

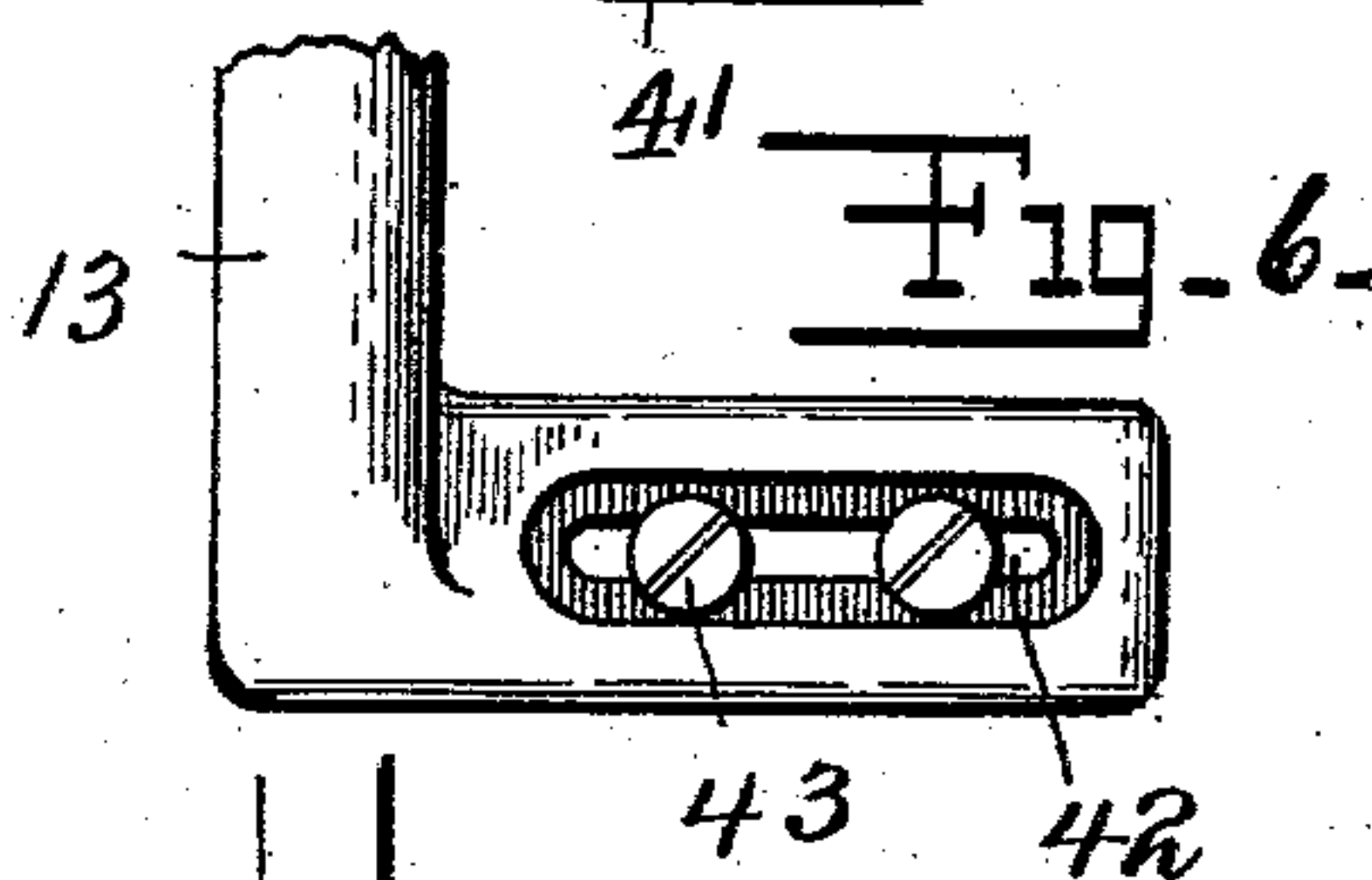
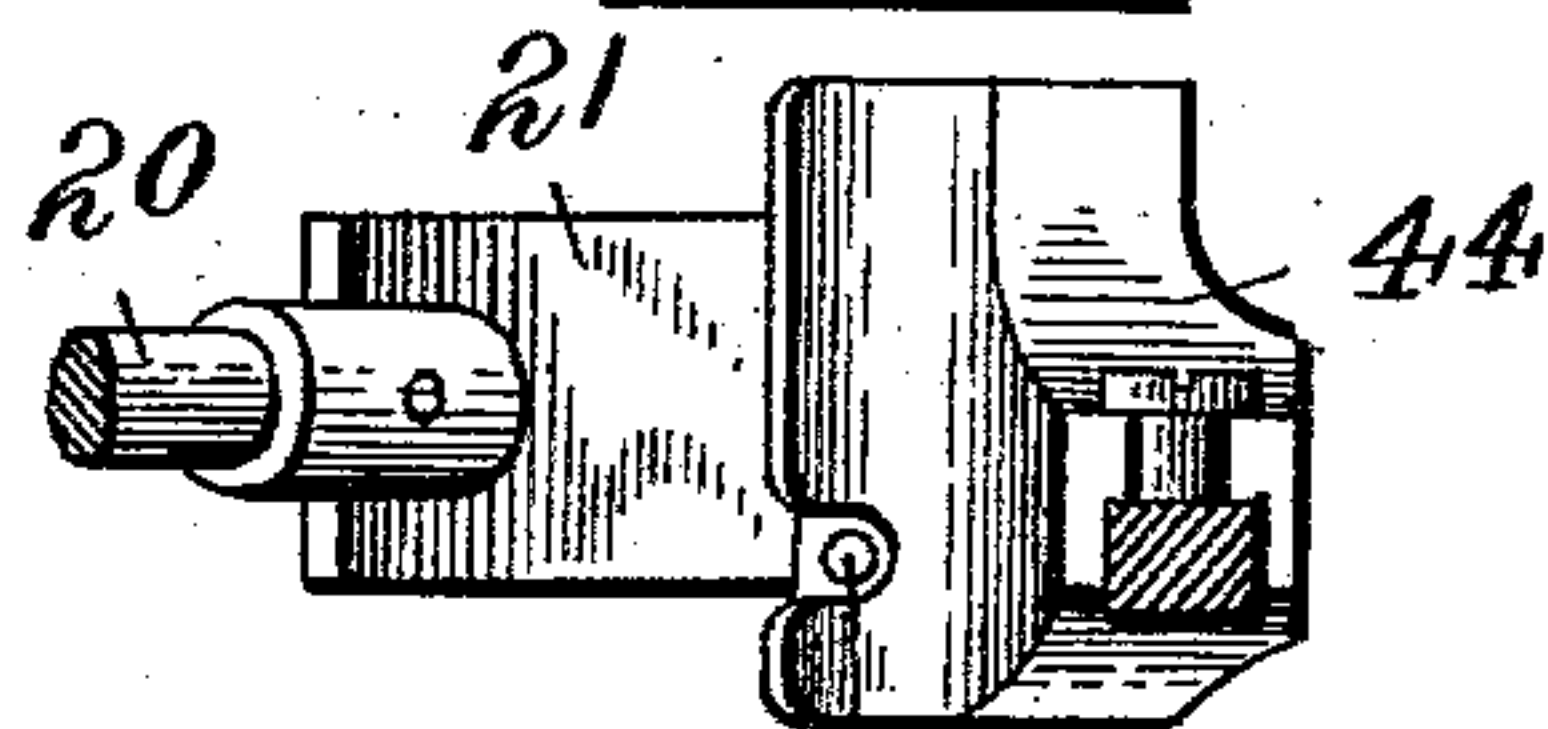
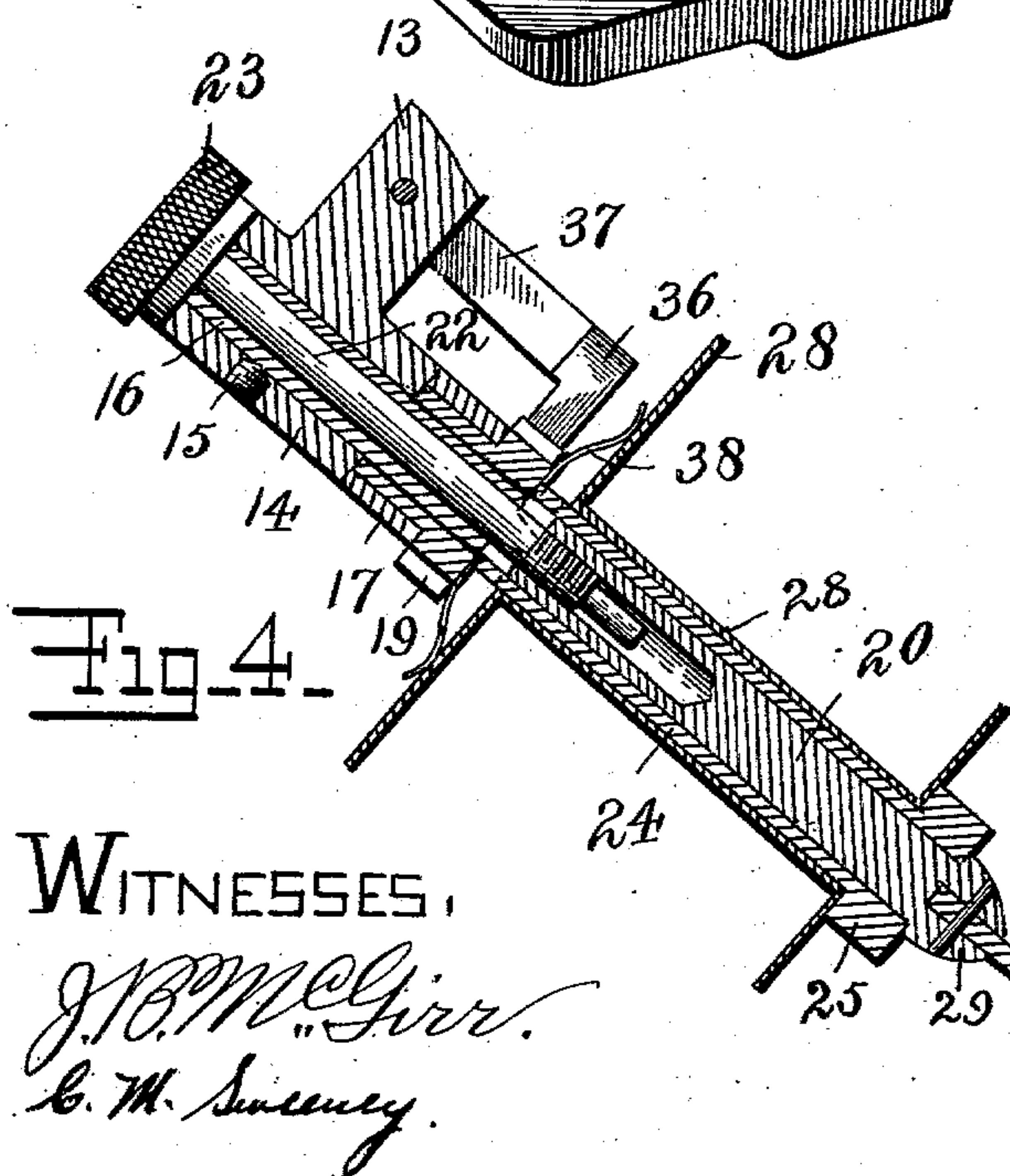
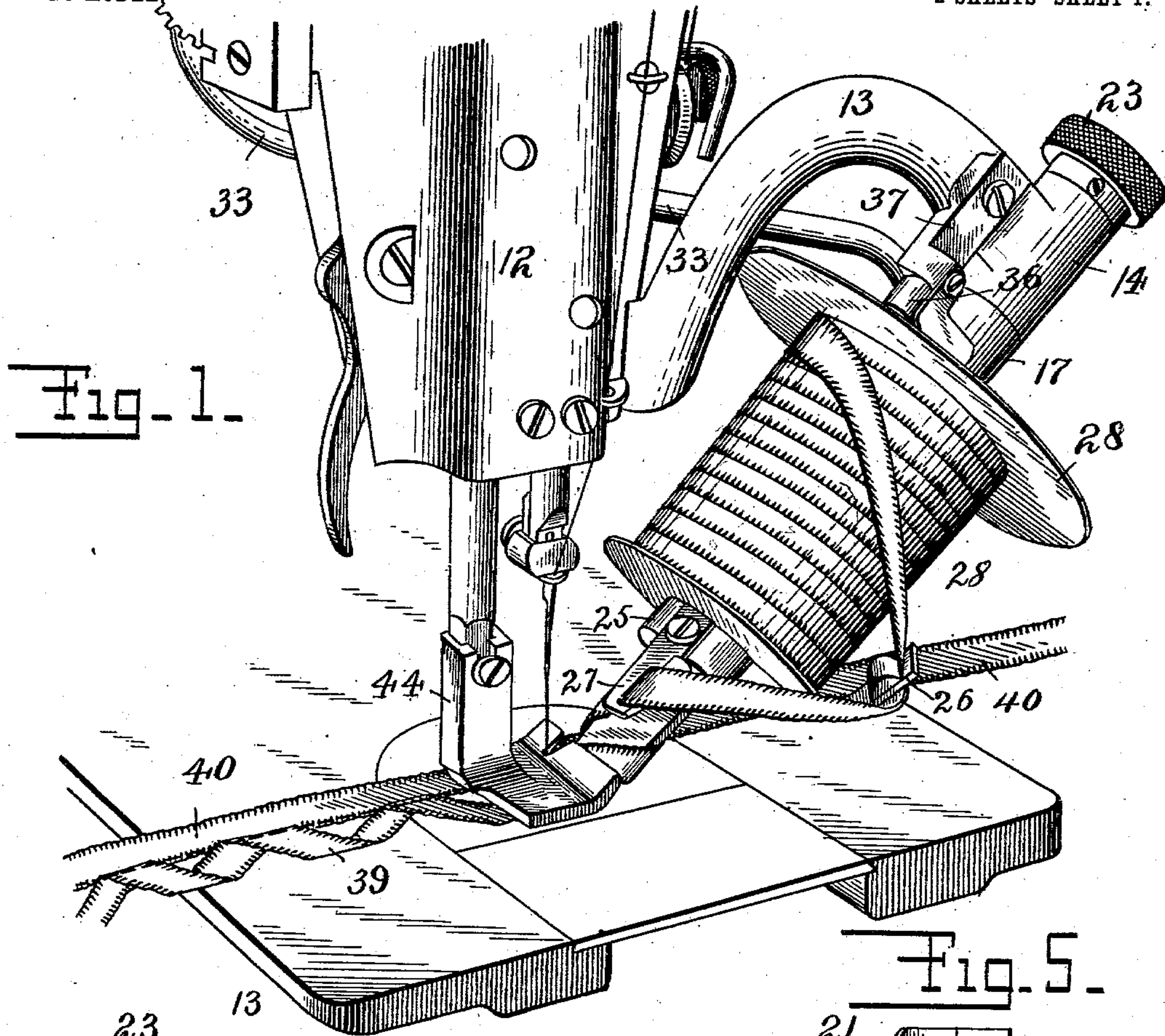
A. HOCHSTRASSER.

# EMBROIDERING ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED MAR. 31, 1902.

2 SHEETS—SHEET 1.

NO MODEL



WITNESSES.

J. B. McGirr.  
C. M. Sweeney.

44 INVENTOR  
Arnold Hochbrunner  
by *Henry Salver*  
Att'y



No. 740,654.

PATENTED OCT. 6, 1903.

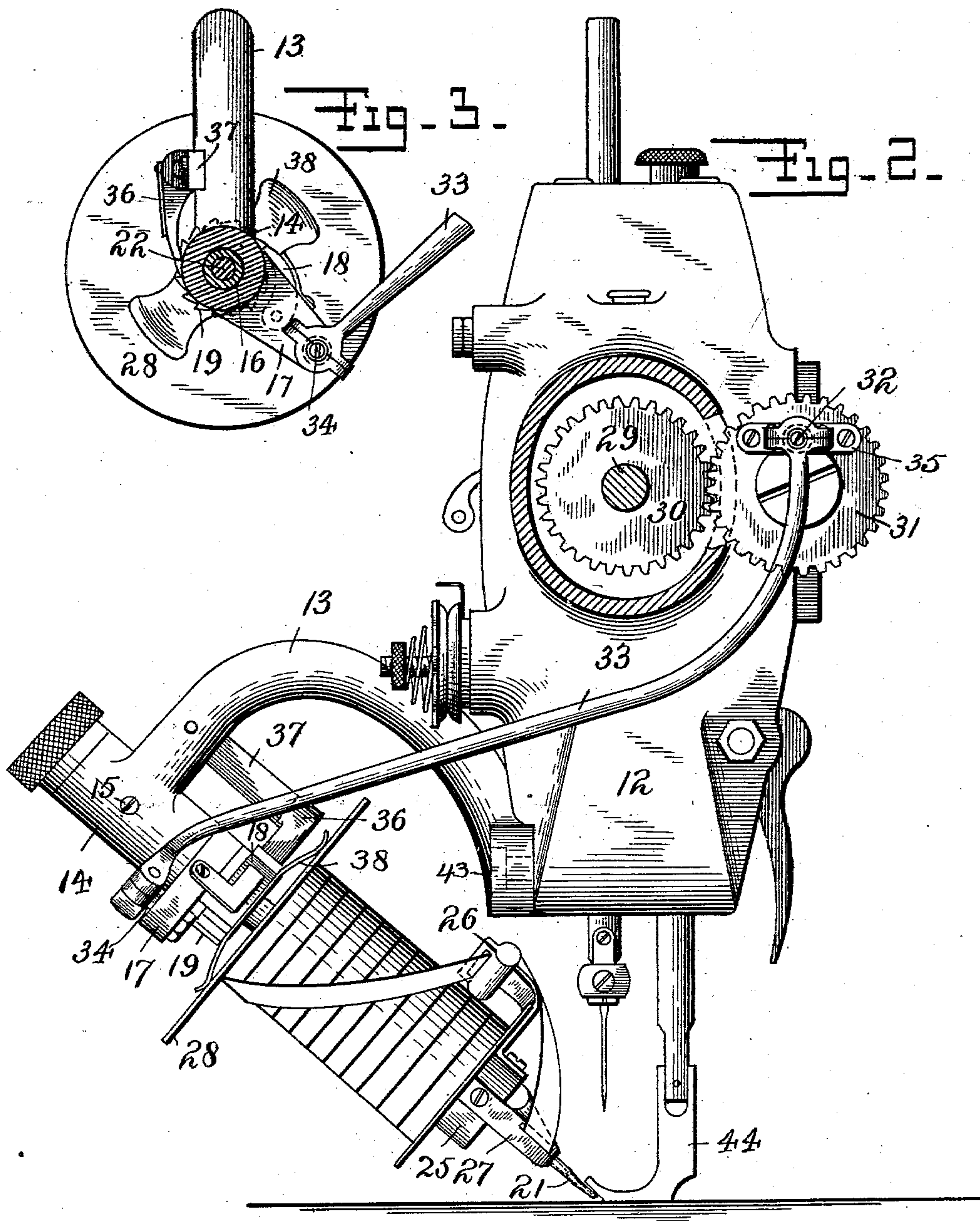
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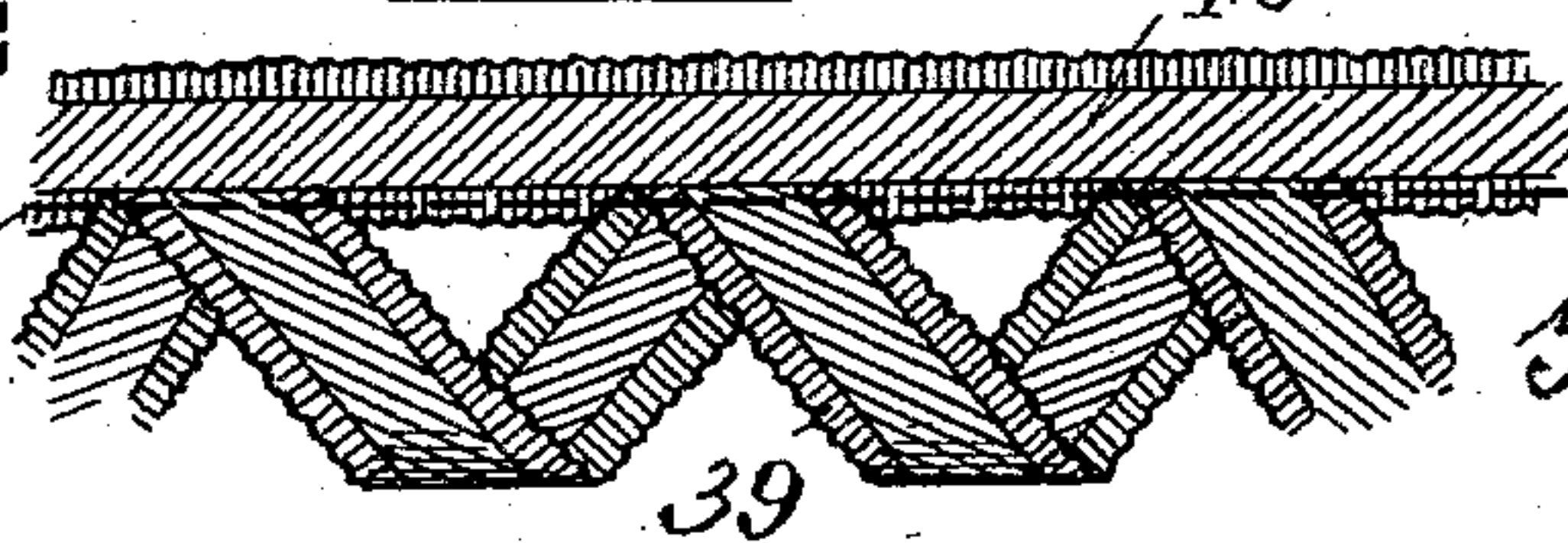
2 SHEETS—SHEET 2.



WITNESSES:

J. B. Mc Givver.  
C. H. Sweeney.

Fig. 7.



INVENTOR

A. Hochstrasser,  
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att'y.



# UNITED STATES PATENT OFFICE.

ARNOLD HOCHSTRASSER, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

## EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 740,654, dated October 6, 1903.

Application filed March 31, 1902. Serial No. 100,807. (No model.)

*To all whom it may concern:*

Be it known that I, ARNOLD HOCHSTRASSER, a citizen of Switzerland, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Embroidering Attachments for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has for its object to provide a sewing-machine attachment by means of which a strip of tape, braid, or other similar fabric may be presented to the stitch-forming devices of a sewing-machine in such a manner as to be laid or disposed in a spiral or serpentine form and be attached in such form or manner to another fabric strip or to a piece of fabric of any suitable kind. To this end a spool, on which is wound the tape or fabric strip which is to be ornamentally disposed, is suitably supported relative to the stitch-forming devices of the machine, and preferably above the work-plate and in front of the needle. Arranged adjacent to and in front of the 25 needle is a stationary former, around which the ornamental fabric strip running from the spool to the stitch-forming devices is wound in spiral form by slowly and preferably intermittently-rotating guides, through which the ornamental fabric strip passes on its way from the spool to the needle, and from which former the spirally-wound strip is constantly drawn as fast as wound by the feeding device of the machine, so that the spirally-wound strip is laid back and forth in zigzag or serpentine folds and is in this manner attached to a strip or other piece of fabric, so as to form an ornamental edging or so as to serve as embroidery back from the edge of a garment or other 40 article.

In the accompanying drawings, Figure 1 is a perspective view illustrative of the invention and its operation. Fig. 2 is a sectional elevation showing the embroidering attachment operatively mounted on a sewing-machine. Fig. 3 is a detail view of the pawl-and-ratchet device for rotating the guides. Fig. 4 is a detail sectional view of the spool-supporting and guide-rotating devices. Fig. 5 is a detail plan view showing the operative relation of the former to the presser-foot and

the needle-hole in the throat-plate. Fig. 6 is a detail view to illustrate the adjustable connection of the supporting-bracket with the arm of the machine, and Fig. 7 illustrates a sample of one form of work which can be done by the invention.

Referring to the drawings, 12 denotes the forward end of the arm of a sewing-machine, which supports a bracket 13, having at its outer end a hub 14, in which is secured, as by the set-screw 15, a sleeve 16, around which moves a swinging arm 17, provided with a spring-pressed pawl 18, engaging a ratchet-wheel 19, rotating on said sleeve 16. The sleeve is notched or toothed at its lower end, so as to interlock with the similarly-constructed upper end of a rod 20, to the lower end of which is rigidly attached the former 21, which is preferably made flat and slightly tapering or of decreasing thickness downward, so as to be slightly wedge-shaped in longitudinal or vertical section. The rod 20 is hollow at its upper end and is threaded internally for engagement with the threaded lower part of an attaching-rod 22, provided at its upper end with a rigidly-attached milled head 23, the lower face of which abuts against the upper end of the bracket-hub 14, so that by screwing the said rod 22 until the head 23 is tight against the hub 14 the rod 20 will be rigidly fixed with relation to the fixed sleeve 16, and thus the stationary former 21 will be securely held in working position.

The hub of the ratchet-wheel 19 has an interlocking or clutch connection at its lower end or side with the upper end of a sleeve 24, rotatively mounted on the rod 20, said sleeve having at its lower end a hub or collar 25, which carries the rotating strip or tape guides 26 and 27. The upper guide 26 rotates opposite the spool 28, mounted on the sleeve 24, and on which spool the tape or other embroidering strip of fabric is wound, and said guide 26 serves as a pull-off for the tape or strip, while the lower guide 27 rotates about the stationary former 21 and winds the tape or strip spirally around said former. This spiral disposition of the tape or fabric strip on the former is due to the fact that it is constantly being drawn from the former by the feeding device of the machine as fast as it is



being wound thereon, the downwardly-decreasing thickness or tapering shape of the former facilitating the downward slipping and discharge of the folds of the tape.

5 The upper end of the rotating sleeve 24 is held in clutch engagement with the hub of the ratchet-wheel 19 by the locking-rod 22, which (through the hub or socket-piece 29 at the lower end of the rod 20 and against which  
10 hub or socket-piece the lower end of said sleeve 24 abuts) holds said sleeve in operative engagement with the hub of the ratchet-wheel.

The main shaft 29 of the sewing-machine  
15 is provided with a gear-wheel 30, meshing with a second gear-wheel 31, journaled on a stud fixed to the head or frame of the machine and provided with a crank-pin 32, with which is engaged the upper end of a connecting-rod 33, the lower end of which en-  
20 gages a crank-pin 34 on the swinging pawl-carrying arm 17. The crank-pins 32 and 34 are preferably made as ball-studs, so as to provide for proper freedom of movement of  
25 the parts, and the crank-pin 32 is also preferably connected with the gear-wheel 31 through a bracket 35, attached to said gear-wheel and in which the crank pin or stud may be adjustably mounted, if desired, to  
30 vary the pawl-and-ratchet movement derived from said crank-pin. The crank-pin 34 may also be adjustably mounted in the pawl-carrying arm 17 for this same purpose.

Backward movements of the ratchet-wheel  
35 19 are prevented by a spring-pressed detent-pawl 36, mounted on an arm 37, attached to the bracket 13. A friction or tension plate 38, bearing against the upper flange of the spool 28, is preferably employed to restrain  
40 the said spool from turning too freely and to put a slight tension on the tape or other ornamental fabric strip as the latter is drawn from said spool.

For attaching one edge of a spirally-wound  
45 or serpentine tape or fabric strip 39 to the edge of a straight or curved strip or piece of fabric 40 the stationary former is preferably arranged approximately as shown in Fig. 5, with the right-hand edge of the former slightly  
50 to the right (in the line of the feed of the work) of the needle-hole 41 in the throat-plate and mainly in front of the presser-foot 44, so that the right-hand edges of the folds of the serpentine fabric strip will slightly  
55 overlap (in the line of the feed) the said needle-hole and also slightly overlap the edge of the straight or curved fabric or strip to which the serpentine strip is to be attached, a suitable guide for the said straight or curved  
60 fabric or strip being of course provided. By virtue, however, of the adjustable connection of the bracket 13 with the arm or head of the machine afforded by the slot 42 in a part of said bracket and through which slot the at-  
65 taching screw or screws 43 pass the spirally-wound or serpentine strip may be delivered to the needle in various ways, so that the line

of stitches may run through the middle or other parts than the right-hand edge of the ornamentally-disposed strip, to which may  
70 be centrally stitched a cord or a narrow tape or braid to produce different kinds of ornamental trimmings; also, by providing formers of different widths and by varying the speed of rotation of the strip-guides a great variety  
75 of embroidering or ornamental work may be performed through the instrumentality of the invention.

In the operation of the invention and after the ornamental strip has been led to the nee-  
80 dle and engaged with the machine feeding device the intermittingly-rotating guides 26 and 27 draw the tape or fabric strip from the spool and wind it spirally around the station-  
85 ary former 21, from which it is drawn by the said feeding device as fast as it is being wound on said former, the lower edge of the former being of course slightly above the throat-  
90 plate of the machine to enable the folds of the fabric strip to be readily discharged from the said former as the sewing operation progresses.

The invention is adapted for forming ornamental edgings and trimmings for curtains, dresses, and various articles and garments,  
95 as will be understood, and the details of the invention may be varied widely without departing from the essence thereof.

Having thus described my invention, I claim and desire to secure by Letters Pat-  
100 ent—

1. A sewing-machine attachment comprising a supporting-bracket on which a spool for containing a wound-up ornamenting fabric  
105 strip may be rotatively mounted, combined with a stationary former supported above the work-plate of the machine and in front of the needle thereof, in the line of the feed of the work, by said bracket, rotating pull-off and  
110 winding guides for drawing the fabric strip from said spool and winding it about said former, and means for rotating said guides around the axis of said spool.

2. A sewing-machine attachment comprising a supporting-bracket on which a spool for  
115 containing a wound-up ornamenting fabric strip may be rotatively mounted, and which bracket is adjustably mounted with reference to the needle of the machine, combined with a stationary former supported above the  
120 work-plate of the machine and in front of the needle thereof by said bracket, rotating guides for drawing the fabric strip from said spool and winding it about said former, and means for operating said rotating guides.  
125

3. A sewing-machine attachment comprising a supporting-bracket on which a spool for  
130 containing a wound-up ornamenting fabric strip may be rotatively mounted, combined with a stationary former supported above the work-plate of the machine and in front of the needle thereof by said bracket, rotating guides for drawing the fabric strip from said  
135 spool and winding it about said former, and



means for operating said rotating guides, one of said guides being arranged adjacent to the said spool, to serve as a pull-off for the fabric strip, and the other of said guides being  
5 located adjacent to said former and serving to wind the ornamenting fabric strip around the said former.

4. The combination with the bracket 13 adapted to be attached to the head of a sewing-machine, of a stationary former 21 supported in front of the needle by said bracket, a spool for containing the embroidering-strip also supported by said bracket, the strip-guides 26 and 27, said guide 26 being arranged  
15 adjacent to said spool and said guide 27 being arranged adjacent to said former, a ratchet-wheel operatively connected with said guides for the purpose of rotating the same about said spool and former, and means  
20 for operating said ratchet-wheel.

5. The combination with the sewing-ma-

chine head 12, of a bracket attached to said head, the stationary former 21 supported in front of the needle by said bracket, a spool for containing the embroidering-strip also  
25 supported by said bracket, the strip-guide 26 arranged adjacent to said spool, the strip-guide 27 arranged adjacent to said former, a ratchet-wheel with which said strip-guides are operatively connected, so as to be inter-  
30 mittingly rotated about said spool and former, the swinging pawl-carrying arm 17 for operating said ratchet-wheel, the pitman 33 for operating said pawl-carrying arm, and a rotating crank geared to the main shaft of the  
35 machine for operating said pitman.

In testimony whereof I affix my signature in presence of two witnesses.

ARNOLD HOCHSTRASSER.

Witnesses:

JOSEPH F. JAQUITH,

HENRY A. KORNEMANN.