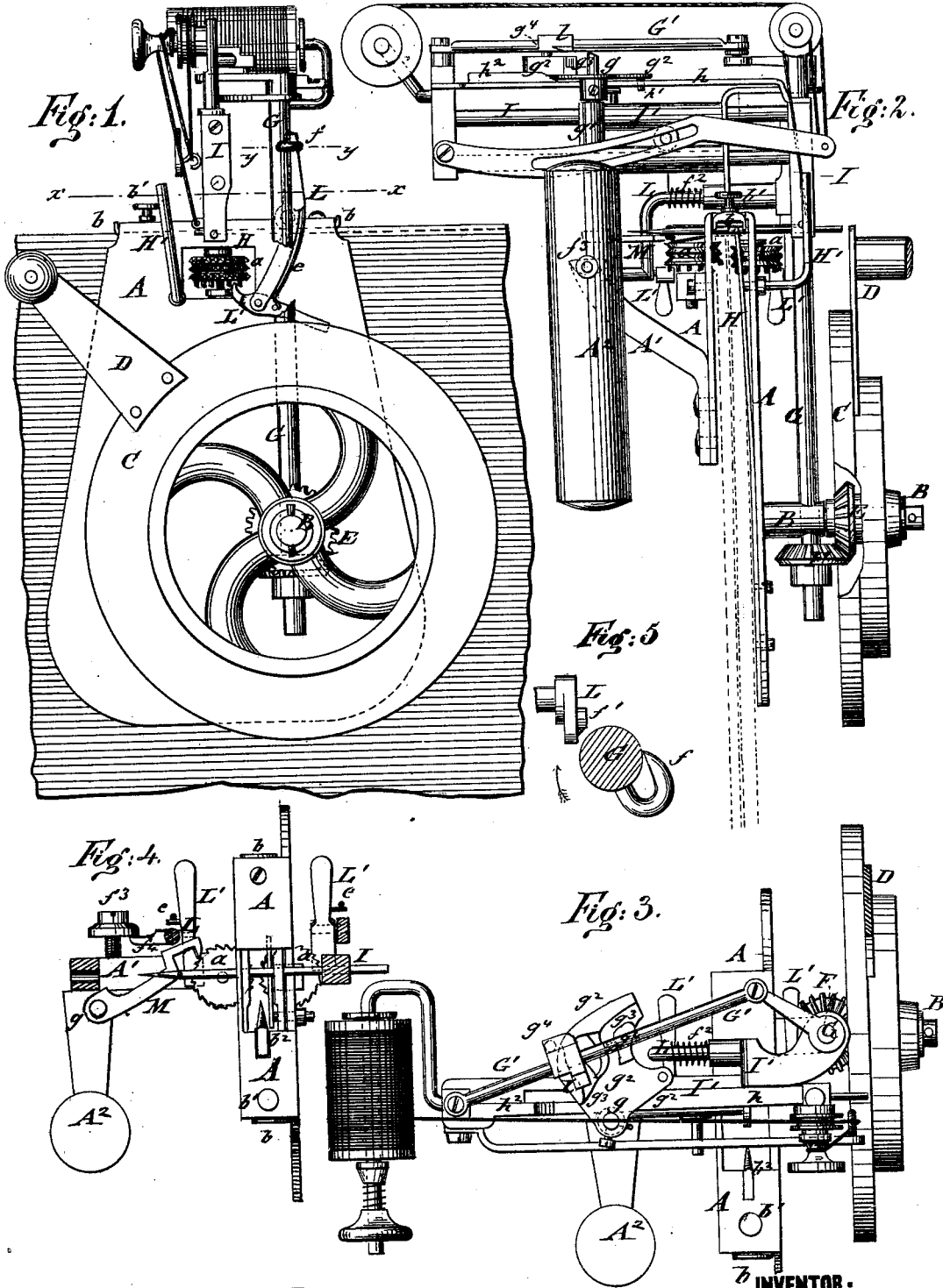


J. HESSE.  
 CARPET SEWING-MACHINES.

No. 195,277.

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WITNESSES:  
*Cnas. Nide.*  
*J. H. Scarborough.*

INVENTOR:  
*J. Hesse.*  
 BY *Munnell*  
 ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOSEPH HESSE, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN CARPET-SEWING MACHINES.

Specification forming part of Letters Patent No. 195,277, dated September 18, 1877; application filed May 21, 1877.

*To all whom it may concern:*

Be it known that I, JOSEPH HESSE, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Carpet-Sewing Machine, of which the following is a specification:

In the accompanying drawings, Figure 1 represents an end elevation of my improved carpet-sewing machine; Fig. 2, a side elevation; Fig. 3, a top view; and Fig. 4, a horizontal section of the same on line *x x*, Fig. 1. Fig. 5 is a detail horizontal section of the cam device for operating the feed.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an effective and readily-operated hand sewing-machine, by which carpets may be rapidly and evenly connected by a loop-stitch formed of one thread.

The invention consists of a bent main plate or saddle, straddling the edges of the carpet, and having a regulating-plate, to control the distance of the stitch from the edges and compress them for the needle. A presser-spring, with lifter and feed-roller, is attached to the inside of the main plate. The feed-bar, needle-bar, and devices for imparting motion to the reciprocating hook, receive their motion from a hand crank-wheel and driving-shaft geared therewith, the feed-bar operating two feed pawls and rollers, working independently of each other. The compound motion of the thread-hook is imparted by a top plate with guide-grooves and the beveled upper end of the hook-stem, in connection with pins and a bevel-plate of the connecting-rod of needle-bar and driving-shaft, as will be more fully described.

By referring to the drawing, A represents the bent main plate or saddle, which is made of inverted U shape, so as to straddle and rest upon the edges of the carpet. The two sides of the main plate are extended downward, being shorter or longer on either or both sides, or of equal length, as desired, forming guides for the machine.

To one side plate is attached a fixed shaft, B, with the driving hand crank-wheel C D, which gears by bevel-gearing E F with the upright driving-shaft G, that transmits mo-

tion to the different operating parts of the machine.

To the opposite side plate is attached the supporting arm or standard A<sup>1</sup>, which carries the needle-bar guide-frame, and is provided with a rigid handle, A<sup>2</sup>, that is held in the left hand, for the purpose of steadying the machine, while the hand crank-wheel is revolved by the right hand.

The carpet is suspended by means of hooks or clamps, and stretched out tightly with pulleys, similar to the method adopted for hand sewing.

The machine is placed on the carpet by withdrawing the presser-spring H by the lifter H' and then letting the same go, when the machine is in position. The main plate is thereby pressed tightly against the carpet and is ready to be operated.

The presser-spring H carries, in lugs or plates at right angles thereto, one of the feed-rollers *a*, the other feed-roller *a* revolving on fixed bearings of the opposite side plate, and extending, like the first, through slots of the main plate to the inside of the same, bearing against the carpet.

The main plate A is provided at the bent portion with a regulating-plate, *b*, by which the distance of the stitch from the edge of the carpet is adjusted. The regulating-plate *b* is set by a small screw, *b*<sup>1</sup>, on top of the main plate. The plate *b* is provided with a downwardly-projecting point, *b*<sup>2</sup>, that is placed in front of the needle, for the purpose of pressing in any portion of the right side of the carpet which may protrude.

The regulating-plate is contracted at that part immediately in front of the projecting point or horn, so as to compress the outside edges of the carpet and confine those parts pushed in by the point. The regulating-plate is recessed at the sides for the passage of the needle.

The feed-rollers *a a* are operated by a feed-bar, L, that turns in a horizontal tubular portion of the needle-bar guide-frame I'. The feed-bar L is provided with two arms, that carry the pivoted and spring-acted feed-pawls L', which engage pins or teeth at the under side of the feed-rollers *a a*. The feed-pawls L' act independently of each other, so that

either of them may be disengaged from the feed-rollers and retained by means of a spring, *e*, in order to match the pattern of the carpet.

The forward motion of the feed is obtained by a fixed cam or projection, *f*, of the actuating-shaft *G*, engaging an upward extended arm of the feed-bar *L*, the arm having an inclined or beveled lug, *f*<sup>1</sup>, as shown clearly in detail in Fig. 5. The return motion of the feed-bar is obtained by a spring, *f*<sup>2</sup>, attached to the horizontal portion of the feed-bar.

The feed is regulated by means of a screw, *f*<sup>3</sup>, working in the standard *A*' and engaging a heel, *f*<sup>4</sup>, of the feed-bar, as shown in Fig. 4, so that by shortening the screw the stitch will be smaller, and by lengthening the same longer.

The needle-bar guide-frame *I*' is arranged in horizontal position on standard *A*', and at right angles to the main plate, the needle-bar *I* being extended downward, and provided at the lower end with a hole, wherein the needle is fixed by means of a set-screw. The needle-bar is reciprocated by a top crank of the driving-shaft *G* and a connecting-rod, *G*', attached to the rear end of the needle-bar, being also provided with the customary spool-supporter, tension device, and thread-guiding hook and eye, which move with the needle-bar, as shown.

The rotating hook *M* is arranged at the side of the main plate opposite to the needle, and attached to the lower end of a vertical rod, *g*, that slides and turns in a guide-tube, *g*<sup>1</sup>, of the needle-bar guide-frame *I*'.

To the top of the vertical rod *g* is secured a horizontal plate, *g*<sup>2</sup>, which contains two curved grooves, *g*<sup>3</sup>, in which the pins *g*<sup>4</sup> attached to the connecting-rod *G*' slide, imparting thereby intermittent rotary reciprocating motion to the hook *M*. The top plate *g*<sup>2</sup> is guided by a

pin, *h*<sup>1</sup>, along a slotted guide-bar, *h*, of the needle-bar guide-frame *I*', and passed up along a raised portion, *h*<sup>2</sup>, of the same, so as to lift the hook when the thread is passed through the carpet. The hook is lowered prior to its return motion by a spiral spring between the guide-tube and its lower arm, which motion is rendered positive by a pitch or bevel at the upper end of the rod *g*, forming contact with a fixed beveled stud, *l*, of the connecting-rod *G*', as shown in Fig. 2, so as to force the hook-stem down.

The machine forms a simple loop-stitch, and sews the edges of the carpet in rapid and uniform manner, so as to accelerate and facilitate the tedious work of sewing carpets in a high degree.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The regulating-plate *b*, having downward extending point *b*<sup>2</sup> and contracted part in front of the same, for the purpose specified.

2. The combination of the main plate *A*, having feed-rollers *a a*, with independent spring-pawls *L*<sup>1</sup>, feed-bar *L*, and cam *f* of driving-shaft *G* and regulating set-screw *f*<sup>3</sup>, to feed-mechanism and adjust length of stitch, substantially as described.

3. The combination of the reciprocating thread-hook *M*, having spring-acted vertical rod or stem *g*, with the raised portion *h*<sup>2</sup> of guide-bar *h*, and with the projection or lug *l* of the driving-rod *G*', to raise and lower hook at the proper time, substantially in the manner set forth.

JOSEPH HESSE.

Witnesses:

ALBERT ARMSTED,  
CARL RAHSKOPFF.