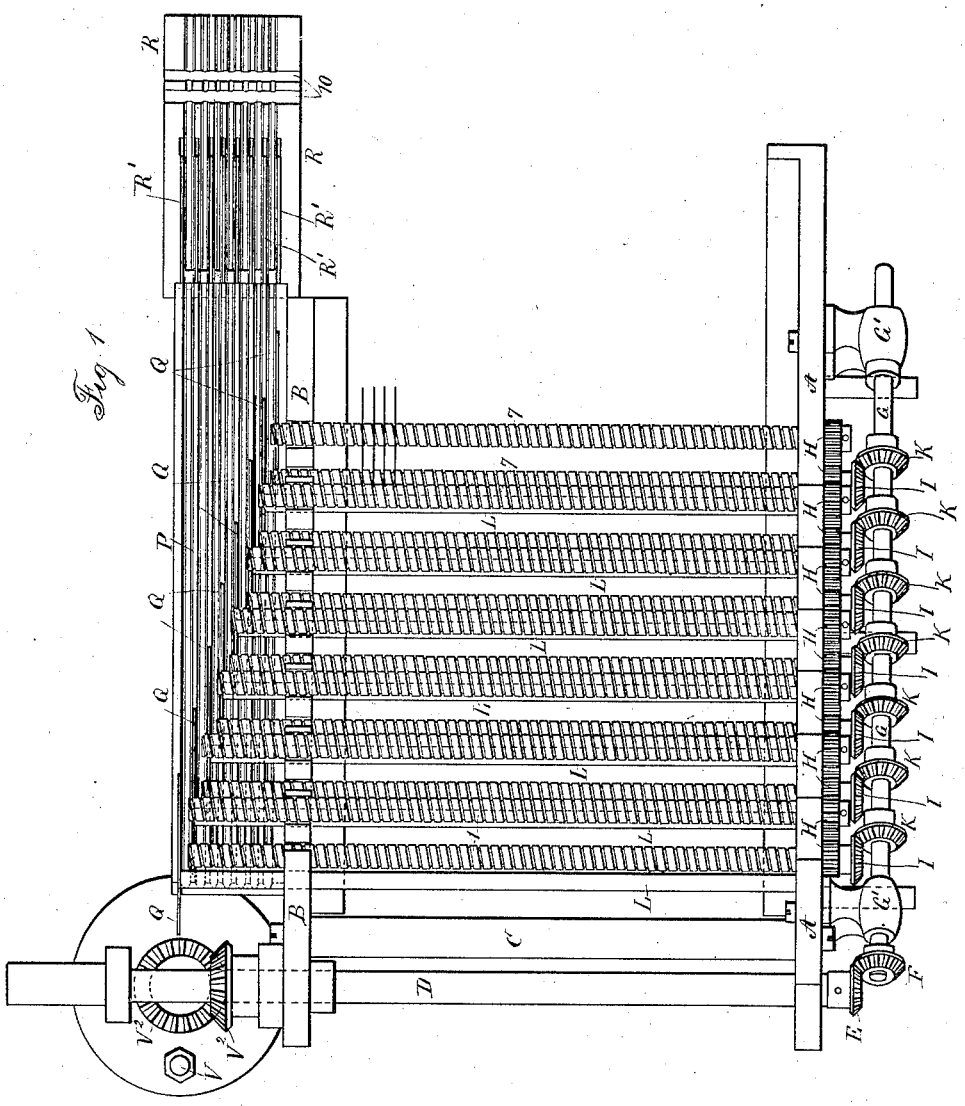
(No Model.) 3 Sheets—Sheet 1.

W. H. DAYTON.

MACHINE FOR STICKING NEEDLES.

No. 344,945. Patented July 6, 1886.

Fig 1



Witnesses:
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Chas. H. Smith

Inventor
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per Samuel W. Serrell atty.

(Photo-Lithographer, Washington, D. C.)

(No Model.) 3 Sheets—Sheet 2.

W. H. DAYTON.

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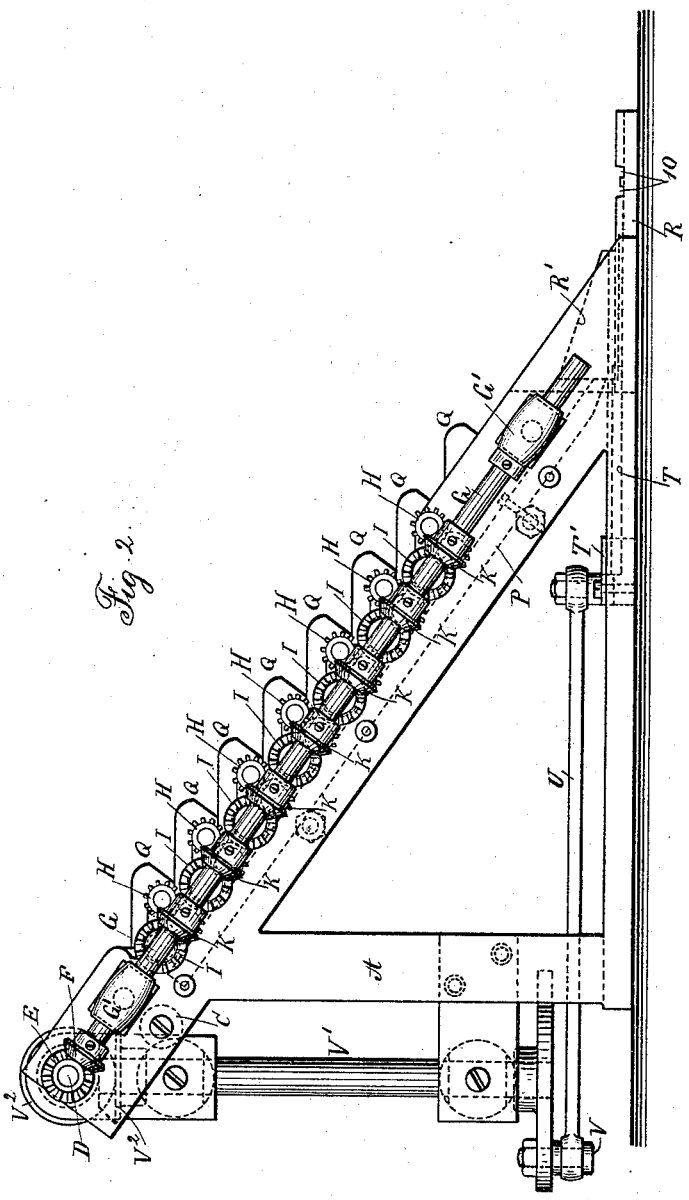
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

W. H. DAYTON.

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Fig. 4.

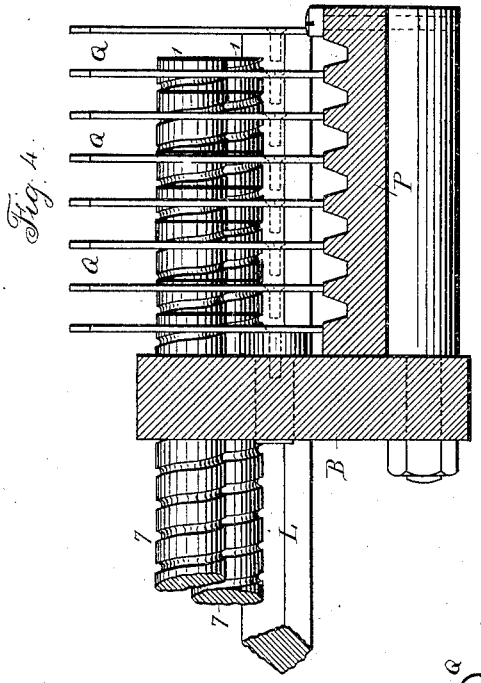

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM H. DAYTON, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO THE EXCELSIOR NEEDLE COMPANY, OF SAME PLACE.

MACHINE FOR STICKING NEEDLES.

SPECIFICATION forming part of Letters Patent No. 344,945, dated July 6, 1886.

Application filed February 15, 1886. Serial No. 191,911. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAYTON, of Torrington, in the county of Litchfield and State of Connecticut, have invented an Improvement in Machines for Sticking Needles, of which the following is a specification.

Sewing-machine needles when stuck into papers are usually of different sizes or numbers, so that each paper will contain a certain number of certain-sized needles, which is usually indicated upon the outside of the wrapper.

The object of the present improvement is to supply to the sticking mechanism one needle of each size required, and to have these needles passed off automatically and stuck into the paper. At the same time the attendant is able to place a number of one size of needles in the machine, and then place a number of the next size, and so on, thereby keeping the machine properly filled, and the needles are all open to view, so that there is no risk of the machine being improperly supplied.

In the drawings, Figure 1 is a plan view of the machine. Fig. 2 is an elevation of the gearing and frame of the machine. Fig. 3 is a section transversely of the feed-screws, and Fig. 4 is a view in larger size sectionally of the supply-slide.

The triangular frames A B are connected together by a bolt, C, and supported upon a suitable bed or table, and at the upper part of the frames is the driving-shaft D in suitable bearings, and the bevel gear-wheels E F are made use of in driving the inclined shaft G, supported by the bracket-bearings G'.

The needles are fed to the sticking devices by pairs of screws. I have shown seven such pairs of feed-screws. The needles are laid by hand in grooves in the two feed-screws of the pairs of screws. Each feed-screw has a journal going through a journal-box upon the frame A, and the screws are geared together in pairs by the pinions H H, and one shaft or journal of each pair is extended and receives a bevel-gear, I, gearing to a bevel-gear, K, upon the shaft G, before described. Near the other ends the feed-screws rest in open semicircular bearings in the frame B. The pairs of screws are arranged one above and behind the other, similar to steps, the triangular frames allowing this to be done, the object being that the needles shall lie horizontally, or nearly so, and rest in the helical grooves in the two feed-screws of the pairs of screws, and be at right angles, or nearly so, to the axes of the screws; hence the screws as they revolve with perfect uniformity by the gearing before named will pass the needles along toward the point of delivery with regularity, and the heads or shanks of the needles will rest against the stationary bars L, the feed-screws being revolved in the directions indicated by the arrows. These feed-screws being all open and easily observed, the attendant can keep the grooves of the feed-screws filled with needles, so that the needles on any pair of feed-screws will not be exhausted, but they will be replenished with needles of the respective sizes from time to time and successively. These feed-screws are not all of the same length. The pair 1 1 is longer than the pair 7 7, and the intermediate pairs decrease in length regularly, as shown. In all instances the screw-threads are in such positions to the gear-wheels that the extreme ends of the threads at the ends of the screws will all be at the tops at the same time, and consequently one needle will be pushed off the end of each pair in the entire range at the same time, or nearly so, and these needles fall into the separate grooves of the inclined slide P, and the needles are guided in their fall from the ends of the feeding-screws into the grooves of the inclined slide P by means of the partition-plates Q, that are screwed to the ends of the stationary bars L and extend down to the respective ribs of the grooved inclined slide B. There is the proper distance between each partition-plate and the ends of the two screws with which it is associated for the needles to drop down, and from the direction of inclination it will be apparent that the needles slide down such incline point first and pass into the grooves in the horizontal crimping-bed R, that correspond to those in the incline, and there are partition-plates R' extending up above the ribs in this plate to prevent the needles jumping out of place. In this bed R there are transverse grooves 10, into which the paper is pressed by a notched crimper, S, similar to the crimper in a pin-sticking machine, and by

this the paper is held in a crimped position transversely of the crimping-bed R, and I make use of pushers T, corresponding in number and positions to the grooves in the bed R, and these pushers are united to a head, T', that is moved back and forth in guides by means of the connecting-rod U and crank-pin V upon the vertical shaft V', and this shaft V' is driven at the same speed as the driving-shaft by the bevel-gears V^2.

The mechanism for actuating the crimping-bar and for feeding along the paper may be of any desired character, and, being similar to the devices used in pin-sticking machines, does not require description. The parts are timed so that the needles drop from the ends of the feed-screws at about the time the paper has been crimped. They slide down the grooved incline and pass upon the horizontal bed R, with their ends adjacent to the folds of the crimped paper. The pushers T are then moved up and force the sewing-machine needles into the paper, leaving the shanks of the needles projecting, as usual.

I claim as my invention—

1. The combination, with a crimping and sticking mechanism, of feed-screws arranged in pairs to discharge the needles from the respective pairs, and an inclined grooved slide to convey the needles to the sticking mechanism, substantially as set forth.

2. In a machine for feeding pointed wires or needles, pairs of feed-screws arranged one above the other, stationary bars for the ends of the wire to rest against, partition-plates, and an inclined grooved slide, substantially as set forth.

3. In combination with an inclined grooved slide, feeding-screws arranged in pairs, the ends of the pairs of feeding-screws being above the respective grooves in the inclined slide, substantially as set forth.

4. The combination, with the feeding-screws and inclined grooved slide, of a grooved bed, a paper-crimper, and a range of pushers passing in below the inclined slide into the grooved bed, substantially as set forth.

5. The ranges of pairs of feeding-screws and stationary bars, in combination with the pinions that connect the pairs of screws, the inclined shaft and the bevel-gears for giving motion to such screws, substantially as set forth.

Signed by me this 8th day of February, A. D. 1886.

WILLIAM H. DAYTON.

Witnesses:
CHAS. L. MCNEIL,
FRED. A. BARTLETT.