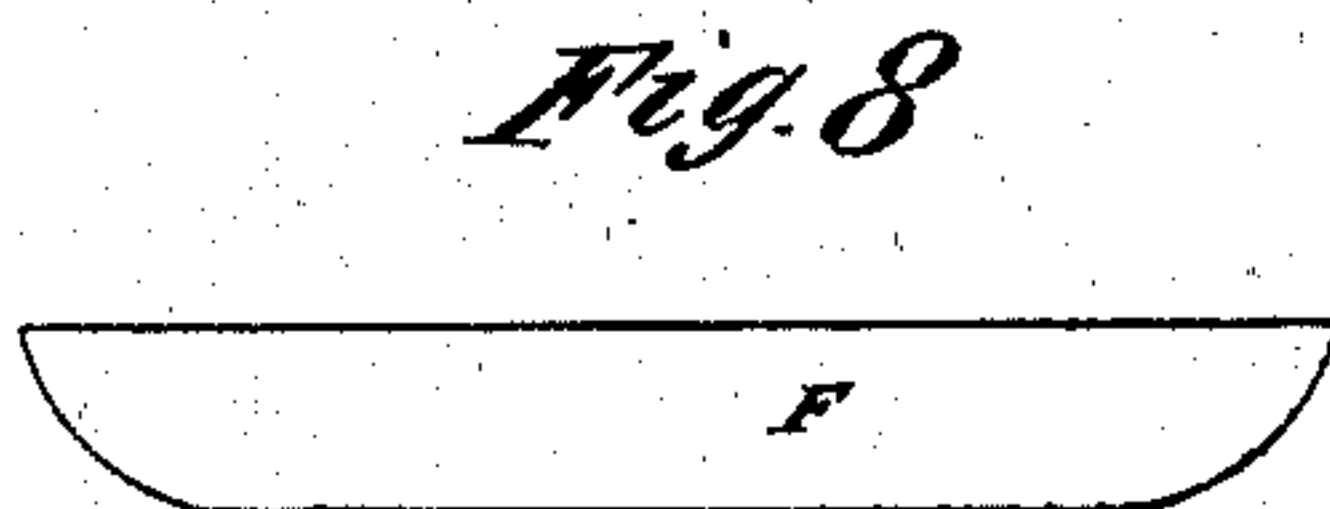
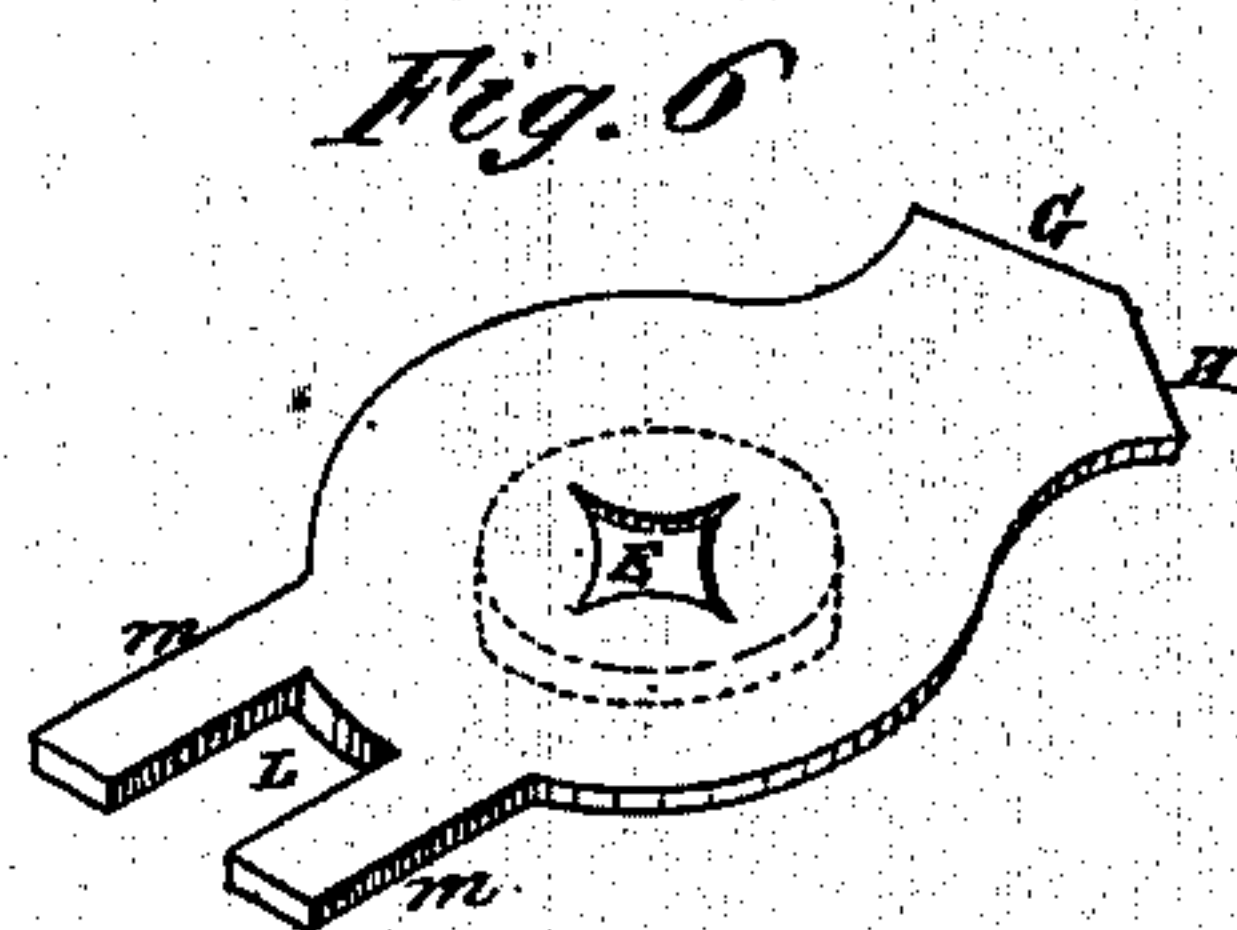
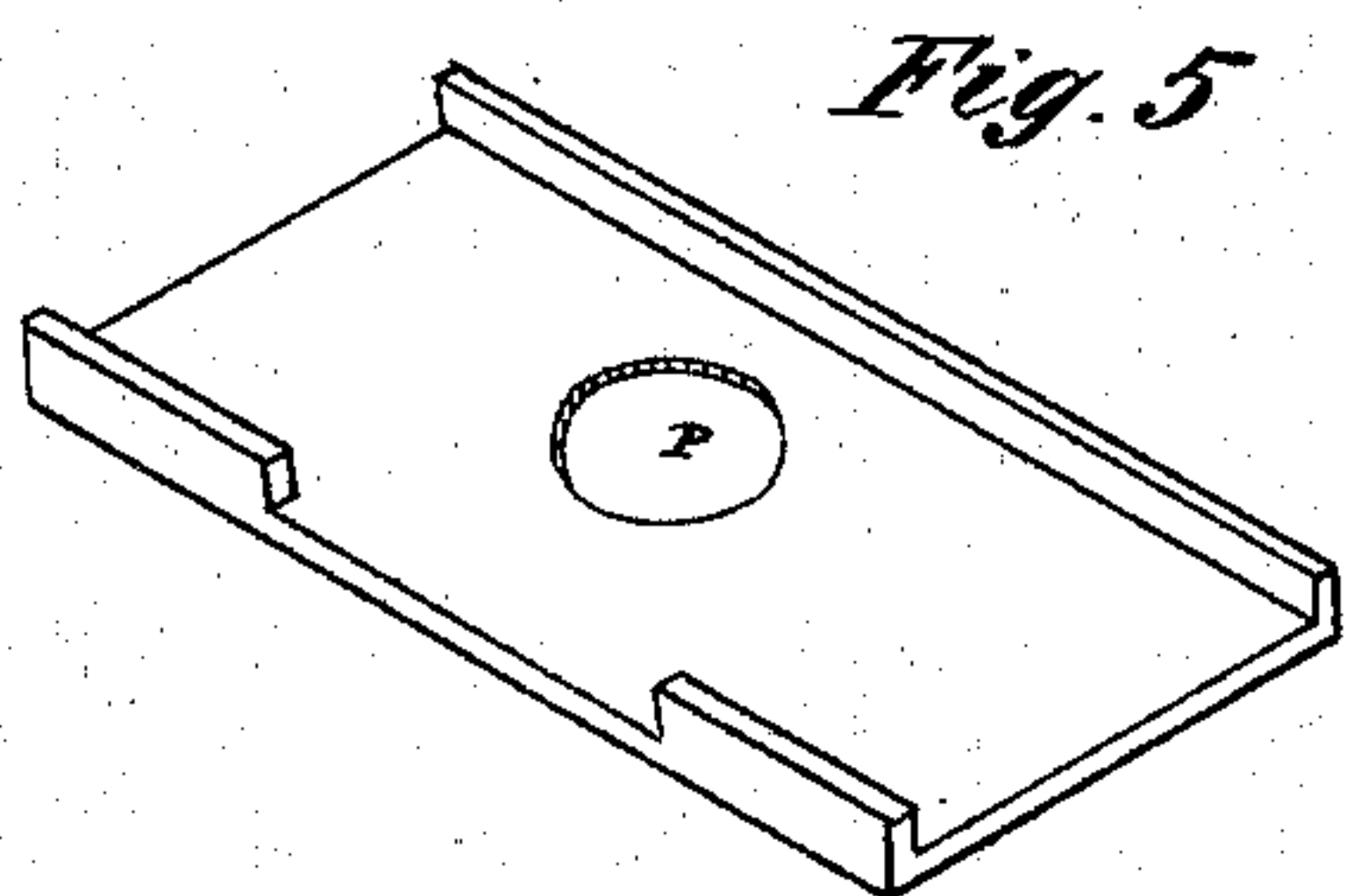
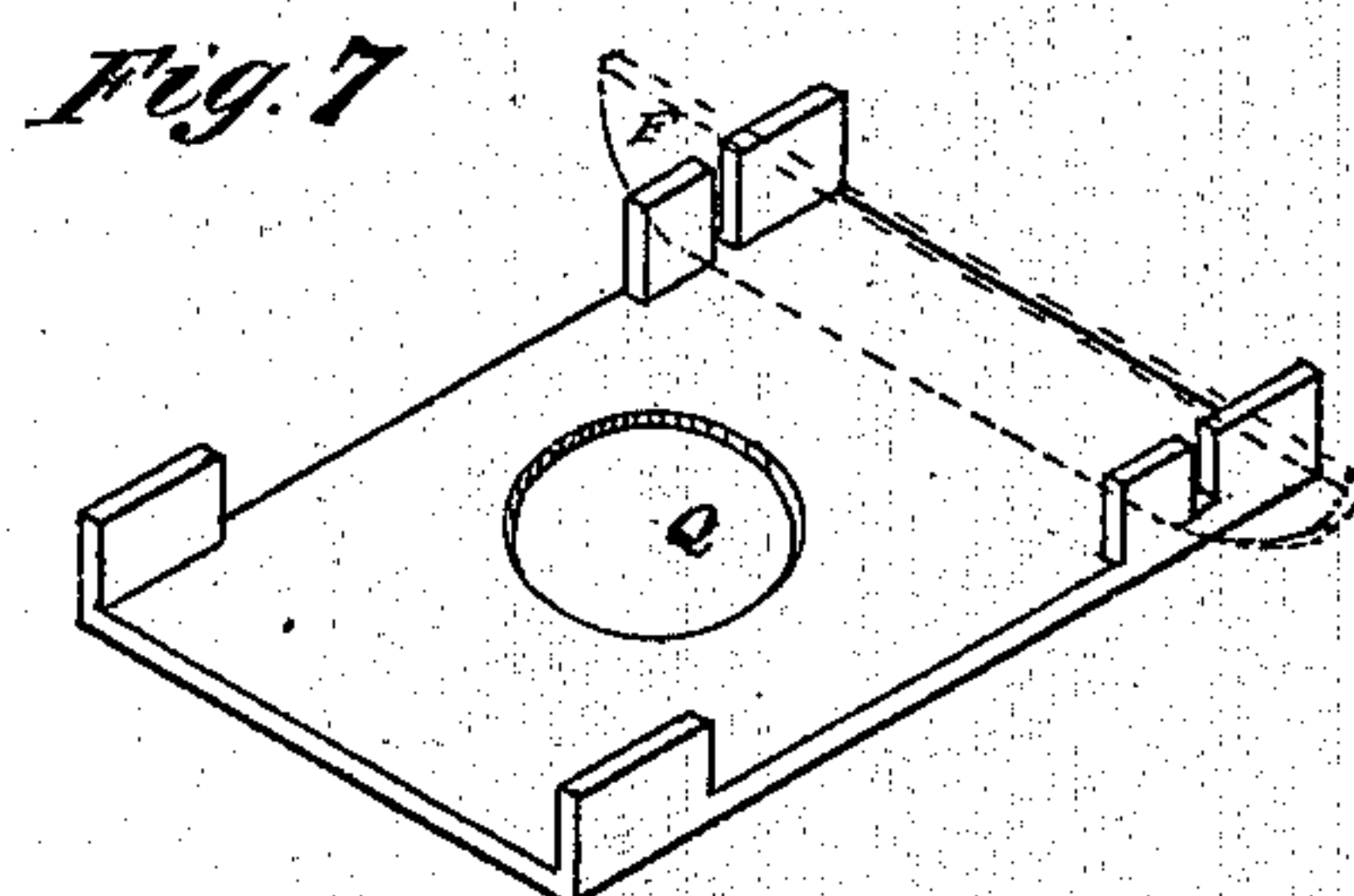
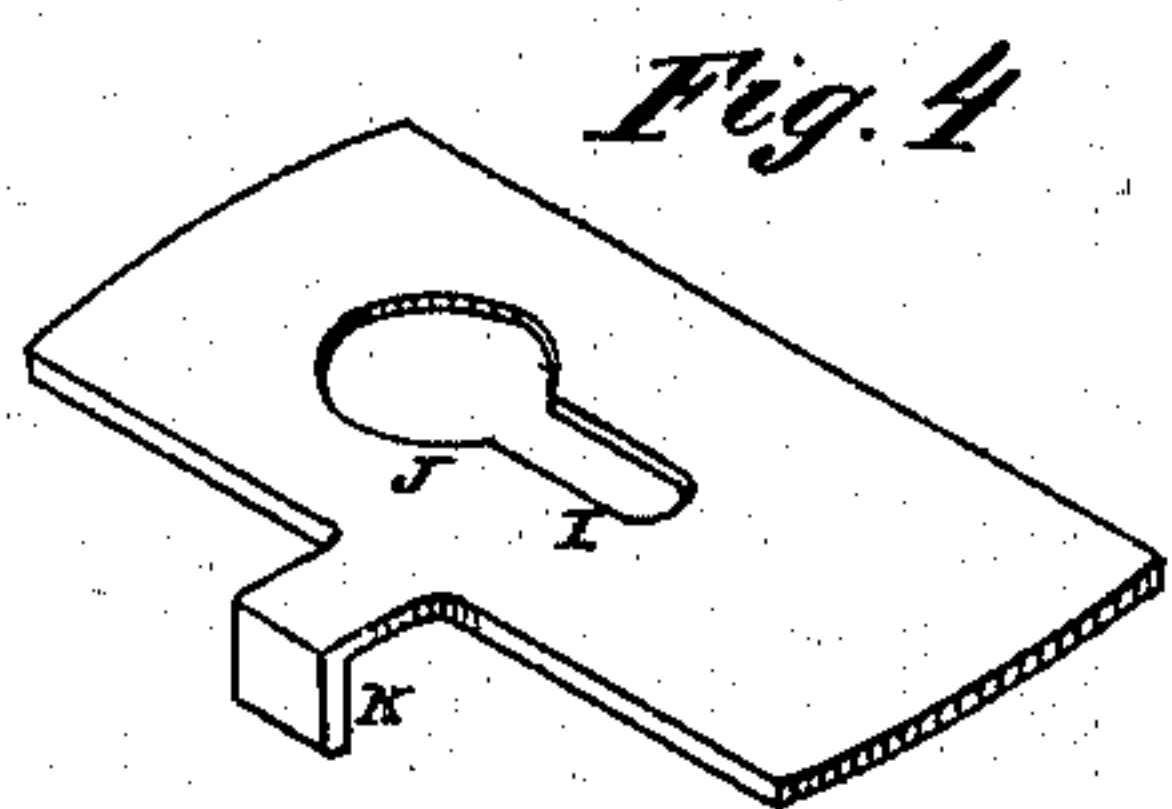
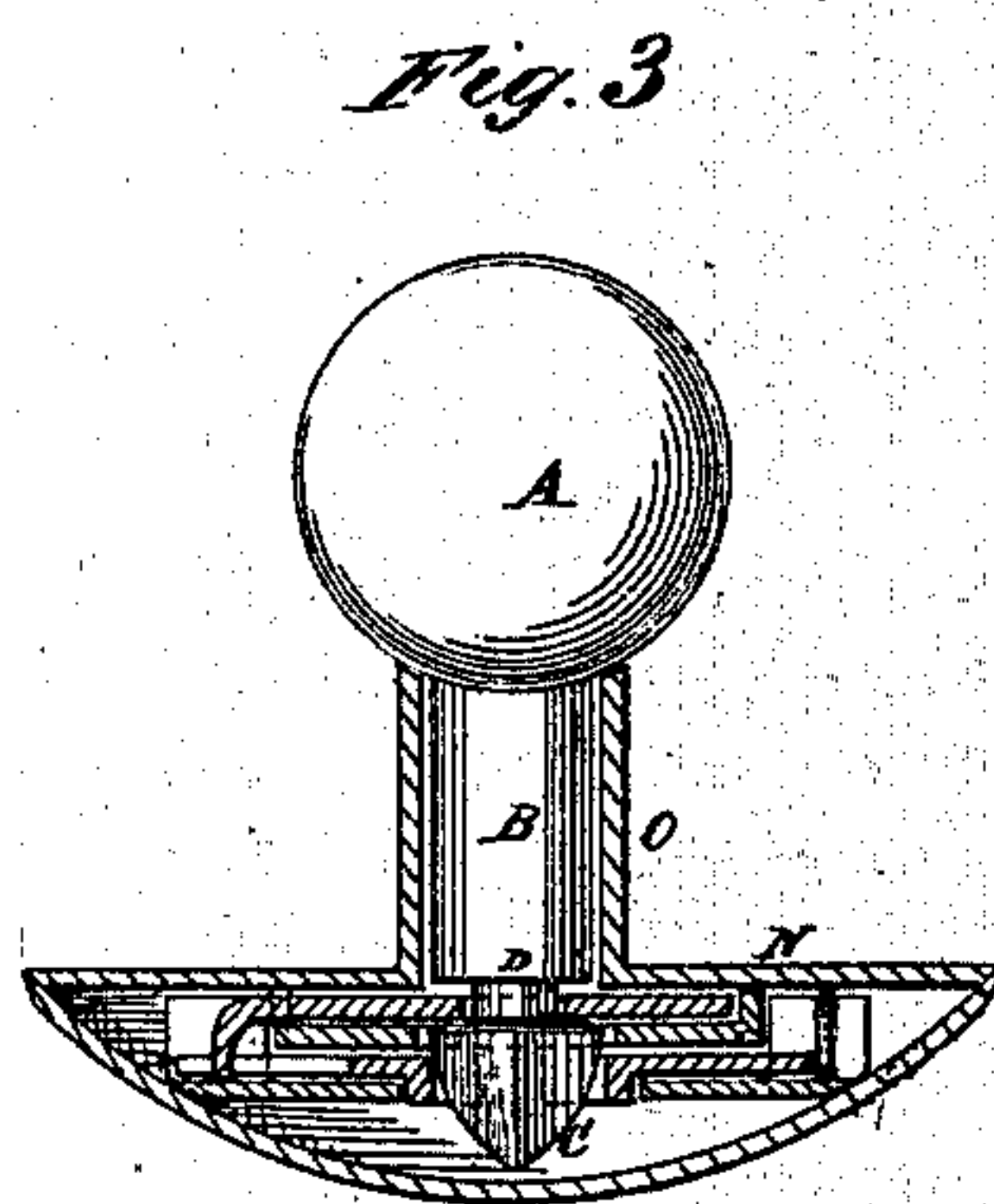
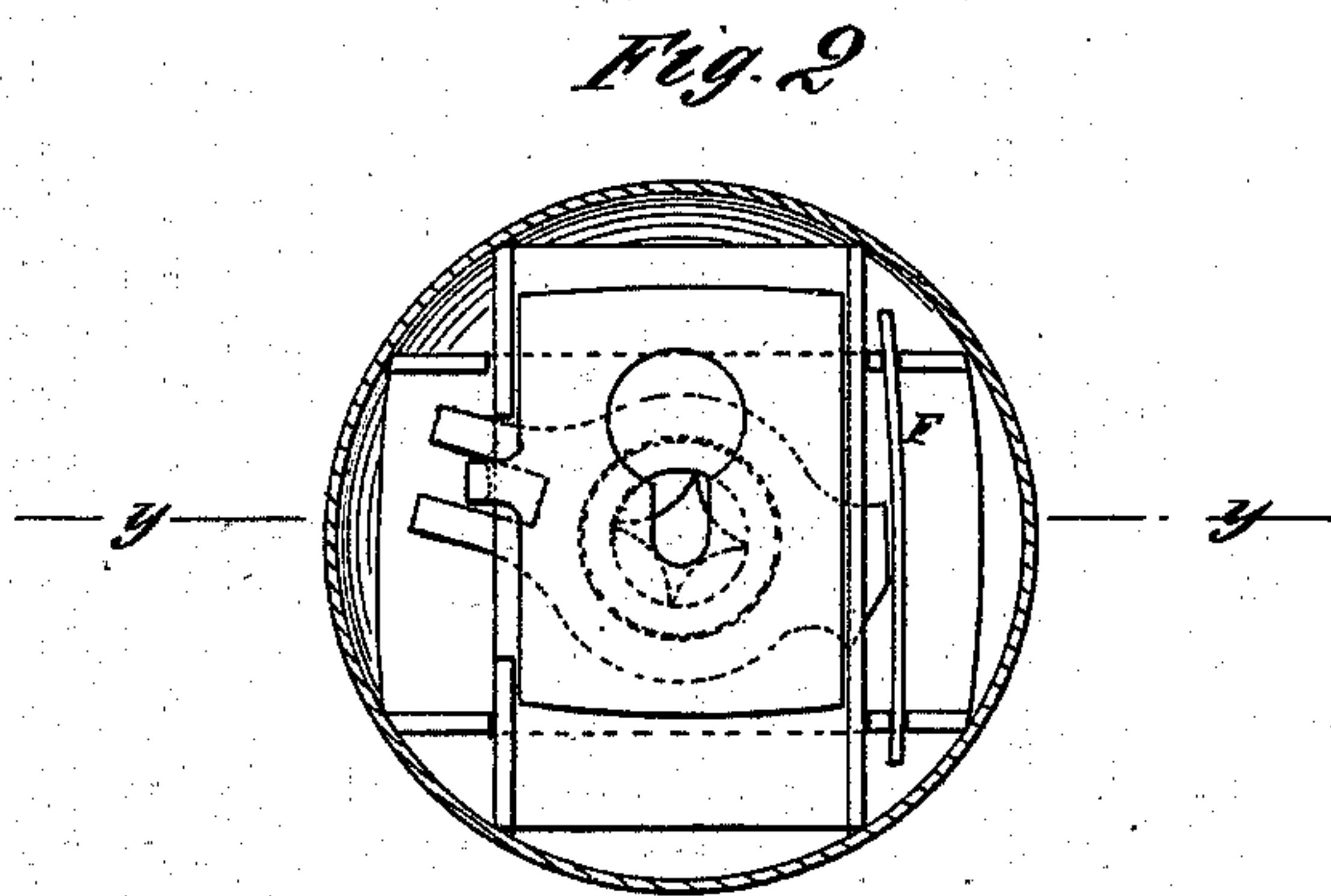
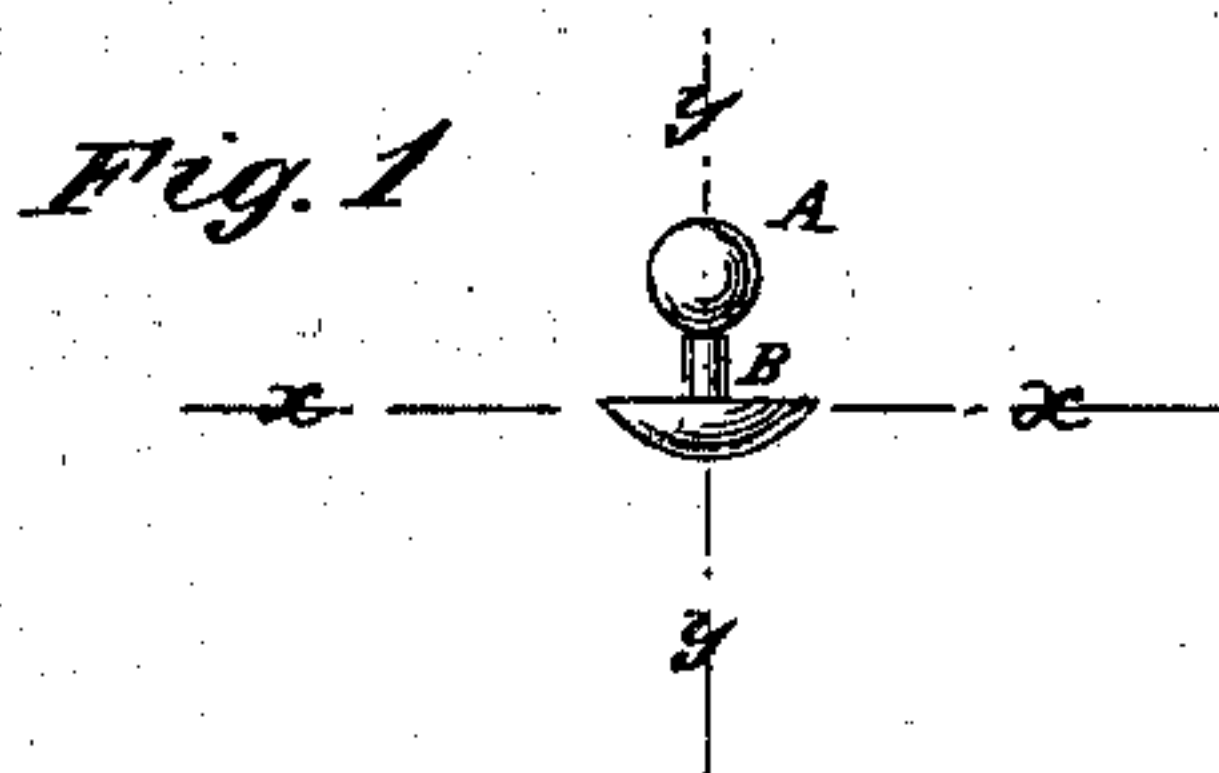


P. H. LONG.
Stud and Button-Fastenings.

No. 146,396.

Patented Jan. 13, 1874.



WITNESSES:
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UNITED STATES PATENT OFFICE.

PHILIP H. LONG, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN STUD AND BUTTON FASTENINGS.

Specification forming part of Letters Patent No. **146,396**, dated January 13, 1874; application filed December 20, 1873.

To all whom it may concern:

Be it known that I, PHILIP H. LONG, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Lock-Action Stud and Button Fastening, of which the following is a specification:

This invention relates to the construction of stud and button fastenings for shirt-bosoms, collars, wristbands, &c.; and consists in a stud or button and base, so constructed that the two are securely fastened together by turning the stud or button a part of a revolution, and unfastened by a reverse movement.

In the accompanying drawing, Figure 1 represents an outside view of a shirt-stud of actual size, constructed according to my invention. Fig. 2 is a view of the base with the covering-plate off, it being a section of Fig. 1 taken on the line *x x*. Fig. 3 is a vertical section of Fig. 1 taken on the line *y y*. Fig. 4 is the upper or key-hole plate, which is made to slide when the stud is turned. Fig. 5 is a stationary guide-plate. Fig. 6 is a vibrating-plate, which is placed transversely on the plate 7 or the lower plate. Fig. 7 is the lower plate, which rests on the concave of the base. Fig. 8 is a spring, (seen in Fig. 2, and in dotted lines in Fig. 7.)

Similar letters of reference indicate corresponding parts.

A is the stud proper, having a stem, B, on the end of which is the conical key C and neck D. A cross-section of the key is nearly represented in the center of Fig. 6.

As the key is inserted, it passes through the plates 4 and 5, and enters the orifice E in Fig. 6; and as it is turned the plate, Fig. 6, is moved or vibrated on the plate 7. This movement is sufficient to change the pressure of the spring F from the surface G to the surface H

of the plate 6, the spring being fastened or attached to the plate 7. When the plate 6 moves, it moves the key-plate 4, which slides longitudinally, so that the small part I of the hole J of plate 4 incloses the neck D of the stem B, and securely locks the stud. To accomplish this locking action, the stud is turned only about one-fourth of a revolution.

The plate 5 is stationary, and keeps the plate 4 in place. The lip K of the plate 4 drops down, and enters the space L between the fingers *m m* of the plate 6. This plate 6 is placed crosswise, so that, as it is vibrated by the key, it causes the plate 4 to slide on the plate 5, and lock the stud, as before described. N is the covering-plate, having a tube, O, for the support of the stem B of the stud.

By this locking device the stud is securely fastened and unfastened by a slight turn, the pressure of the spring against the plate 6 being sufficient to hold the parts in position.

The orifice P in the stationary plate 5 simply allows the key to reach the vibrating plate 6. The orifice in the plate 7 receives a flange (indicated by dotted lines on the plate 6) for keeping that plate in a central position.

In all the figures, except Fig. 1, the parts are greatly magnified for the purpose of more plainly showing the construction.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A stud or button fastening, composed of key C and neck D, in combination with plates 4, 5, 6, and 7, and spring F, arranged substantially as shown and described.

PHILIP H. LONG.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.