

(No Model.)

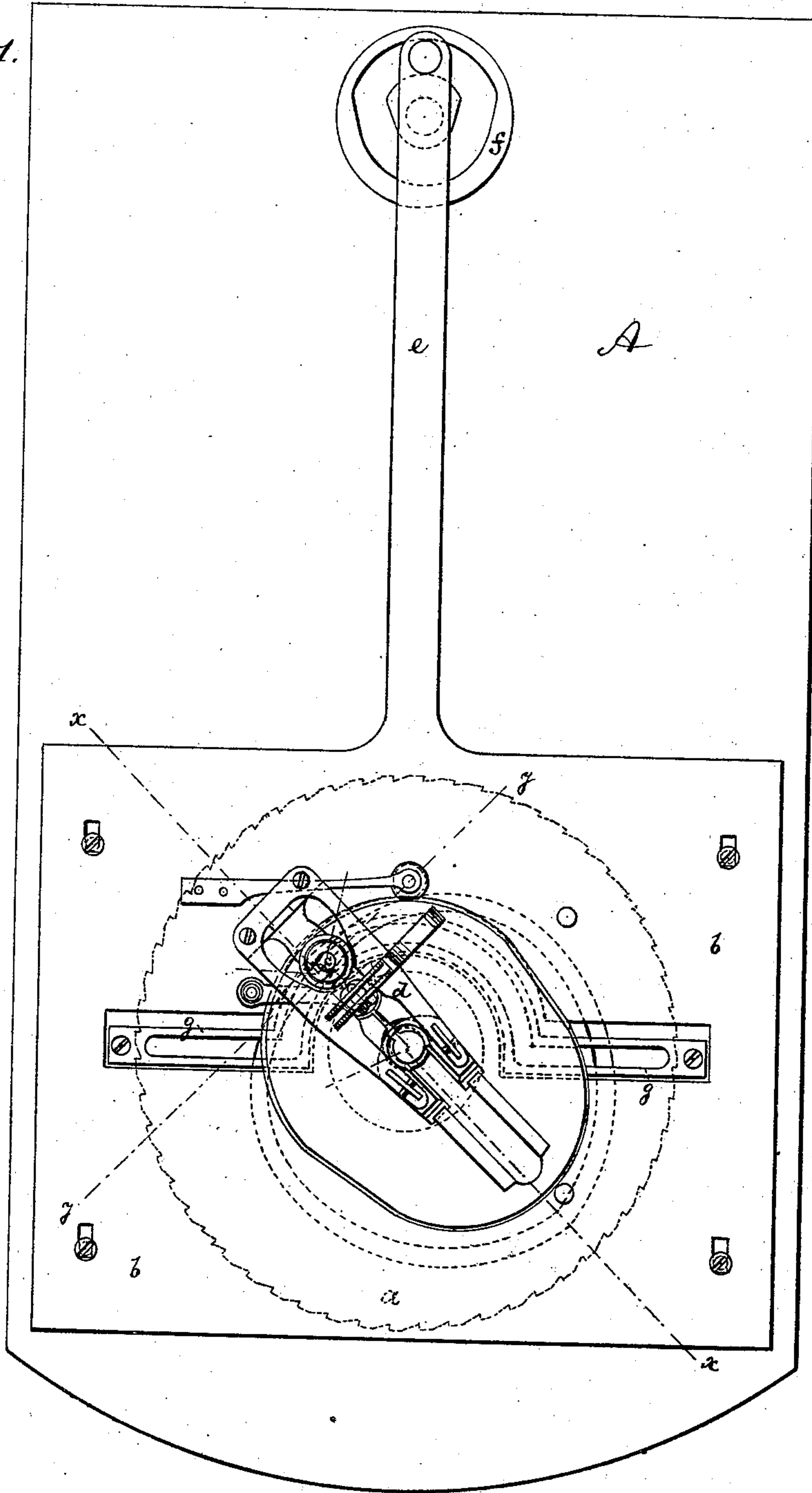
2 Sheets—Sheet 1.

F. E. SCHMIDT.  
BUTTON HOLE SEWING MACHINE.

No. 272,160.

Patented Feb. 13, 1883.

*Fig. 1.*



WITNESSES =

*Jos. J. McInerney*  
*Lermann Koster*

INVENTOR =

*F. E. Schmidt*  
*by his attorney*  
*Frank B. Miesner*

(No Model.)

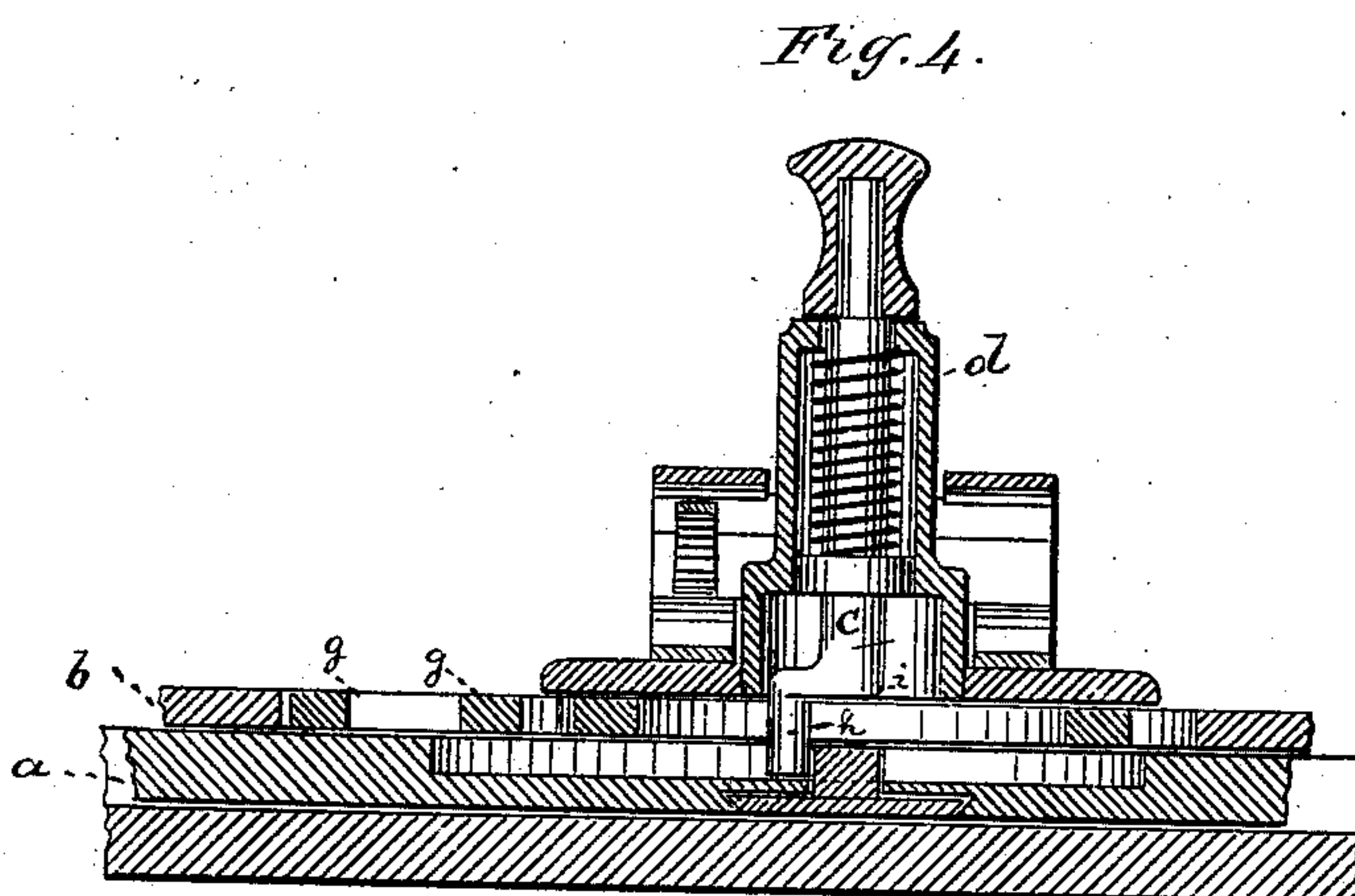
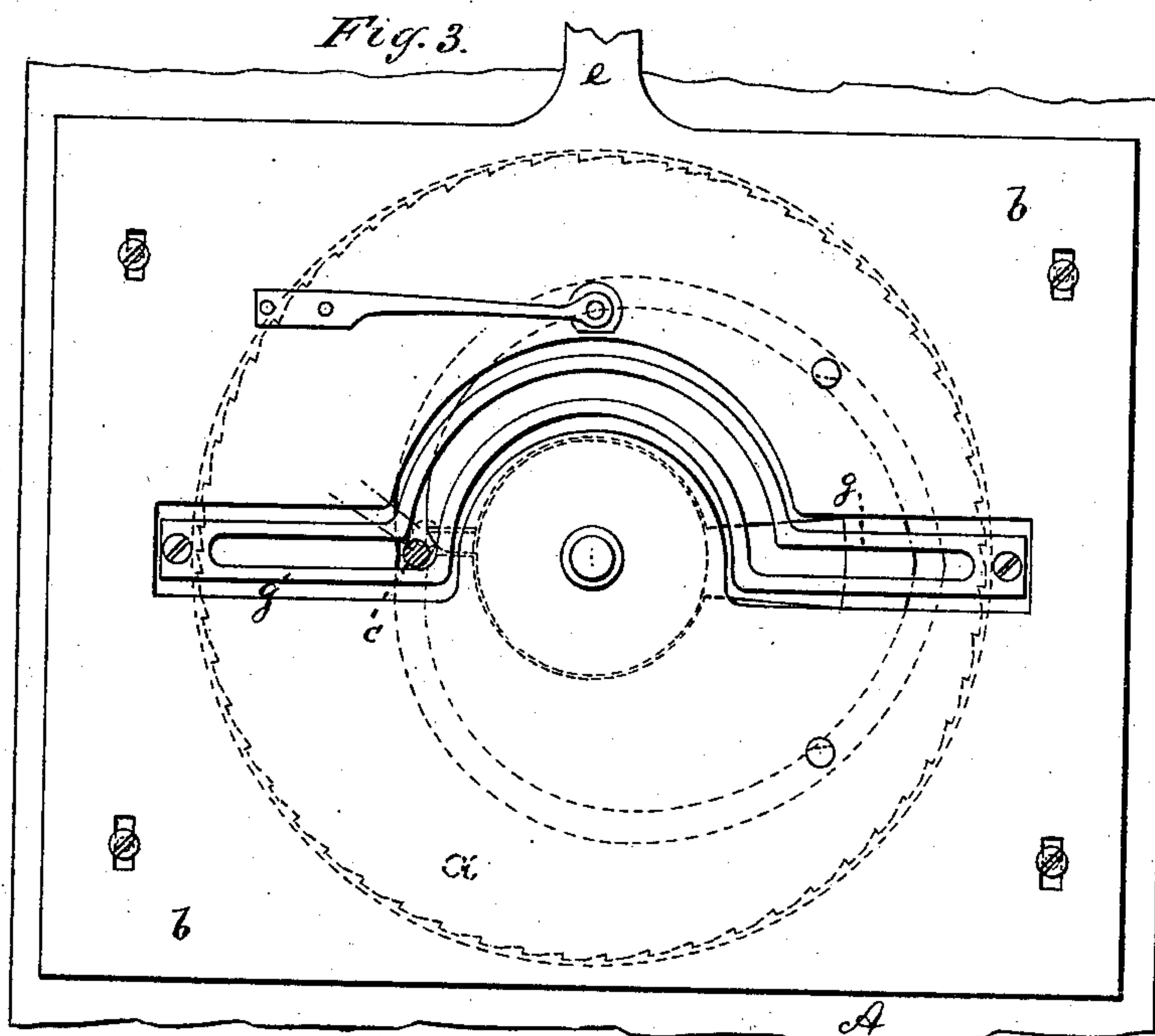
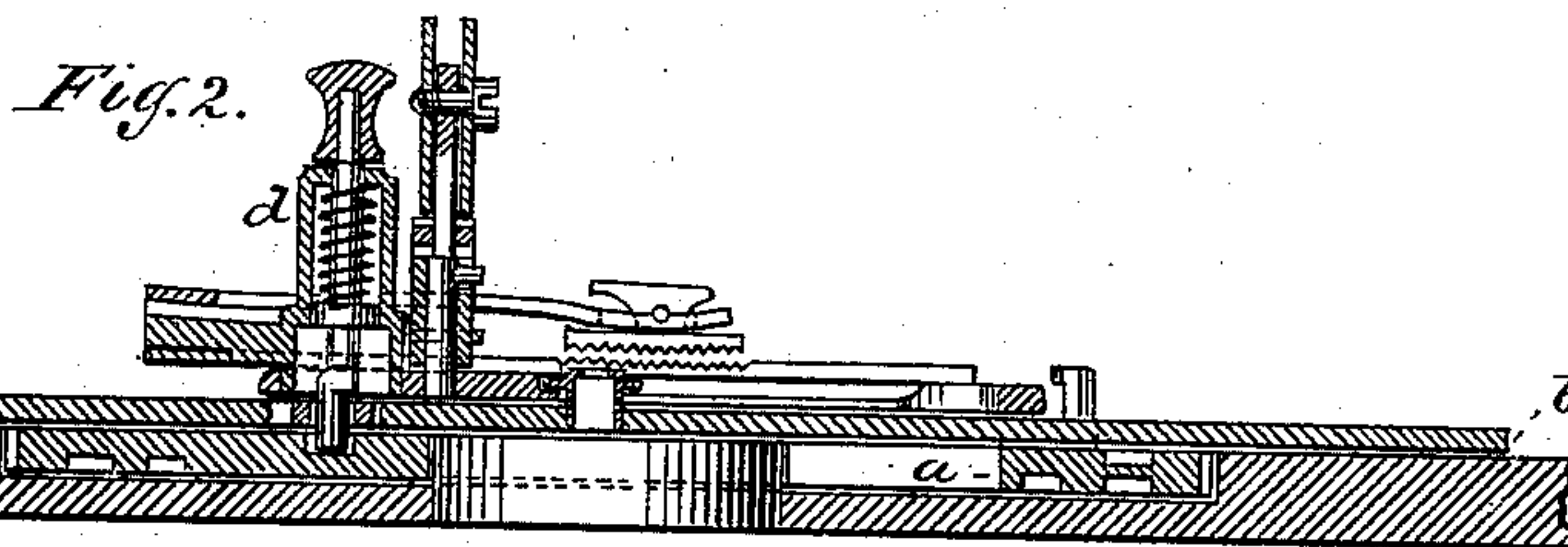
2 Sheets—Sheet 2.

F. E. SCHMIDT.

BUTTON HOLE SEWING MACHINE.

No. 272,160.

Patented Feb. 13, 1883.



WITNESSES =  
*Jos. J. McGinley*  
*Hermann Foster*

INVENTOR =  
*F. E. Schmidt*  
by his attorney  
*Dr. A. B. Nielsen*



# UNITED STATES PATENT OFFICE.

FRIEDRICH E. SCHMIDT, OF BROOKLYN, NEW YORK.

## BUTTON-HOLE SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 272,160, dated February 13, 1883.

Application filed December 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH E. SCHMIDT, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful  
5 Improvement in Button-Hole Sewing-Machines, of which the following specification is a full, clear, and exact description.

This invention has for its object to so construct a button-hole sewing-machine that the  
10 lateral motion of the needle may be dispensed with, and any needle may be used that makes a simple up-and-down movement.

My invention consists principally in imparting to the work-plate and to the cloth-clamp  
15 the reciprocating movement, while at the same time the slot that guides the pin of the clamp remains stationary. In order to carry this into effect, I substitute for the straight guide-pin of the clamp a bent guide-pin, and have  
20 devised the other details of improvement hereinafter more fully pointed out.

In the accompanying sheets of drawings, Figure 1, Sheet 1, is a top view of the table of a button-hole sewing-machine with the work-  
25 plate and clamp in position. Fig. 2, Sheet 2, is a vertical section on line *x x*, Fig. 1; Fig. 3, Sheet 2, a top view of the work-plate with the clamp removed; Fig. 4, Sheet 2, a vertical section on line *y y*, Fig. 1, on an enlarged scale.  
30 Similar letters of reference indicate corresponding parts in all the figures.

The letter A represents the top plate or table of a button-hole sewing-machine.

*a* is the feed-wheel secured to its under side,  
35 and to which alternately fast and slow motion is imparted in the usual manner, and which is provided at its upper side with an eccentric groove, as usual. Above the feed-wheel *a* is the work-plate *b*. This work-plate has heretofore  
40 tofore been stationary and provided with a slot straight at its two ends and semicircular in its middle. Through this slot and into the upper groove of the feed-wheel passed the end of the pin *c* of the cloth-clamp *d*, so that as the  
45 feed-wheel was revolved the pin, pushed by the eccentric groove of the feed-wheel, traveled along the slot in the feed-plate. The clamp, following the motion of its pin, placed the cloth in position in relation to the needle for  
50 receiving the three parts of the button-hole—

to wit, the first straight side, the eye, and the second straight side. Now, such a construction was used in connection with a needle which reciprocated horizontally as well as moved up and down. I propose to dispense with the horizontal reciprocating motion of the needle. For this purpose my work-plate *b* is not rigidly attached to the table A, but loosely laid thereon, and provided with an arm, *e*, through which reciprocating motion is imparted to it from a cam, *f*. The work-plate may be guided by pins or otherwise to perform a proper rectilinear movement. But while the work-plate reciprocates and the cloth-clamp *d*, placed and held thereon in the customary manner, is carried with it, the ordinary forward, simicircular, and backward movement must be imparted to the cloth clamp. If the guide-slot in the work plate were to participate in the lateral movement, this could not be effected. I therefore provide the work-plate with a large central slot of the outline of the customary work-plate slot, but considerably wider. Within this slot I rigidly secure to the table A a narrow plate, *g*, which is provided with the proper work-plate slot of the customary size. The width of the slot in the work-plate *b* is such that the latter may reciprocate without coming in conflict with the plate *g*. Through the slot of the plate *g* and into the eccentric groove of the feed-wheel *a* passes the pin *c* of the clamp *d*. This pin is made with a bend, as shown in Fig. 4—that is to say, it passes first straight downward, is then bent horizontally, and then again passes straight down-  
8 ward. Of course the pin can revolve as usual around its longitudinal axis. Now, the lower part, *h*, of the pin passes through the slot of the plate *g* into the eccentric groove of the feed-wheel. As the feed-wheel is revolved  
90 said pin is gradually caused to travel along said slot, carrying the clamp *d* with it, as customary. At the same time reciprocating motion is imparted to the work-plate *b*, and as the clamp is held thereon it will be carried with it.  
95 The bend *i* of the pin *c* will be caused to describe short curves from right to left, and vice versa, thus producing sufficient lateral play to permit the proper lateral motion of the upper part of the pin and of the clamp. At the same

time no lateral play will be imparted to the lower end, *h*, of the pin, which will travel, as customary, along the guide-slot of the plate *g*. In this way reciprocating motion is imparted 5 to the work-plate, and reciprocating, as well as the old forward motion, is imparted to the clamp.

I claim as my invention—

1. The combination, in a button-hole sewing-machine, of a work-plate, *b*, to which reciprocating motion can be imparted, with a stationary guide-plate, *g*, and with the clamp *d*, substantially as specified.

2. The combination of the reciprocating 15 work-plate *b*, having arm *e*, with cam *f*, plate *g*, and clamp *d*, substantially as specified.

3. The combination of a slotted work-plate, *b*, to which reciprocating motion may be imparted, with the stationary slotted plate *g*, and with the clamp *d*, having bent pin *c*, substantially as specified. 20

4. The combination of the slotted work-plate *b*, having arm *e*, with cam *f*, slotted plate *g*, and with the clamp *d*, having bent pin *c*, all arranged substantially as and for the purpose 25 specified.

FRIEDRICH E. SCHMIDT.

Witnesses:

JOS. J. MCGINLEY,  
F. V. BRIESEN.