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H. CORRALL ET AL

SEWING MACHINE ATTACHMENT

Filed Feb. 23, 1924

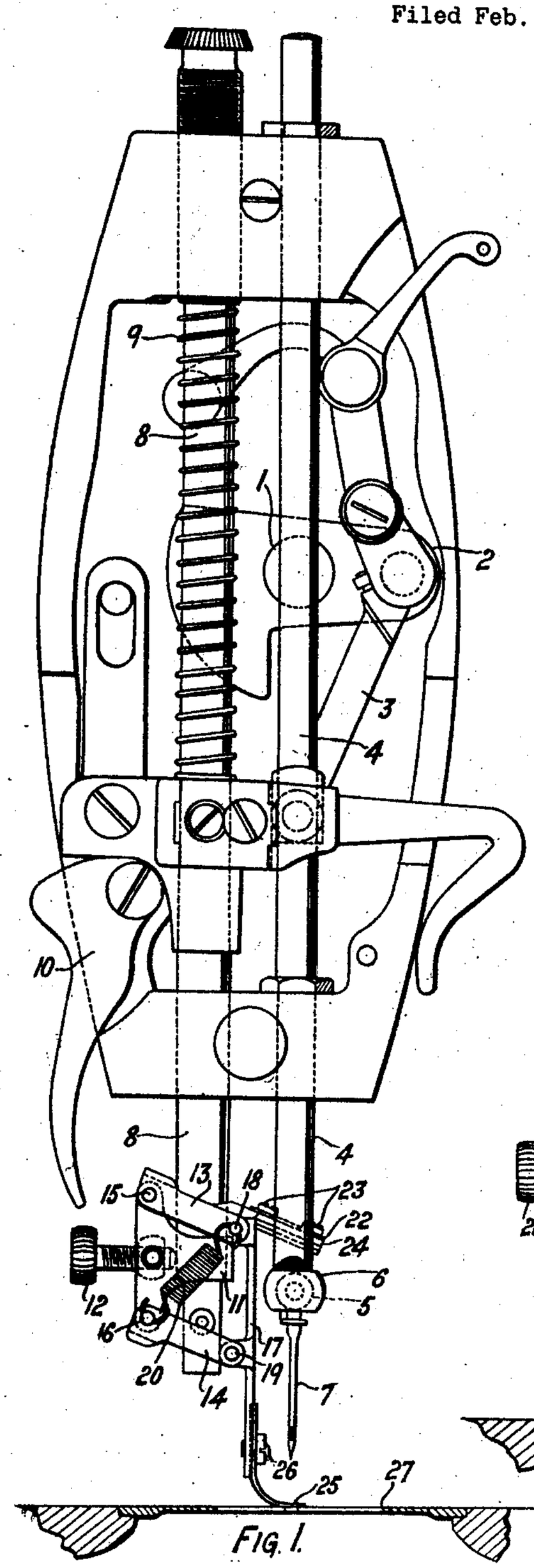


FIG. 1.

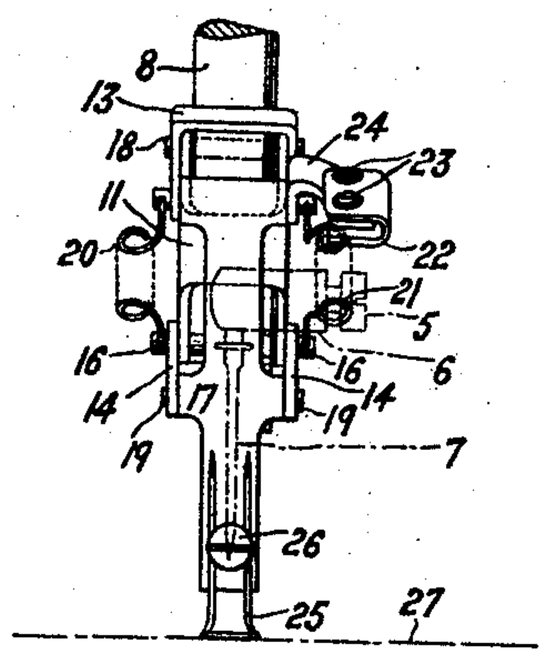


FIG. 2.

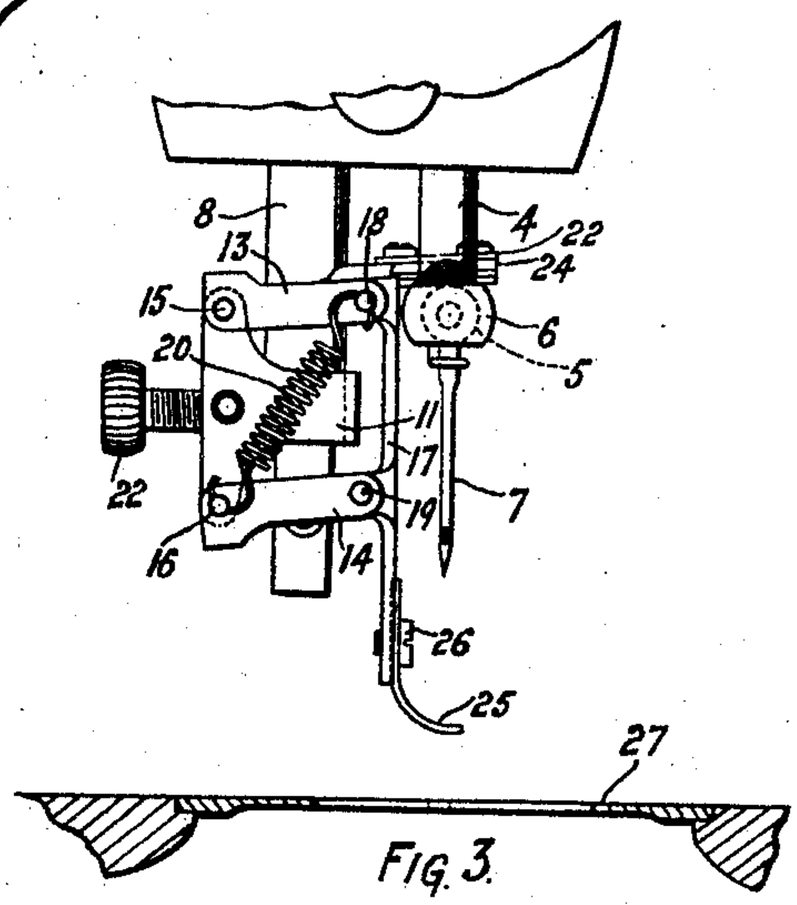


FIG. 3.

INVENTOR
HERBERT CORRALL
AND
JAMES HEGGIE
BY
Henry J. Miller
ATTORNEY

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UNITED STATES PATENT OFFICE.

HERBERT CORRALL, OF HELENSBURGH, AND JAMES HEGGIE, OF CLYDEBANK, SCOTLAND, ASSIGNORS TO THE SINGER MANUFACTURING COMPANY, OF ELIZABETH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SEWING-MACHINE ATTACHMENT.

Application filed February 23, 1924, Serial No. 694,493, and in Great Britain March 5, 1923.

This invention is concerned with a sewing machine attachment including a so-called "darning foot", which is adapted to be fitted to the presser bar of the sewing machine, in lieu of the usual presser foot, and which will be lifted from the work by the rising needle-bar at each ascent of the needle so as to release the work for a minimum period to allow the work to be moved.

The invention has for an object to provide a simple and inexpensive construction of extreme lightness, which, while permitting adequate elevation of the foot proper near the end of the upstroke of the needle, offers a minimum resistance, ensures prompt return of the foot proper to work-engaging position, and has none of the objections associated with the use of sliding parts.

In practice, the principal parts of the attachment are formed as stampings and include a clip applicable to the presser bar, a system of links pivoted to the clip, a foot-supporting member jointed to and sustained by the links, and a stop connected to the system of links and engageable in one direction of movement of the needle bar by a co-operating member participating in the reciprocations of the needle bar; the links, foot-supporting member and clip constituting a pin-jointed structure deformation of which is resisted by a diagonally disposed spring or springs tending to hold the foot in lowered position.

In the accompanying drawings Fig. 1 is an end view of the head of the bracket arm of a sewing machine embodying the invention, the face plate being removed, the parts of the attachment being shown in the positions occupied when the foot is lowered. Fig. 2 shows the attachment viewed at right angles to Fig. 1. Fig. 3 is a fragmentary view, similar to Fig. 1, showing the foot raised.

In the drawings 1 denotes the rotary upper or needle-actuating shaft having the usual crank and pitman connection 2, 3 with the vertically reciprocatory needle bar 4 to which is secured by a screw 5 a clamp 6 engaging an eye-pointed needle 7 co-operating with any suitable form of under stitch forming mechanism, not shown, in the formation of stitches.

Movable endwise in bearings in the head of the bracket arm in parallelism with the needle bar is a presser bar 8 normally depressed by a spring 9 and adapted to be raised by operation of the usual lifting lever 10.

The attachment proper comprises the clip 11 adapted to be adjustably secured to the presser bar 8 as by means of the pinching screw 12, a pair of parallel links 13, 14 of equal length formed as yokes embracing the clip 11, and connected by pivots 15 and 16 to the clip 11, a shank 17 connected by pivot pins 18, 19 to the links 13, 14, a pair of diagonally disposed helical tension springs 20, 21, one on each side of the clip 11, anchored to the pins 16 and 18, and a stop 22 detachably secured by screws 23 to a lug 24 integral with the upper link 13 and positioned in the path of the needle clamp screw 5 or other member on the needle bar 4.

At its lower end the shank 17 carries the darning foot proper in the form of a loop 25 of bent wire adjustably secured to the shank 17 by a clamping screw 26.

27 denotes the throat plate on which rests the work being stitched, said throat plate being formed with the usual needle aperture and feed slots.

The feeding mechanism is or may be of the usual type and is not described herein as it forms no part of the invention.

What we claim is:—

1. In a sewing machine, in combination with a vertically reciprocatory needle-bar and a presser-bar, a jointed structure including a part detachably carried by the presser-bar, a foot-supporting member, and spaced links connecting said part and said member, said links being at all times disposed transversely of the presser-bar, spring means tending to depress said member, and means for lifting said member in opposition to said spring means at each ascent of the needle-bar.

2. In a sewing machine, in combination with a vertically reciprocatory needle-bar, a presser-bar adjacent to the needle-bar, a clip detachably carried by the presser-bar, upper and lower parallel links each pivoted at one end to said clip and disposed at all times transversely of the presser-bar, a foot-supporting shank pivoted to the opposite ends of said links, spring means tending to depress said shank, and means carried by the needle-bar for lifting said shank in op-

position to said spring means at each ascent of the needle-bar.

3. A sewing machine attachment comprising, in combination, a clip formed for engagement with a presser-bar, a pair of parallel links one of which has a projecting portion, adapted to be engaged by laterally projecting means on the needle-bar, a foot-supporting shank, pairs of pivot pins connecting said links to said clip and to said shank, and diagonally disposed spring means anchored to one of each pair of pins.

4. A sewing machine attachment comprising, in combination, a clip formed for engagement with a presser-bar, parallel upper and lower links of equal length, each formed as a yoke embracing and pivoted to said clip, one link having a projecting portion adapted to be engaged by laterally projecting means on the needle-bar, a foot-supporting shank embraced by and pivoted to said links, said clip, links and shank constituting a pin-jointed structure, and a spring resisting deformation of said structure.

5. A darning foot for sewing machines comprising, a support adapted to be detachably connected to the presser-bar of a sewing machine, a foot member, a pair of parallel links connecting said foot member to said support, said links extending at all times transverse to the direction of length of the presser-bar, a spring for depressing said foot relative to said support, and means adapted to be engaged by a part carried by the needle-bar of a sewing machine for lifting said foot in opposition to said spring at each ascent of the needle-bar.

In testimony whereof we have signed our names to this specification.

HERBERT CORRALL.
JAMES HEGGIE.