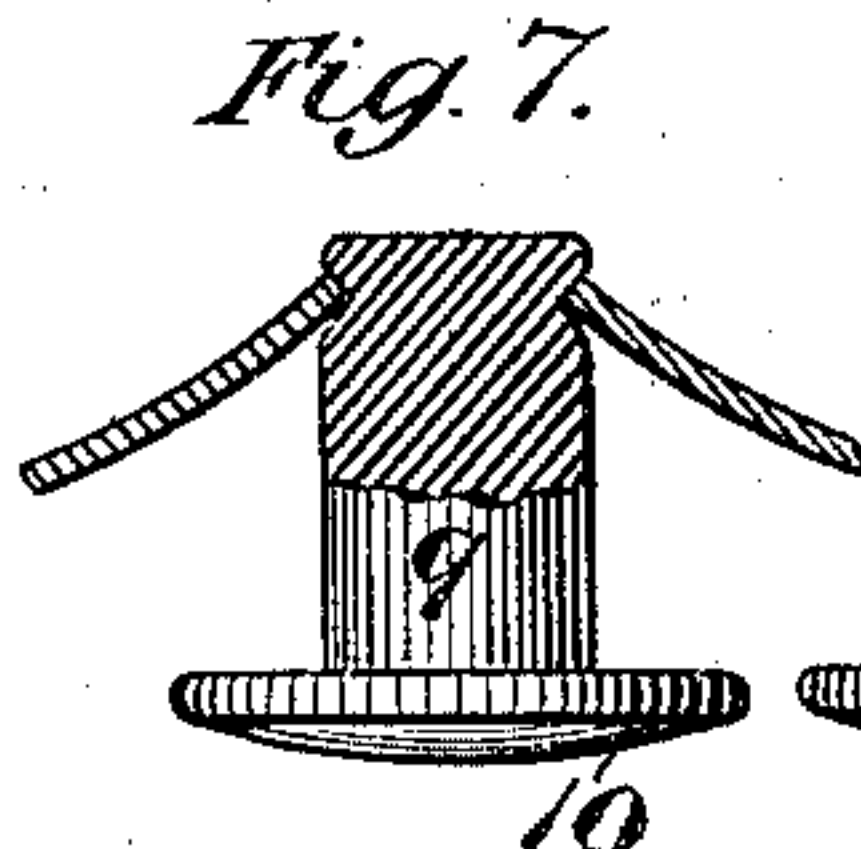
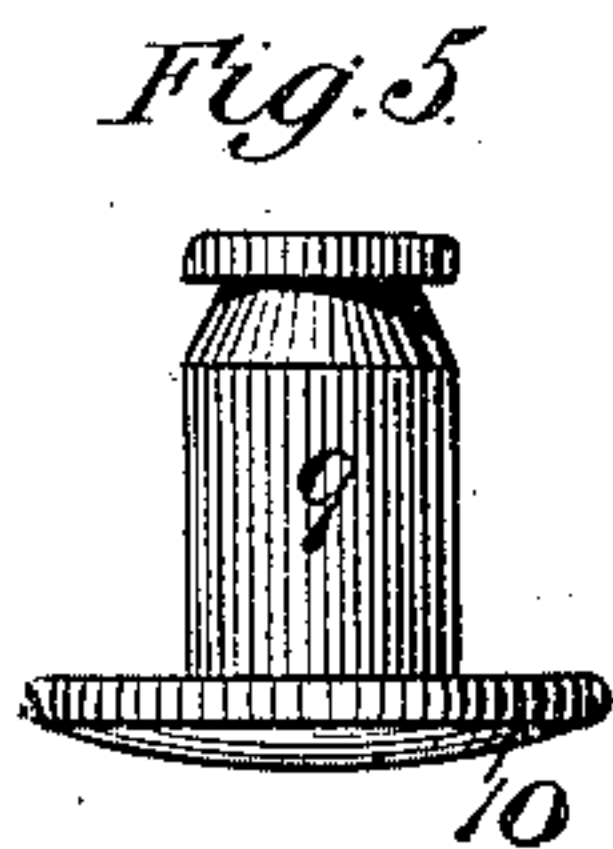
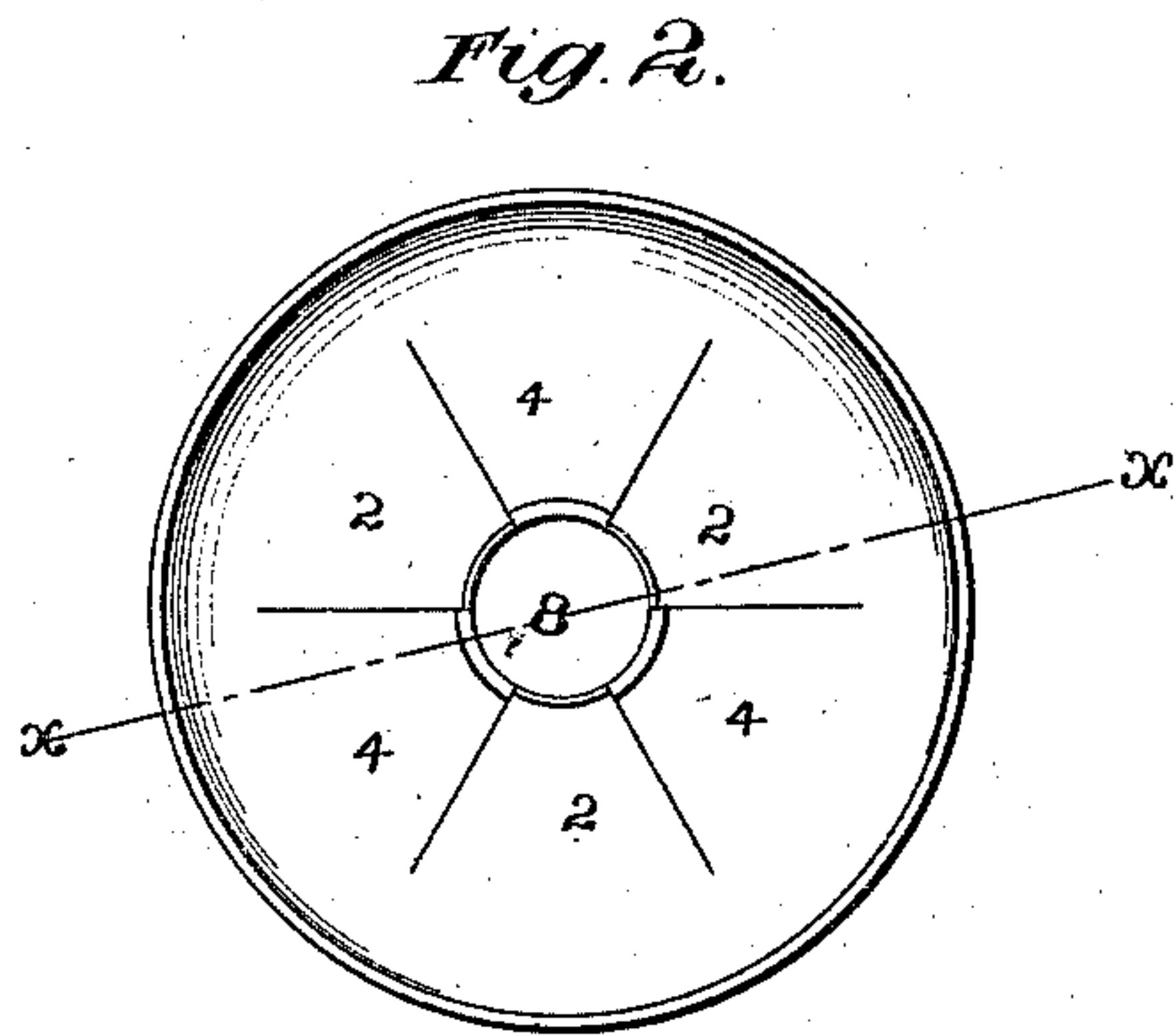
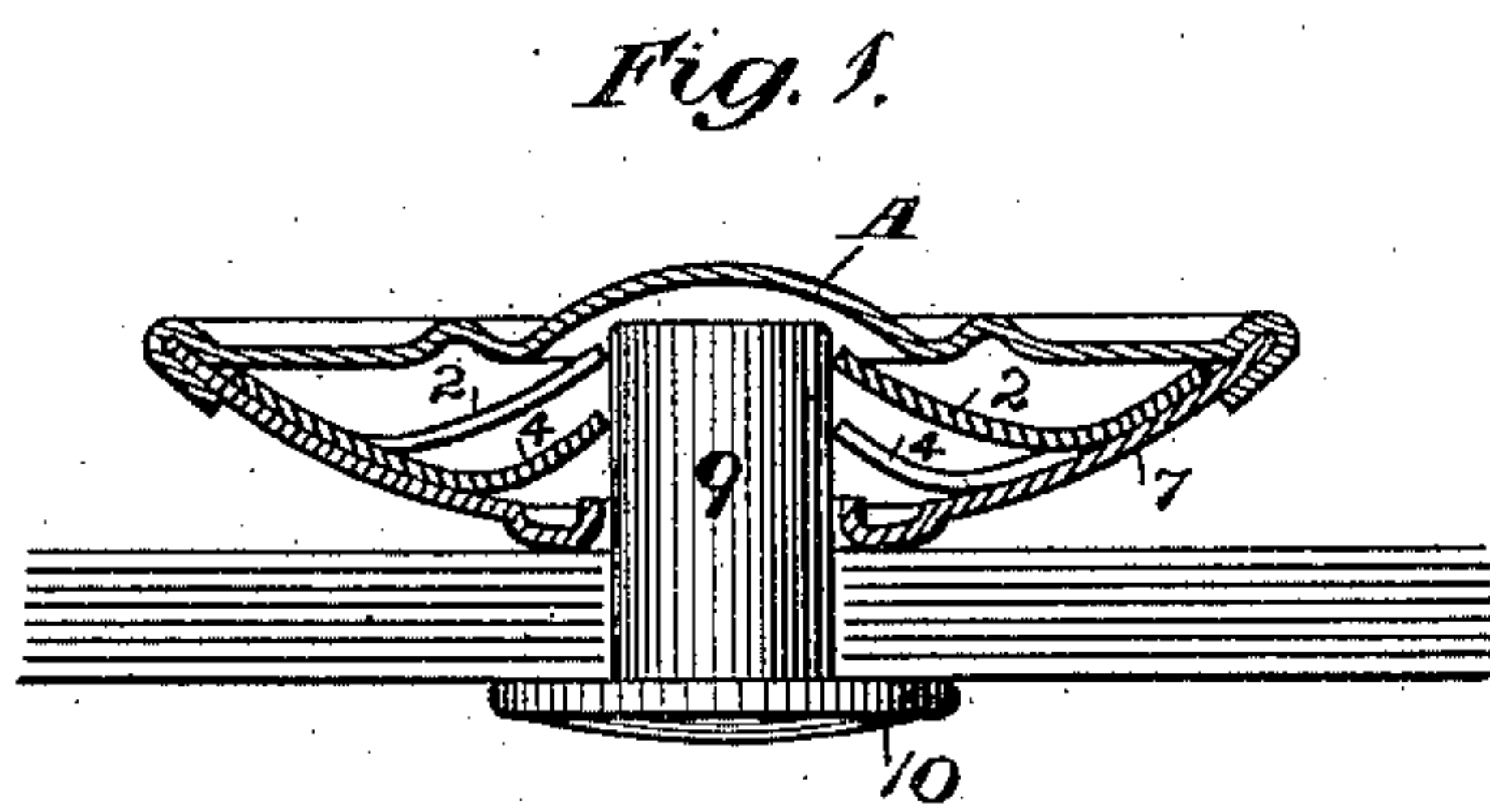
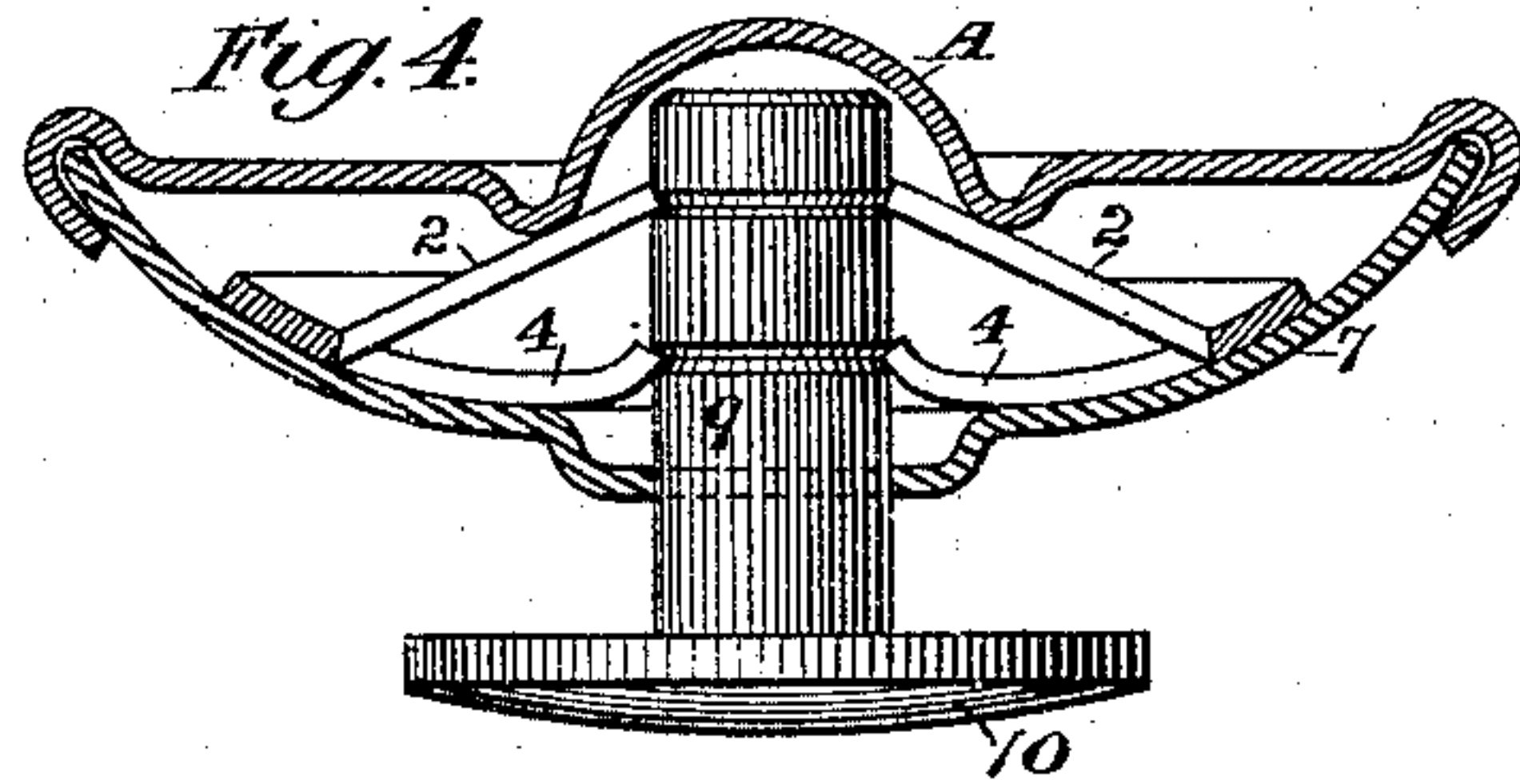
(No Model.)

T. J. WINANS.

BUTTON.

No. 312,943.

Patented Feb. 24, 1885.



attest:
George H. Bott.
Geo. H. Chace

Inventor:
Thomas J. Winans
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UNITED STATES PATENT OFFICE.

THOMAS J. WINANS, OF BINGHAMTON, NEW YORK, ASSIGNOR TO JOSEPH
P. NOYES & CO., OF SAME PLACE.

BUTTON.

SPECIFICATION forming part of Letters Patent No. 312,943, dated February 24, 1885.

Application filed July 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. WINANS, a citizen of the United States, residing in the city of Binghamton, county of Broome, and State of New York, have invented certain new and useful Improvements in Buttons, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In said drawings practical embodiments of the present invention are illustrated by the following views: Figure 1 is a diametrical sectional elevation of a button applied to a piece of fabric, with its shank inserted within the button-head and clamped by spring-arms. Fig. 2 is a top view of a plate provided with multiple-spring clamping-arms. Fig. 3 is a sectional elevation of the same, taken on the line *x x*. Fig. 4 is a sectional elevation of a button in which the spring-disk is shown in a modified form; and Figs. 5, 6, and 7 are elevations of different forms of attaching-shanks.

These improvements relate to that class of buttons which have mechanical means for securing them to a garment, and more particularly to such of that class as are provided with spring-arms within the button-head, which clamp the shank and retain it in place when inserted through a hole in the collet and protruded within the embrace of such spring-arms. In such buttons a prominent defect incident to common constructions is that the bearing ends of the spring-arms all lie in the same horizontal plane, and hence bear upon the shank in a common plane, and afford but a single holding-point longitudinally of the shank. This admits of the shank wobbling, and renders it liable to be detached. This and other defects are avoided in my improvement, which consists in providing a button-head with multiple springs projecting so as to form two rows of holding-points for engagement with the shank.

In carrying out this invention the button-head is provided interiorly with sets of spring-arms 2 4, the bearing-points of which form a central opening, through which the shank 9 protrudes, said springs being preferably formed by perforating a disk made of spring metal with a number of radiating cuts, (see Fig. 2,) that form separated tongue-like pieces, an alternate or suitable number of which are bent to a considerable degree upward, while the remaining ones are bent to a lesser degree upward, the two sets of springs 2 4 thus constituted forming a double row of springs, the bearing-points of which form the central opening, 8, through which the fastening-shank is protruded. The plate or disk bearing these spring-arms might be the collet; but to make a more finished button it is placed above the collet 7 within the button-head, so as to be out of view, and the collet 7 is perforated with a central hole coincident with the opening 8, formed by the converging points of the springs, which hole should be small enough to embrace the shank and afford an additional bearing for the same. In Fig. 1 the plate or disk carrying the springs 2 4 is supposed to be confined in place or centered by having its perimeter abutting against the collet 7 and outer plate, A, where they meet; but in Fig. 4, which is the preferred form, the spring-disk carrying the spring-arms 2 4 has a diameter considerably less than the button, and hence said disk is unconfined at its perimeter, and, though free to adjust itself diametrically, is held concentrically by the tension of its spring-arms. Thus made, the necessity of exact dimensions and nice fitting of the parts is avoided, and special means of fastening the disk are not required.

Any fastening plate or disk, as 10, with a shank, 9, projecting from it may be used with a button provided with such spring-arms. Thus a shank having a plane surface will be clamped between the ends of the springs at two points, and thus be securely embraced and held, as is shown in Fig. 1. When the shank is provided with a shoulder near its end, as in Fig. 4, against which the upper set of spring-arms may abut, the lower set of spring-arms may impinge against the plane sides of such shank; or, a shank having a number of shoulders formed by a series of depressions in its surface, as in Fig. 6, may be used, in which case each of the two series of spring-arms will clamp into a separate depression. In all these cases there will be two sets of springs impinging upon the shank at different points, and the

result will be that when the shank is once forced into their embrace it will be held most securely against all effort to displace it, and will resist any tendency to wobble, thus forming a rigid fastening.

While two sets of these spring-arms are sufficient to produce a practical button, three or even more sets may be employed and be within the invention.

It will be apparent that the outer plate or piece, A, of the button-head is an unnecessary part of the button, although advantageous when strength is considered, and as its principal object is to afford ornamental effect, it may therefore be omitted.

The collet 7 might in a cheap class of buttons have the spring-arms formed in it; but when the piece A is omitted the collet should be used and have the spring-arms properly secured to it. Of course two plates, one bearing the spring-arms 2 and the other the spring-arms 4, might be used.

When the shank 9 has depressions to receive the spring-arms 2 or 2 4, it is well to form such depressions so that when the spring-arms are engaged therein their ends will be snugly seated, as is indicated in Figs. 4 and 7, which construction will prevent any looseness or vertical play of the head upon the shank 9.

This is effected in the form shown in Fig. 1

by reason of the spring-arms finding their own seat upon a shank, 9, having plane sides.

What I claim is—

1. A button-head provided with multiplex spring-arms projecting in different horizontal planes, and adapted to be used with a suitable attaching-shank, substantially as described.

2. The combination, with a button head, of a spring plate or disk of lesser diametrical dimensions than the said head, and held concentrically therein by the tension of its multiplex spring-arms projecting in different horizontal planes, substantially as described.

3. The combination, with a button-head having multiplex spring-arms projecting in different horizontal planes, of an attaching-shank, substantially as described.

4. The combination, with a button-head having multiplex spring-arms projecting in different horizontal planes, and a collet with a central bearing, of an attaching-shank, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS J. WINANS.

Witnesses:

JOSEPH P. NOYES,
NERI PINE.