

(No Model.)

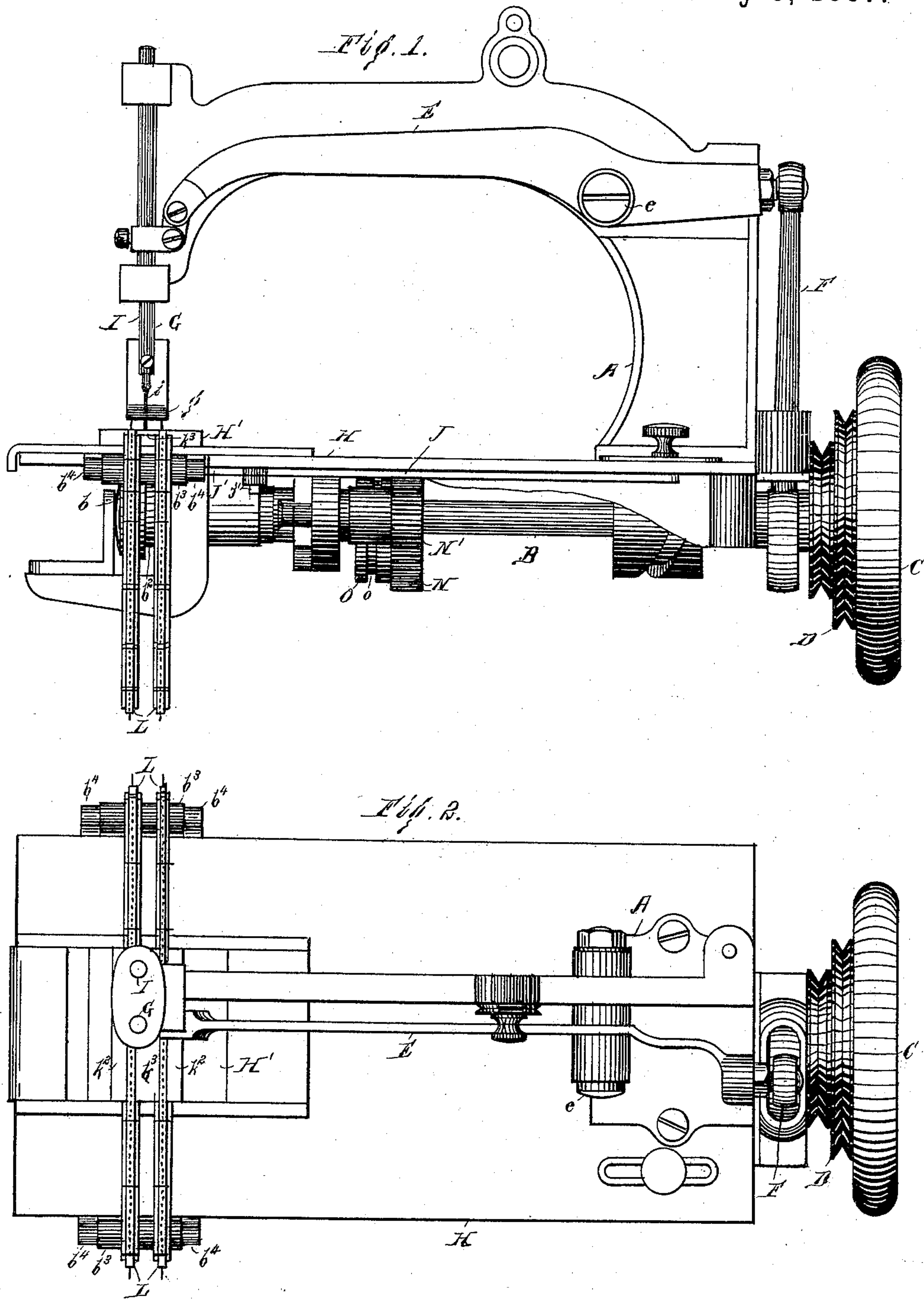
2 Sheets—Sheet 1.

G. F. WILSON.

FEEDING DEVICE FOR SEWING MACHINES.

No. 365,956.

Patented July 5, 1887.



Witnesses.

Kirkley & Hyde.
Arthur M. Day.

Inventor.
George F. Wilson.
By Albert M. Moore
His Attorney.

(No Model.)

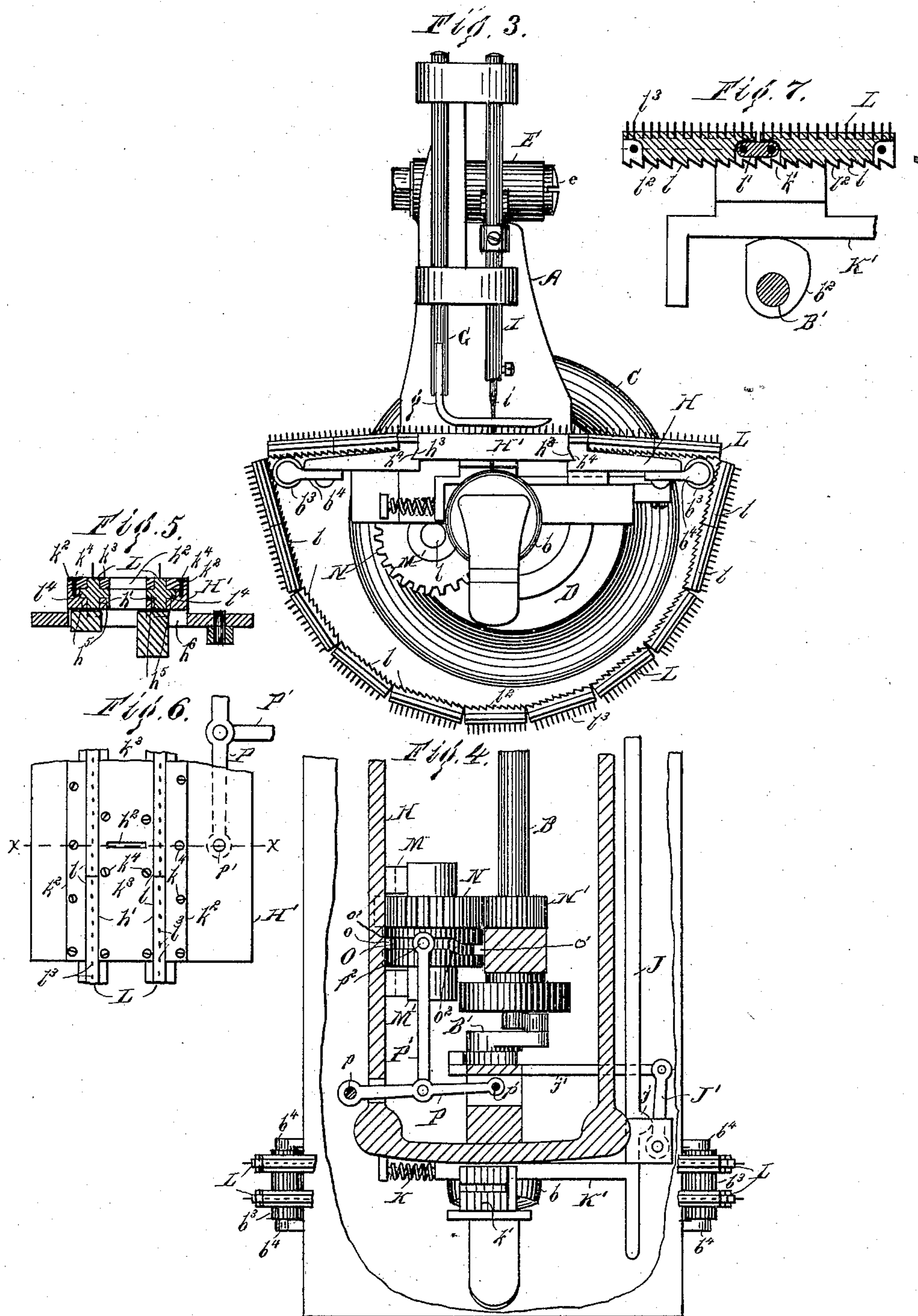
2 Sheets—Sheet 2.

G. F. WILSON.

FEEDING DEVICE FOR SEWING MACHINES.

No. 365,956.

Patented July 5, 1887.



Witnesses—

Wm. Kirkley Hyde.

Antonia M. Day.

Inventor—

George F. Wilson,
By Albert M. Moore,
his Attorney.

UNITED STATES PATENT OFFICE.

GEORGE F. WILSON, OF LAWRENCE, MASSACHUSETTS.

FEEDING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 365,956, dated July 5, 1887.

Application filed October 9, 1886. Serial No. 215,783. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. WILSON, a citizen of the United States, residing at Lawrence, in the county of Essex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Sewing-Machines, of which the following is a specification.

My invention relates to sewing-machines; and it consists in the hereinafter-described improvement in the feeding apparatus, the object of which is to enable the edges of two breadths of cloth or other material to be sewed together in such a manner that they will butt together instead of overlapping.

The improvement hereinafter described is applicable to any sewing-machine, and is herein shown and described as applied to the well-known Wheeler & Wilson sewing-machine.

In the accompanying drawings, on two sheets, Figure 1 is a front elevation of a No. 8 Wheeler & Wilson sewing-machine provided with my improvement; Fig. 2, a plan of the same; Fig. 3, a left-end elevation of the same; Fig. 4, a plan of part of the bed-plate, the same being broken away to show parts beneath, and the feed-chains being broken; Fig. 5, a vertical section through the needle-slot on the line *x x* in Fig. 6; Fig. 6, a top view of part of the feed-chains and of part of their carrying-shoe, and a part of the lever, and a part of the link for reciprocating said chains and shoe; Fig. 7, a vertical longitudinal central section of two feed-links of the feed-chain, a side elevation of a part of the feed-bar and feed-cam, and a vertical transverse section of the hook-shaft.

The frame A, driving-shaft B, hand-wheel C, pulley D, vibrating arm E, pivoted on the frame at *e* and connected to an eccentric on the shaft B by a connecting rod or link, F, the presser-bar G, presser-foot *g*, needle-bar I, needle *i*, bed-plate H, hook-shaft B', and rotating hook *b*, secured thereto, are all of the usual construction and operation.

The parts of the four-motion feed commonly used in a machine of the kind referred to are shown in the drawings, these parts being as follows: The stitch-regulating lever J, provided on its front side with a projection, *j*, which bears against a lever, J', pivoted at one

end to the under side of the bed-plate H and at the other end to a connecting-rod, *j'*, the other end of which connecting-rod engages a cam on the hook-shaft B' and causes said lever J' to press against the projection *j* and throw the lever J backward—that is, to the left in Fig. 4—said lever J being again pressed forward by a spiral spring, K, which crowds against the feed-bar K', through an opening in the front end of which the lever J is passed, said feed-bar being provided on its upper surface with teeth or serrations *k'*, which serrations are commonly used to catch in the fabric operated upon and carry it backward, but which are here used for a different purpose, the feed-bar being raised and lowered by a cam, *b''*, on the hook-shaft B', as shown in Fig. 7. Sliding on the bed-plate H is another plate or shoe, H', provided with grooves *h'*, extending from front to back of said shoe H', to admit and guide the feed-chains L, and provided also with a slot, *h''*, extending lengthwise of the machine and long enough to allow said shoe to oscillate without striking the needle. The shoe H' serves the purpose of the throat-plate and partly fills the place usually occupied by said throat-plate and the front and back slides commonly used, and is guided in the ways *h'''*, which commonly receive these parts, the lower part of said shoe being provided with a dovetail, *h''''*, which enters said ways *h'''*, said shoe being oscillated laterally, as hereinafter described.

The chains L each consist of a series of straight feed-links, *l*, pivoted to each other near their ends by shorter connecting-links, *l'*, as shown in Fig. 7, in an obvious manner, the feed-links being provided on their inner surfaces with serrations *l''*, adapted to engage those of the feed-bar, and provided on their outer surfaces with sharp pins *l'''*, adapted to enter and carry along the work as the chain is fed forward by the customary motion of the feed-bar K'. The inner part of each feed-link *l* is provided with lateral flanges, *l''''*, which enter and fit lateral enlargements, *h''''*, in grooves *h'*, these enlargements being more conveniently formed by making the shoe H', as shown in Figs. 5 and 6, with removable plates *h''''*, let into said shoe and secured thereto by screws *h''''''*, flush with the top of said shoe, the

middle one, k^3 , of said removable plates serving as the throat-plate and being provided with the throat or slot h^2 , above referred to. The feed-chains L rest upon anti-friction rolls b^3 , supported upon brackets b^4 at the front and back of the bed-plate, and hang loosely below the same and below the stitch-forming devices. The shoe H' is given an oscillating motion between the stitches made by the machine, resting while the needle is in the work. In short brackets M M', secured to the under side of the bed-plate H, turns a short shaft, Fig. 4, supporting a gear, N, having twice as many teeth as another gear, N', secured to the driving-shaft B. Secured to the gear N concentrically therewith is a cam, O, provided with a cam-groove, o . To a post, a , which forms a part of the frame A, is pivoted at one end, p , a lever, P, the other end, p' , of said lever being pivoted to the shoe H'. (See Figs. 4, 5, and 6.) A rod, P', is connected to the lever P near the middle of the same at one end of said rod, and at the other end is provided with a stud, p^2 , which enters the cam-groove o , said rod p' being guided by a slot in the bracket M'. It is evident that the cam O will make one revolution while the driving-shaft is making two revolutions, and that the shoe H' and the feed-chains L will be caused to move side-wise, first in one direction and then in the other, by the revolution of said cam O, the shoe being provided with a recess, h^6 , in its under surface of a sufficient depth and width to allow said shoe to oscillate while the feed-bar is in said recess. The cam-groove o has two rests, o' , each of which extends a little less than half-way around the cam-cylinder O, the two rests of the cam-groove o lying in separate planes, each of which is at right angles to the axis of said cam, the ends of the rest being connected to each other by inclined grooves o^2 , which cause a rapid motion of the shoe. When the edges of two breadths of cloth are placed on the shoe H' and said edges are butted over the middle of said shoe and the machine is operated, the work will be carried from side to side, so that the needle will pass alternately through each of said breadths near their adjacent edges, making a zigzag line of stitches, the movement of the stitch-forming devices and of the shoe H' being so timed with reference to each other that the work is fed forward and sidewise only when the needle is raised above the work.

My improvement can be applied to any sewing-machine and operated by either a wheel-feed or a four-motion feed, and may be used without oscillating the shoe to feed overlapping breadths or pieces of heavy material.

I claim as my invention—

1. In combination with the bed-plate and

feed mechanism of a sewing-machine, the shoe, and mechanism, substantially as described, for oscillating said shoe on said bed-plate at right angles to the direction of the feed, said shoe being provided with grooves parallel to the direction of said feed, and feed-chains guided in said grooves and engaged and carried forward by said feed mechanism, and provided with projections to engage the work and to carry the same forward, as and for the purpose specified.

2. In combination with the bed-plate and four-motion feed mechanism, provided with serrations, the shoe oscillating laterally on said bed-plate and provided with grooves parallel to the direction of said feed, feed-chains guided in said grooves, the feed-links of said feed-chain provided on their inner surfaces with serrations to engage the serrations of said feed mechanism, and provided on their outer surfaces with pins or projections to engage the work, and mechanism, substantially as described, for oscillating said shoe, as and for the purpose specified.

3. The combination of the bed-plate and frame of a sewing-machine, the vertically-reciprocating needle and its operating mechanism, the shoe provided with a needle slot or throat and with grooves, and oscillating laterally on said bed-plate, feed-chains guided by said grooves and provided on their inner surfaces with serrations, the feed mechanism having a feed-bar provided with serrations to engage with the serrations on said feed-chains, said feed-chains being also provided with pins projecting from their outer surfaces, and mechanism, substantially as described, for oscillating said shoe, as and for the purpose specified.

4. The combination of the bed-plate provided with ways, the shoe sliding laterally on said ways and provided with grooves and with a needle slot or throat, feed-chains guided in said grooves and provided on their outer surfaces with projections to engage the work, a feed-lever pivoted at one end to said bed-plate and at the other end to said shoe, the driving-shaft provided with a pinion, another shaft journaled in brackets secured to said bed-plate, a gear on said last-named shaft engaging with said pinion and having twice as many teeth as said pinion, a cam secured to said last-named shaft concentrically with said gear and provided with a cam-groove, and a connecting-rod provided with a stud to enter said groove of said cam, and pivoted to said lever between its ends, as and for the purpose specified.

GEORGE F. WILSON.

Witnesses:

ALBERT M. MOORE,
GERTRUDE M. DAY.