

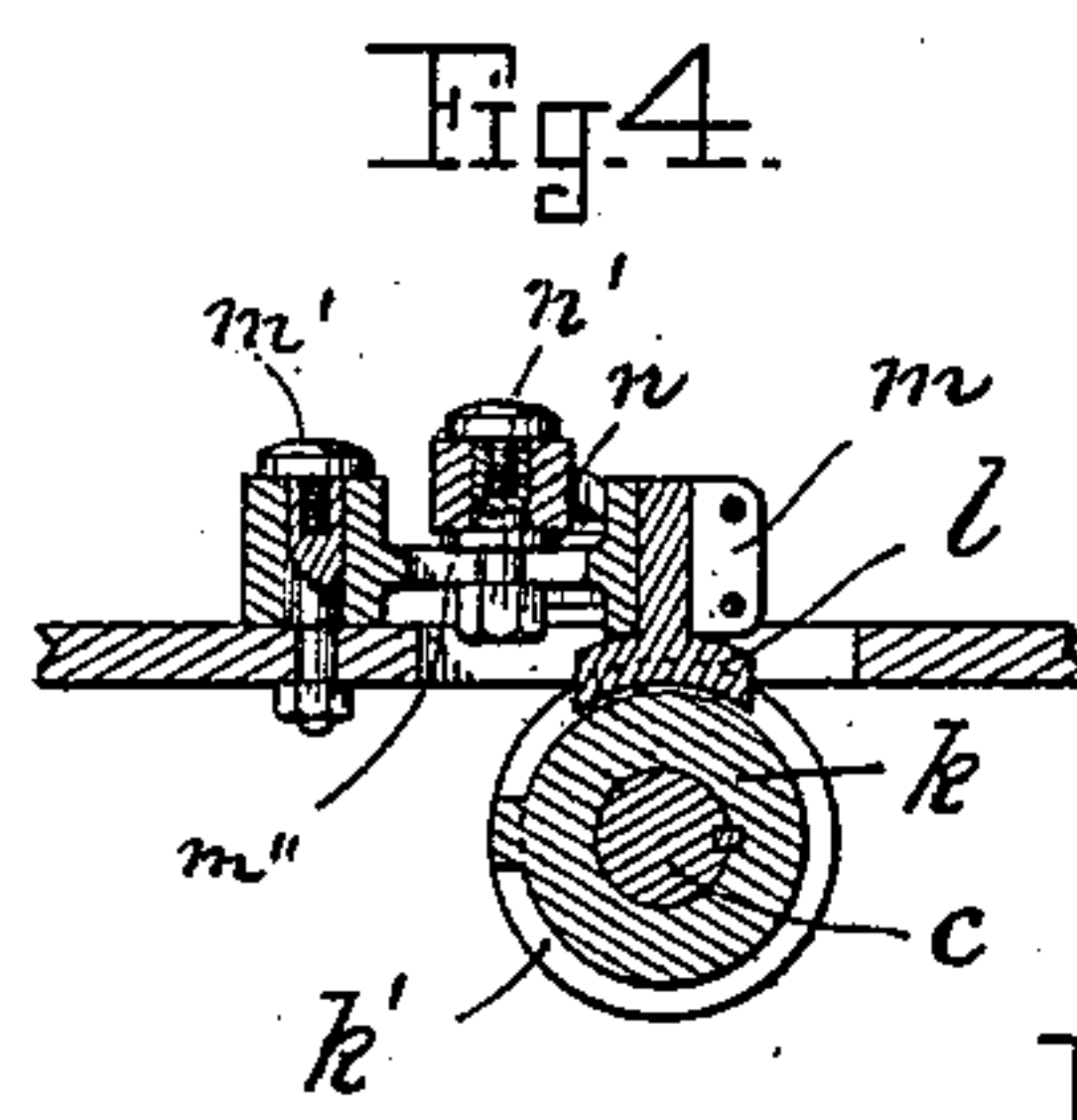
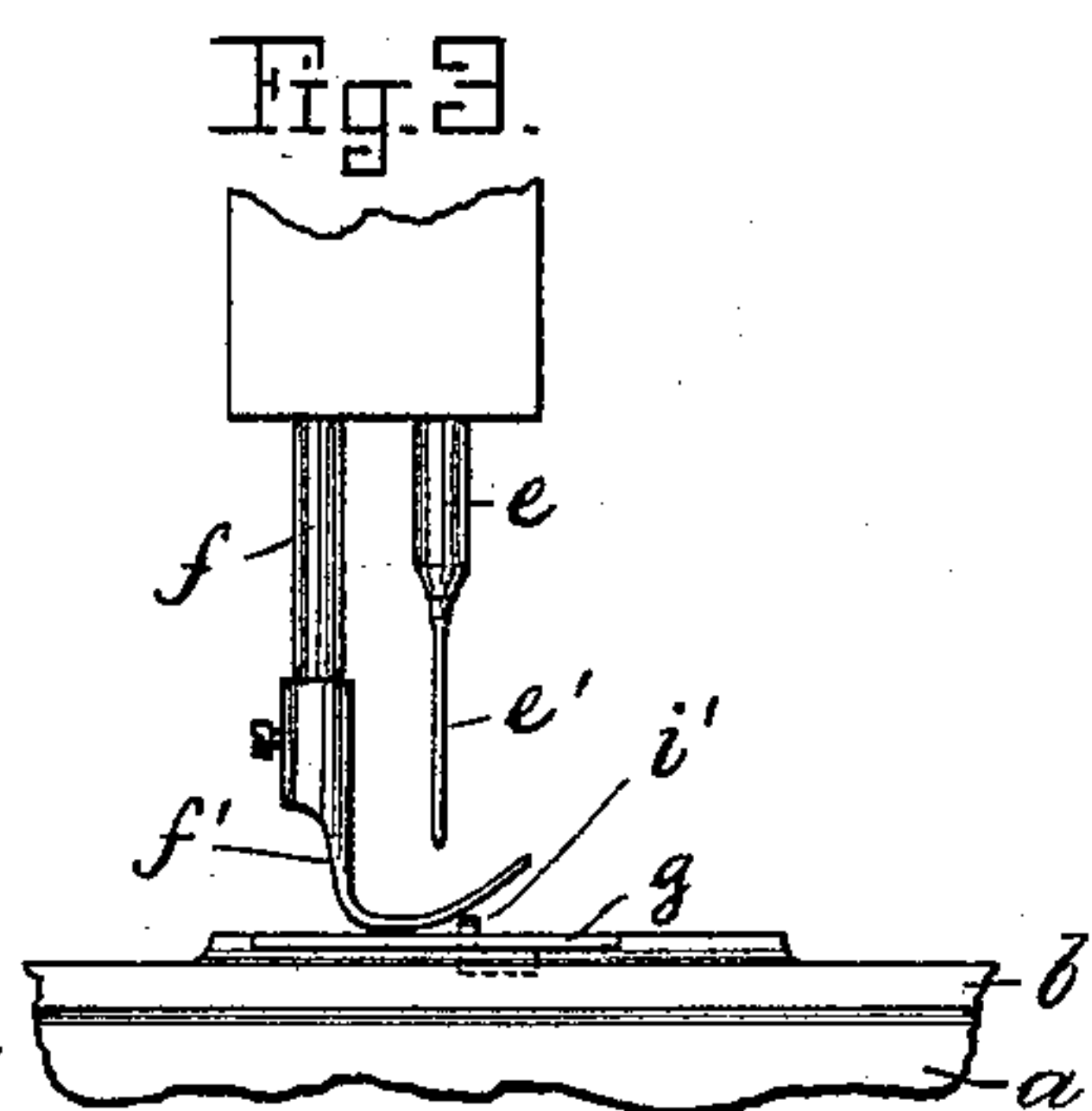
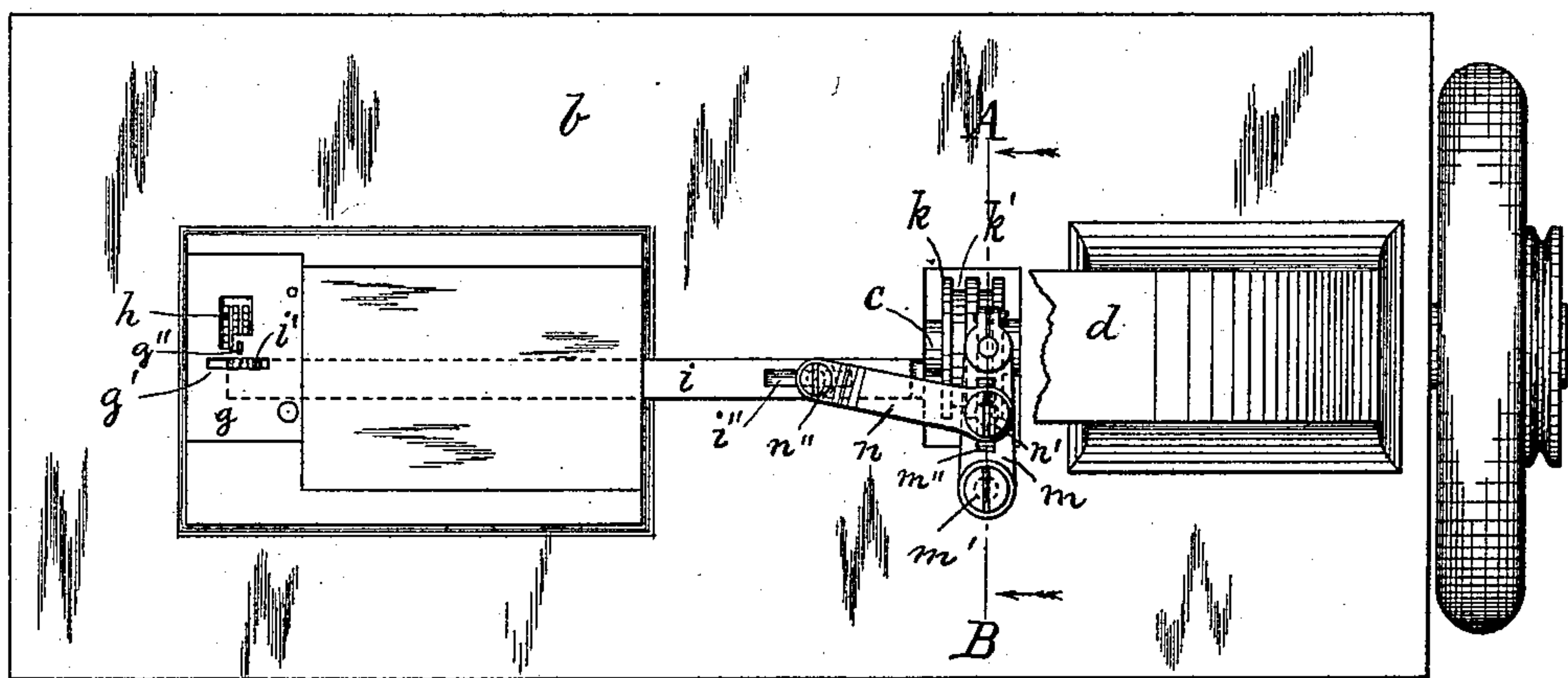
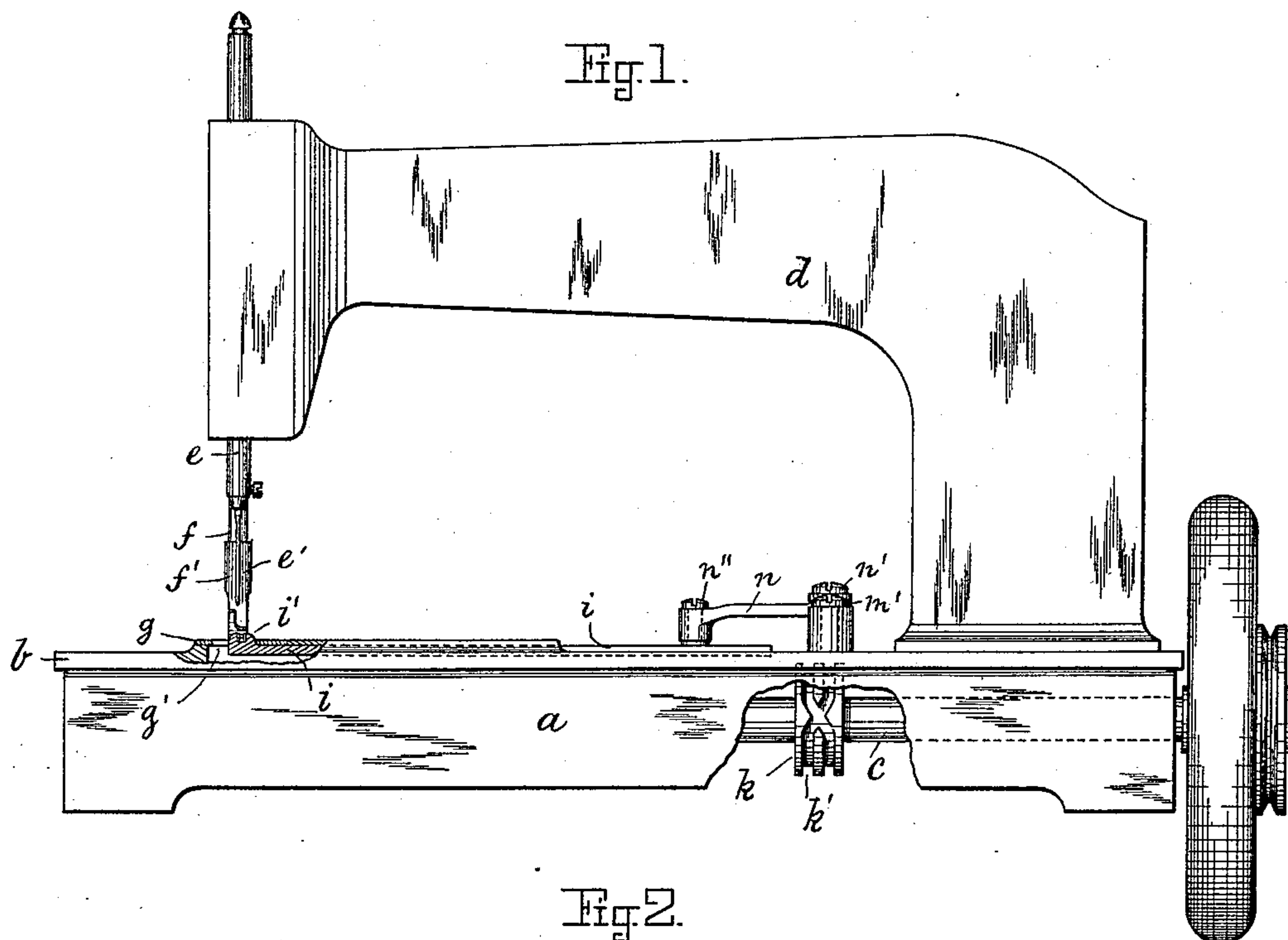
(No Model.)

G. S. HILL.

SEWING MACHINE FOR FINISHING BUTTON HOLE PIECES.

No. 400,914.

Patented Apr. 9, 1889.



Witnesses.

Henry Chadbourne.

Charles H. Figg.

Inventor

George S. Hill
by Alvan Audrein his atty

UNITED STATES PATENT OFFICE.

GEORGE S. HILL, OF LYNN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS,
TO JOHN REECE, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE FOR FINISHING BUTTON-HOLE PIECES.

SPECIFICATION forming part of Letters Patent No. 400,914, dated April 9, 1889.

Application filed April 8, 1887. Serial No. 234,112. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. HILL, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Sewing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in sewing-machines; and it consists in mechanism for "whipping" down the ends of threads left on the under side of shoe-uppers or other fabrics in which button-holes have been stitched; and the invention is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a side elevation of a sewing-machine provided with my improvement. Fig. 2 represents a plan view of the machine, showing the goose-neck as removed. Fig. 3 represents a partial end view showing the needle and presser-foot; and Fig. 4 represents a cross-section on the line A B, shown in Fig. 2.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In stitching button-holes on shoe-uppers or other fabrics by means of button-hole sewing-machines there is generally left at the termination of the button-hole on the under side of the fabric a loose end about an inch (more or less) in length, and such ends have generally been whipped down by hand after the button-holes have been finished.

The object of my present invention is to "whip down"—that is, to sew and secure—such loose threads by means of a sewing-machine to the fabric, and I therefore construct my invention as follows:

a is the base of an ordinary shuttle sewing-machine, on which *b* is the work-supporting plate; *c*, the rotary driving-shaft; *d*, the goose-neck; *e*, the vertically-reciprocating needle-bar with its eye-pointed upper-thread-carrying needle *e'*; *f*, the presser-foot bar with its presser-foot *f'*, and *g* the perforated needle-plate, as is common in sewing-machines. A shuttle carrying the lower thread is arranged below the needle-plate *g* in the usual manner, such be-

ing, however, not shown in the drawings, as it forms no part of my present invention, and is too well known in the art to be represented or described. *h* in Fig. 2 represents the four-motion feed-dog for automatically feeding the material in the usual manner.

In suitable guides in the plate *b*, or guides attached to it, I locate the bar *i*, which has in its forward end a thread-carrying forked piece, *i'*, that projects upwardly through a slot, *g'*, in the needle-plate *g*, as shown, said slot being made in front of and in close proximity to the needle-hole *g''*, as shown in Fig. 2. The bar *i* is automatically reciprocated in a direction parallel to the driving-shaft *c* and at a right angle to the path of the feed by the following mechanism: To the rotary driving-shaft *c* is secured the cam *k*, having on its periphery the return-groove *k'*. (Shown in Figs. 1 and 4.) In said groove projects the tooth *l*, the shank of which is clamped or otherwise attached to the lever *m*; or, if so desired, the tooth *l* may be made in one piece with said lever *m*, although I prefer to make it separate from it and secure it to said lever, so that said tooth may be easily renewed if worn. The lever *m* is pivoted at *m'* to the plate *b*, as shown in Figs. 2 and 4.

The lever *m* and thread-carrying bar *i* are united by means of the connecting rod or link *n*, that is pivoted to said parts by means of the pins, bolts, or studs *n' n''*, respectively; and for the purpose of adjusting and regulating the amount of throw on the bar *i*, I provide the bar *i* with a slot, *i''*, in which the pin *n''* is adjustable, and I make a similar slot, *m''*, in the lever *m*, in which the pin or stud *n'* is adjustable, as shown in Figs. 2 and 4.

In using the device the machine is set in operation and the material is fed forward, as usual, the loose threads to be whipped down being on the under side and next to the needle-plate *g*, and as a row of stitches is being sewed parallel with and on one side of the button-holes the loose threads on the under side of the fabric are caused to enter the forked end *i'* of the reciprocating bar *i*, and thus alternately carried to opposite sides of the needle and the stitches that are being made, by which the loose ends aforesaid are

inclosed and covered, or, as it is termed, "whipped down" by the stitches thus made.

By removing the bar *i* the machine may be used as an ordinary sewing-machine.

5 What I wish to secure by Letters Patent, and claim, is—

1. The reciprocating bar *i*, having the forked thread-guide *i'* in its outer end projecting upwardly through the needle-plate, combined
10 with the vertically-reciprocating needle *e'* and needle-plate *g* with its perforation for the thread-guide for the purpose of alternately carrying the loose threads, as described, to opposite sides of the stitches being made, for
15 the purpose set forth.

2. The rotary shaft *c* and its grooved cam *k* *k'*, combined with the reciprocating bar *i* and its forked thread-guide *i'*, and the intermediate connecting mechanism, consisting of the
20 connecting-rod *n*, lever *m*, pivoted to plate *b*

and having tooth or projection *l*, engaging in the groove *k'* of said cam *k*, as and for the purpose set forth.

3. The rotary shaft *c* and its grooved cam *k* *k'*, the rock-lever *m* and its tooth or projection *l*, and the bar *i* with its forked thread-guide *i'*, combined with the connecting-rod *n*,
25 its studs or pins *n' n''*, and slots *i''* and *m'* in the bar *i* and lever *m*, respectively, for the purpose of regulating the amount of throw on
30 bar *i*, as herein set forth and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of April, A. D. 1887.

GEORGE S. HILL.

Witnesses:

ALBAN ANDRÉN,

HENRY CHADBURN.