

(No Model.)

G. L. GRAY.

HOOK AND EYE HINGE FOR SEWING MACHINE TOPS.

No. 367,616.

Patented Aug. 2, 1887.

Fig. 1.

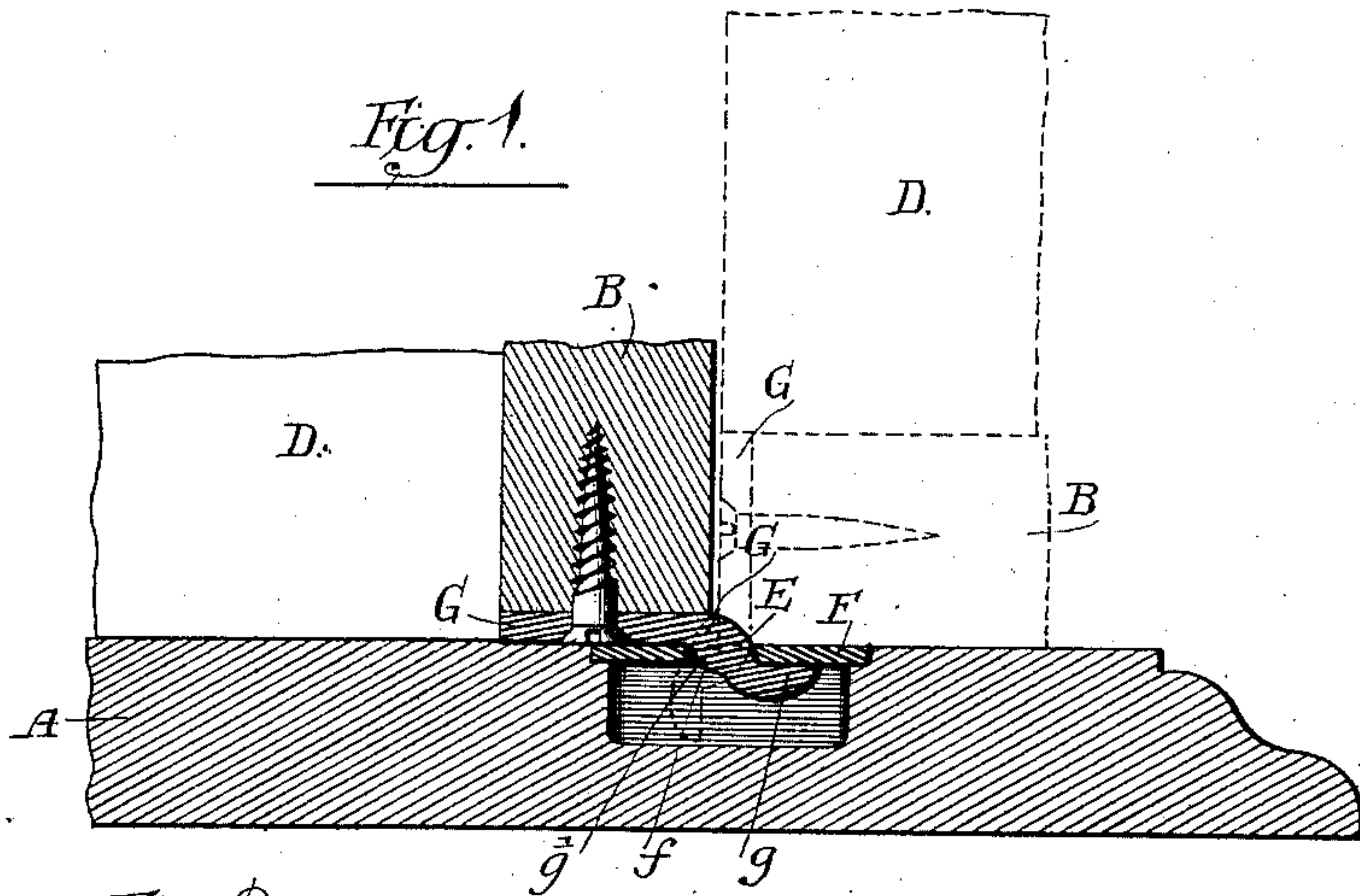


Fig. 2.

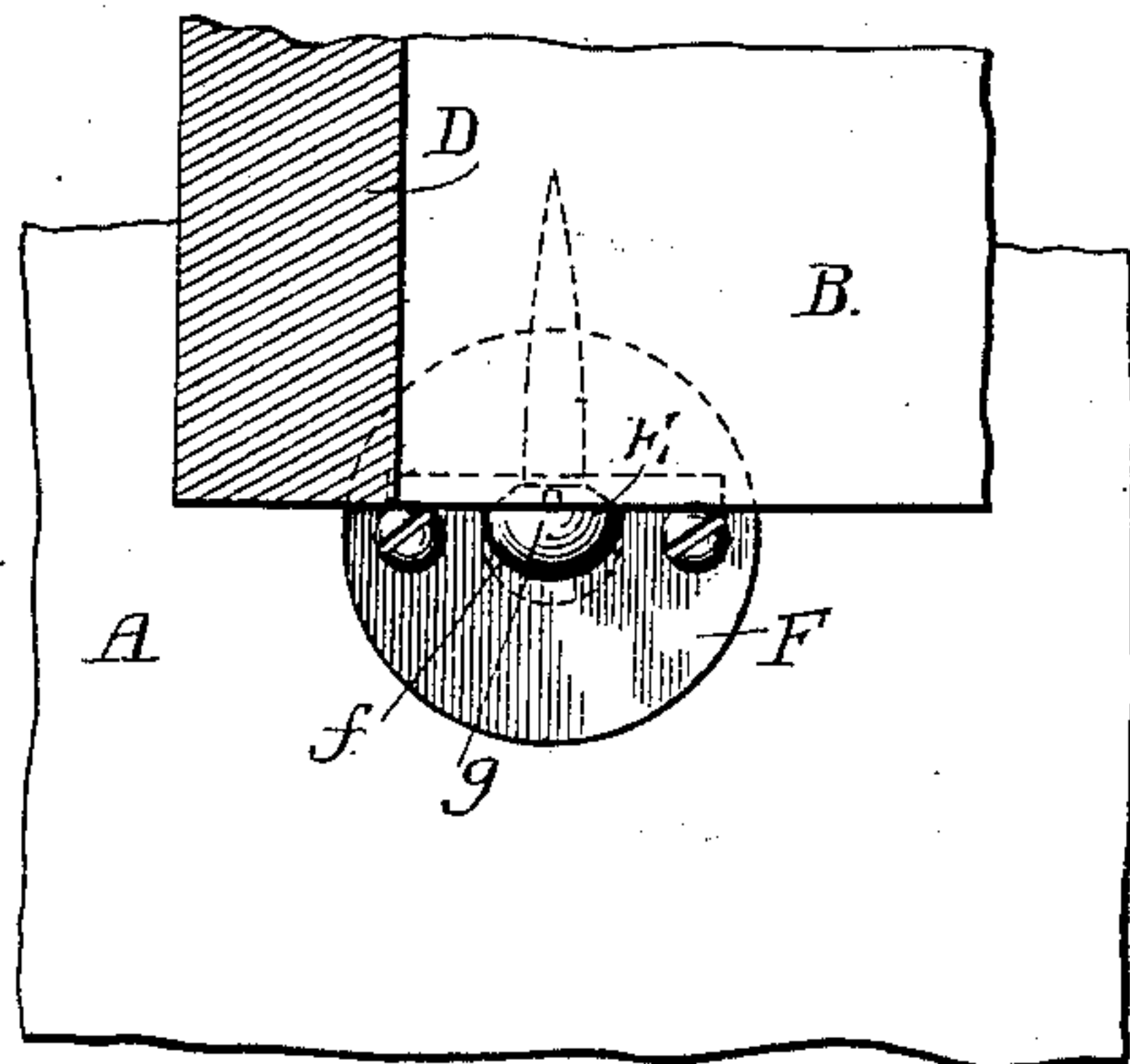


Fig. 3.

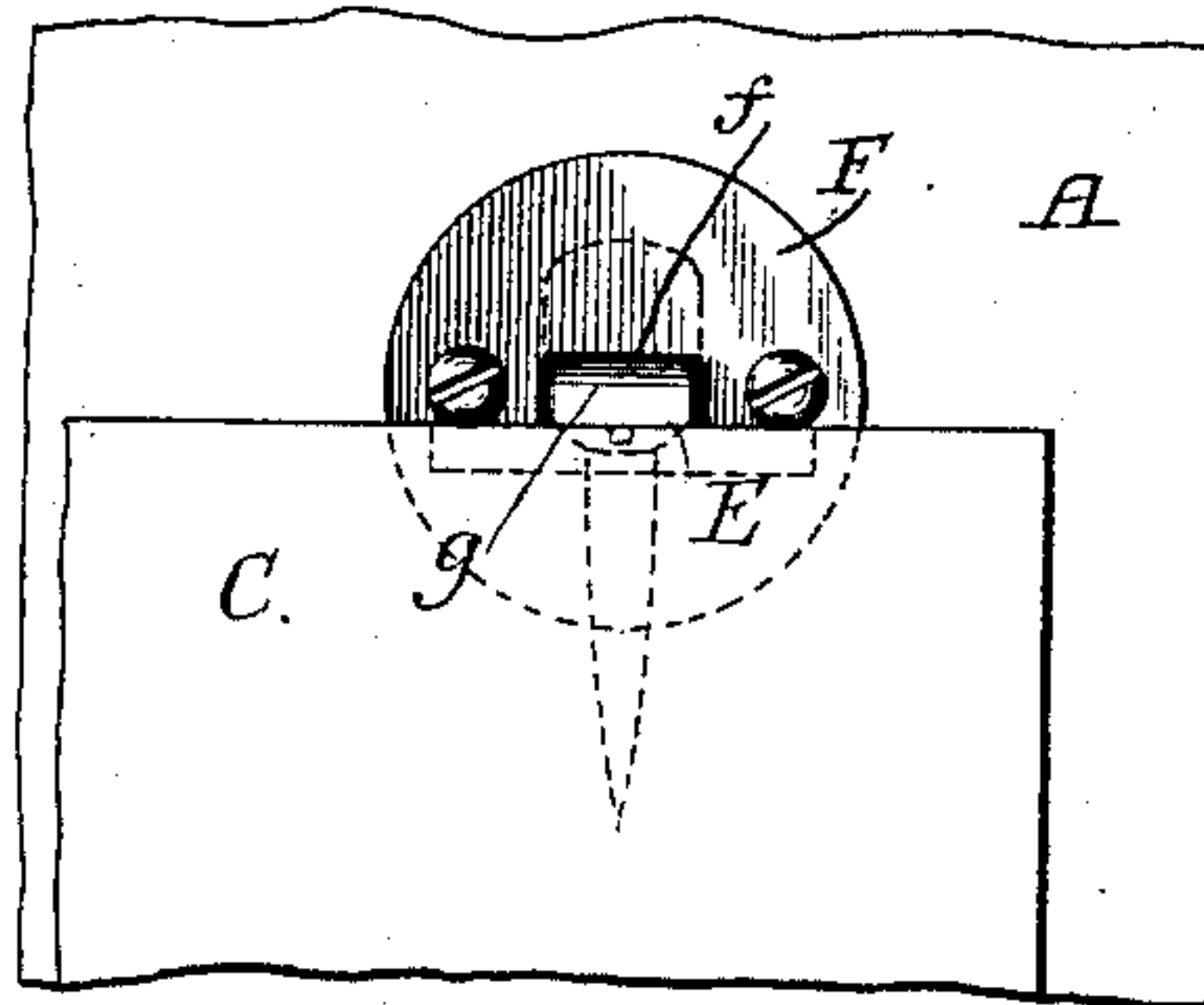


Fig. 4.

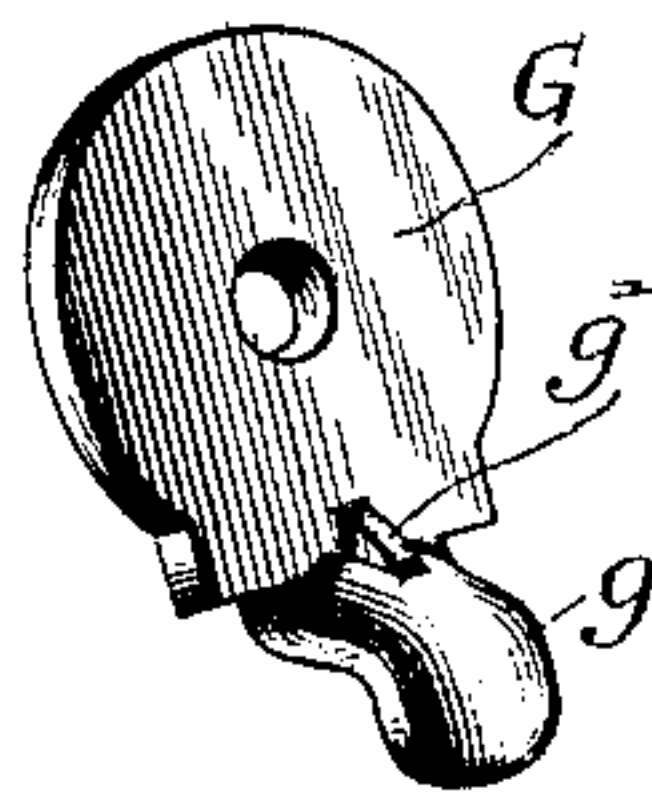
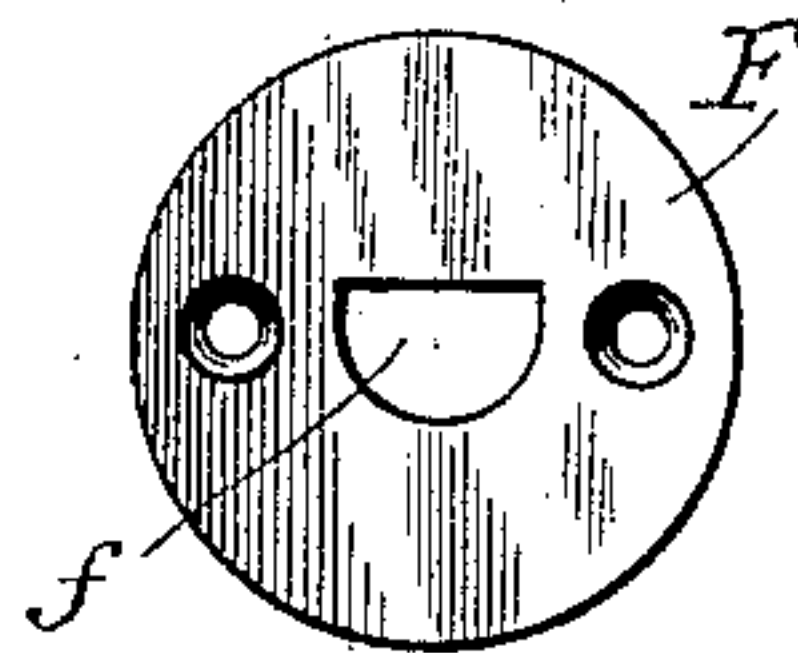


Fig. 5.



Witnesses:-

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# UNITED STATES PATENT OFFICE.

GEORGE LYMAN GRAY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NEW HOME SEWING MACHINE COMPANY, OF ORANGE, MASSACHUSETTS.

## HOOK-AND-EYE HINGE FOR SEWING-MACHINE TOPS.

SPECIFICATION forming part of Letters Patent No. 367,616, dated August 2, 1887.

Application filed March 22, 1887. Serial No. 231,895. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE LYMAN GRAY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Hook-and-Eye Hinges for Sewing-Machine Tops; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of  
10 reference marked thereon, which form a part of this specification.

This invention relates to "hook-and-eye" hinges for detachably hinging sewing-machine covers to the tables or tops of the machines;  
15 and it has for its object to provide a construction by which the cover is more securely or rigidly held to the machine-top when said cover is fully open, but which allows the cover to be detached from the machine-top when the cover  
20 is in a partially-raised position.

The nature of the invention will be fully understood from the following description and claims.

In the drawings, Figure 1 is a fragmentary  
25 longitudinal vertical section of a sewing-machine-table top and cover, taken centrally through the hinge, showing in full lines the cover closed and in dotted lines the cover open. Fig. 2 is a view looking downward upon frag-  
30 ments of the machine top and cover, showing the position of the parts of the hinge when the cover is open and the end board of the cover lies flat upon the machine-top, as indicated by dotted lines of Fig. 1. Fig. 3 is a view look-  
35 ing down upon fragments of the machine top and cover, showing the cover closed down upon the top. Fig. 4 is a perspective of the hook-plate of the hinge detached, and Fig. 5 is a full view of the eye-plate of the hinge detached.

40 A represents a sewing-machine top; B, the end board of a cover of the ordinary construction, (a box open on one side to set down over the metal work above the top or table.)

C is the top board of the cover, and D one  
45 of the side boards of the cover.

E is the hinge, composed of the eye-plate F, secured to the machine-table, and the hook-plate G, secured to the edge of the cover end board, B. The eye-plate F is a circular plate  
50 struck from sheet metal and having a hole, *f*,

through its middle, which is straight across one side and semicircular on its opposite side, as plainly shown in Fig. 5, being little more than half a circle. The hook-plate G is of cast metal, and is provided on one margin with the  
55 doubly-bent hook *g*. More particularly described, the hook *g* is entirely outside the body of the plate G, being first deflected in a curved direction to one side, and longer in this direc-  
60 tion than the width of the hole *f* in the eye-plate, and then extended in a plane parallel with the body, as shown. The plate G is set in the edge of the end board, B, of the cover, and the distance between the lower surface of the plate G and the upper surface of the par-  
65 allel part of the projection *g*, as seen in Fig. 1, is equal to the thickness of the eye-plate F. The outer or lower surface of the projection *g* (having reference now to the position shown in full lines in Fig. 1) is transversely convex, as  
70 indicated by shading in Fig. 4, so that when the cover is raised and the plate G stands in the position shown in dotted lines in Fig. 1 the hook *g* conforms to the curved edge of the hole *f* in the eye-plate and rises within and  
75 practically fills said hole, while it also extends laterally beyond the hole beneath the eye-plate. By this rounded construction of the outer surface of the hook and the semicircular form of that margin of the hole *f* against which said  
80 surface of the hook bears the cover, when opened and thrown back, brings the hook to a central position in the hole and to a bearing on both curved and straight sides of the hole, and by employing two such hinges the cover  
85 is firmly held from lateral movement—such as may obviously take place in the use of a rectangular hole and hook—and is prevented from rattling or from being disengaged or misplaced in the use of the machine. At the same time  
90 the cover can be freely lifted off the machine-top when said cover is raised to an inclined position, or is, say, half-way between a fully-opened or fully-closed position. When the cover is fully closed, the extreme ends of the  
95 hooks *g* project beneath the eye-plate beyond the straight side of the holes *f*, and with the aid of a lock or catch at the opposite end of the cover the latter may be held in place, as in the use of other generally similar hinges here- 100



tofore employed. In order that the hook *g* may fill the hole *f* of the eye-plate when the cover is closed as well as when it is opened, and the two hinges may operate to hold the  
5 cover more steadily when closed as well as when open without reliance upon the lock for this purpose, the hook may be thickened or provided with a fillet, *g'*, at its base, which shall bear against the curved side of the hole  
10 *f*, while the horizontally-opposite side of the hook bears against the opposite side of the hole.

Of course the eye-plate might be cast as well as the hook-plate; but it could not be so accurately made by casting, while, on the other  
15 hand, the way to most economically give the hook of the plate *G* the desired convex form on its outer surface is by casting.

I am aware that a hook-plate in similar  
20 hinges has been constructed of sheet metal, and therefore of uniform thickness, but bent in the same directions as the doubly-bent hook *g*, and that such a hook-plate has been used in combination with an eye-plate having a sub-  
25 stantially rectangular hole therefor, and that the hook has been apertured to receive a downwardly-bent projection at one side of the hole in the eye-plate. I do not claim either feature of such construction.

30 I am also aware that a similar hook-plate

has been covered with a thick body of india-rubber to render the hinge noiseless and prevent injury. This also is not my invention.

I claim as my invention—

1. The hook-and-eye hinge described, comprising an eye-plate provided with a hole having a semicircular side, and a plate, *G*, provided with a doubly-bent hook, as shown, having its outer or longitudinally-curved surface transversely convex, substantially as and for the  
40 purpose set forth.

2. The hook-and-eye hinge described, comprising an eye-plate provided with a hole having a semicircular side, and a plate, *G*, provided with a doubly-bent hook, as shown, having its  
45 outer or longitudinally-curved surface convex, so as to fill the hole in the eye-plate when the two plates are at right angles to each other, and also provided with a projection at *g'*, whereby the hook fills the hole from side to  
50 side when the plates are parallel or the hinge is closed, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

GEORGE LYMAN GRAY.

Witnesses:

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