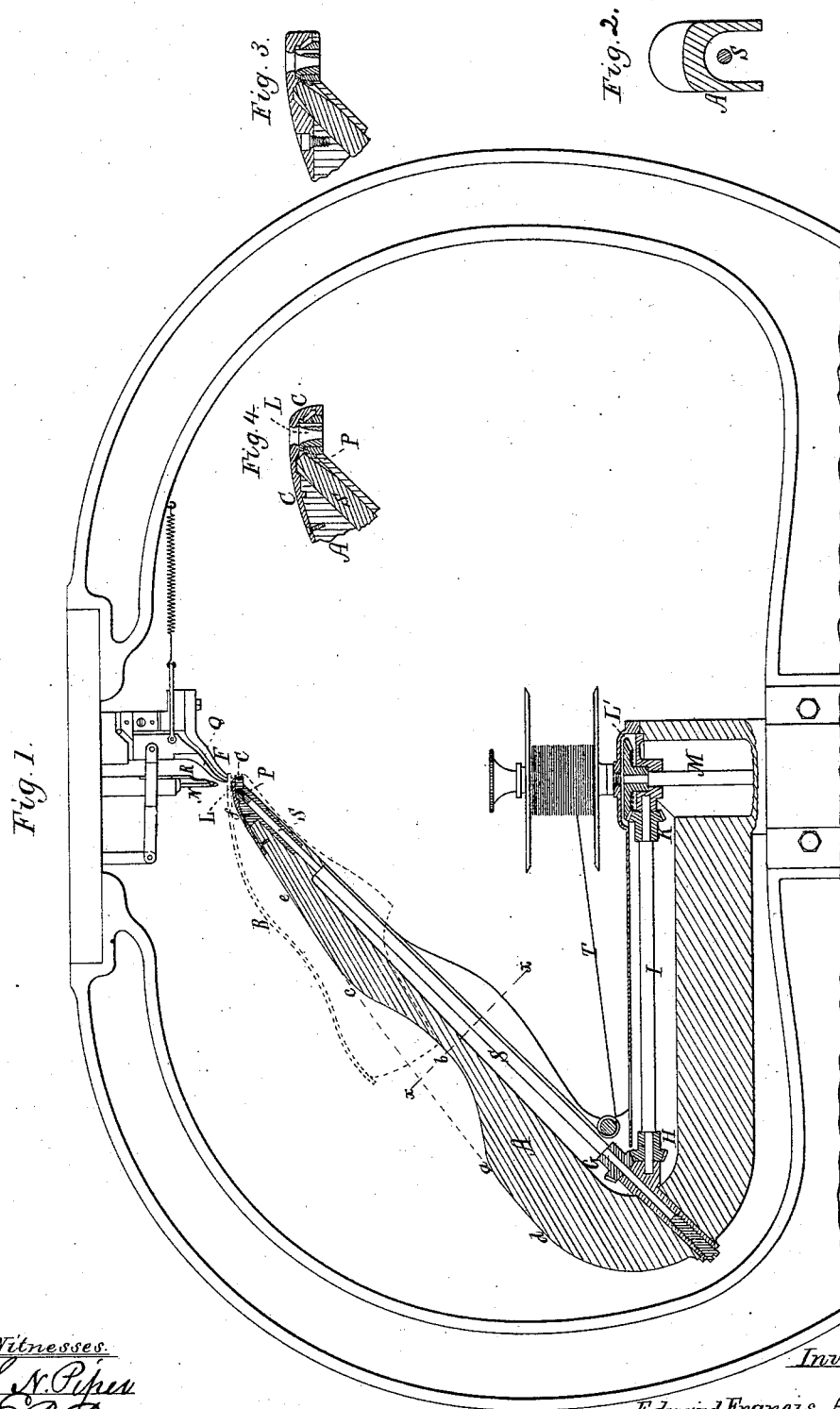


(No Model.)

E. F. ARNOLD.  
SHOE SOLE SEWING MACHINE.

No. 304,689.

Patented Sept. 9, 1884.



Witnesses.  
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by *N. M. Eddy* att'y.

# UNITED STATES PATENT OFFICE.

EDWARD FRANCIS ARNOLD, OF NORTH ABINGTON, MASSACHUSETTS,  
ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF AND WILLIAM B.  
ARNOLD, OF SAME PLACE.

## SHOE-SOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,689, dated September 9, 1884.

Application filed May 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD FRANCIS ARNOLD, of North Abington, in the county of Plymouth, of the State of Massachusetts, have  
5 invented a new and useful Improvement in Shoe-Sole-Sewing Machines; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

10 Figure 1 is a longitudinal and vertical section of part of a sewing-machine embracing my invention, the nature of which is defined in the claims hereinafter presented. Fig. 2 is a transverse and median section of the horn  
15 for supporting the looper and the shaft of its operative pinion on line *x x*, Fig. 1. Figs. 3 and 4 are hereinafter explained.

Prior to my invention the horn, when provided with a straight shaft extending longitudinally within it throughout nearly its entire length, as shown in Fig. 1, has been arched  
20 convexly on its upper edge, lengthwise of it, from its heel to its toe.

In carrying out my invention I make the  
25 horn shown at A in Fig. 1, with a recess or notch or reversed arch in its upper part, as shown at *a b c*, such recess being to allow the heel portion of the shoe (shown in dotted lines at B) to extend down within such recess while  
30 the top portion of the sole of such shoe may be in the act of being sewed to the upper and insole.

The convex curved line *d a c e f* represents the ordinary curve of the upper edge of the  
35 horn, from which it will be seen that without the notch, recess, or depression *a b c* in the horn the heel portion of the shoe cannot be depressed below the line *a e* without binding or breaking down or crimping the leather of the  
40 upper at the heel, which is very objectionable for several reasons, and in ordinary sole-sewing machines takes place generally while the sole is being sewed, near its toe, as the shoe has to be depressed at the heel, in order  
45 to get the horn sufficiently up into the toe part of the upper. I also have the horn at its upper end or part to enter the toe of the upper of a shoe provided with a cap curved or arched directly over and in front of the  
50 looper, (see Fig. 4,) instead of having the front of the cap at right angles, or thereabout, to

the upper surface of the cap, as it is usually made. With my improvement last mentioned the horn can be pressed so closely up into the toe of the upper as to enable the whole toe  
55 portion of the sole to be sewed by the machine to the upper, which cannot generally be accomplished when the end portion of the cap of the horn is, as shown in Fig. 3, at a right angle, or about so, to the upper edge of the  
60 said cap.

In the drawings, L represents the looper; L, the needle; R, the cast-off, and S the shaft of the bevel-pinion P of the looper, such shaft having integral with it at its upper end the  
65 said pinion. The looper is a beveled gear having a hole through it, as usual, for the passage of the waxed thread T. The cap extending over and down in front of the looper is shown at C. The arm or horn A is recessed  
70 or grooved along its under side to receive the shaft S, which is provided, as usual, with a bevel-gear, G, to engage with another such gear, H, carried by a horizontal shaft, I, that engages with the driving-shaft M by means of  
75 bevel-gears K and L'. The feeder is shown at F and the presser at Q, such feeder, presser, needle, cast-off, and looper, and their operative mechanisms being such as in ordinary use in the well-known sole-sewing machine termed  
80 the "McKay Sewing-Machine."

I claim in the said sole-sewing machine—

1. The horn provided with the revoluble straight shaft S for the looper-pinion, and with the notch or recess *a b c*, for receiving the  
85 heel portion of the upper of a shoe while the sole of such shoe at its toe is in the act of being sewed to the upper and the insole, such shaft and recess being arranged in such horn, substantially as set forth.

2. The horn having the looper and its revoluble straight shaft S, and the shoe-heel-receiving notch or recess *a b c*, arranged within it, (the said horn,) as set forth, in combination with the cap C, applied to the upper part of  
95 the horn and arched over and in front of the said looper, all being substantially as represented.

EDWARD FRANCIS ARNOLD.

Witnesses:

MOSES N. ARNOLD,  
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