2 Sheets—Sheet 1.

J. HEBERLING.

Running-Stitch Sewing-Machine.

No. 227,249. **Patented May 4, 1880.**

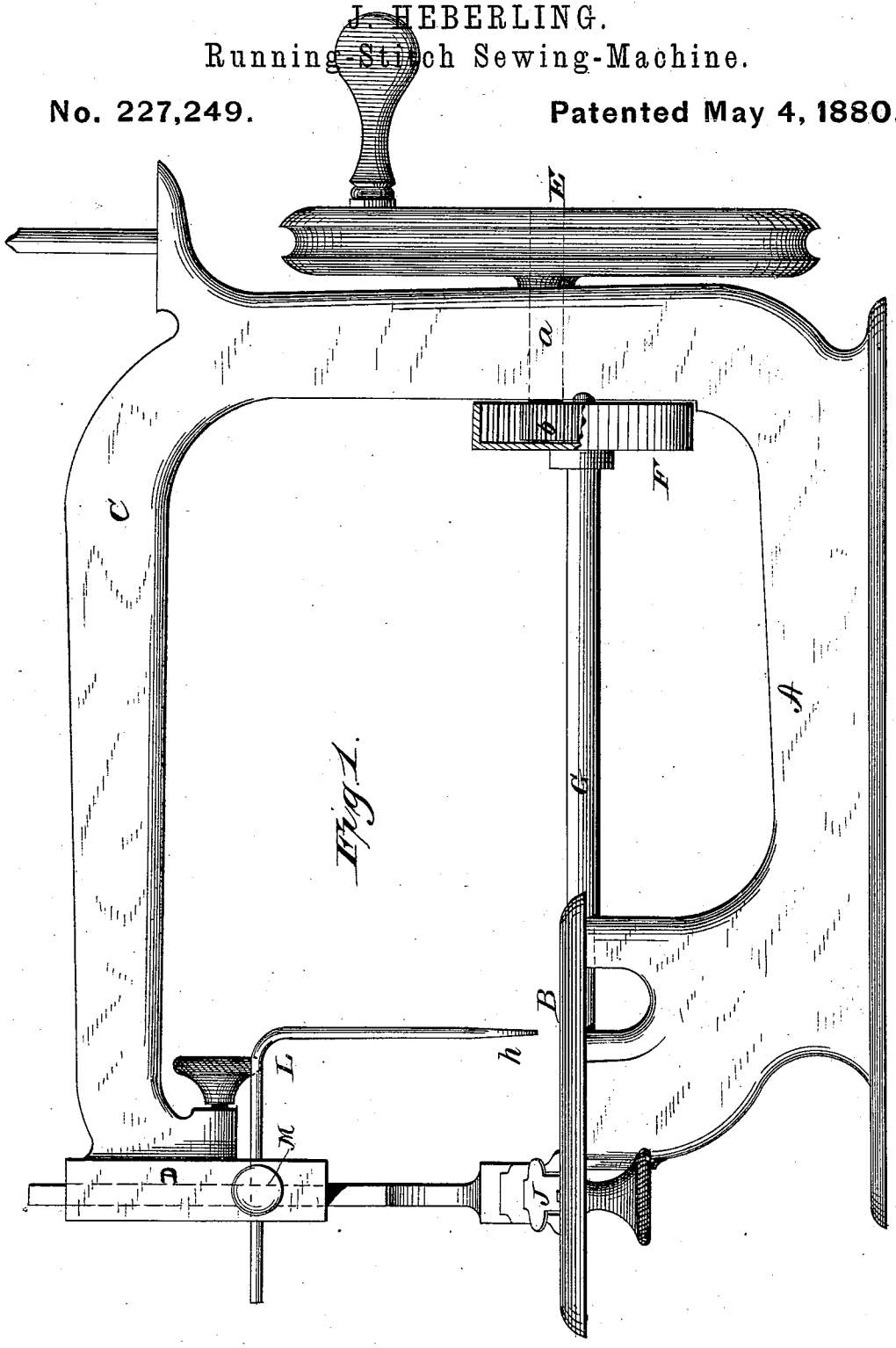

Fig. 1.

WITNESSES

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2 Sheets—Sheet 2.

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Fig. 2.

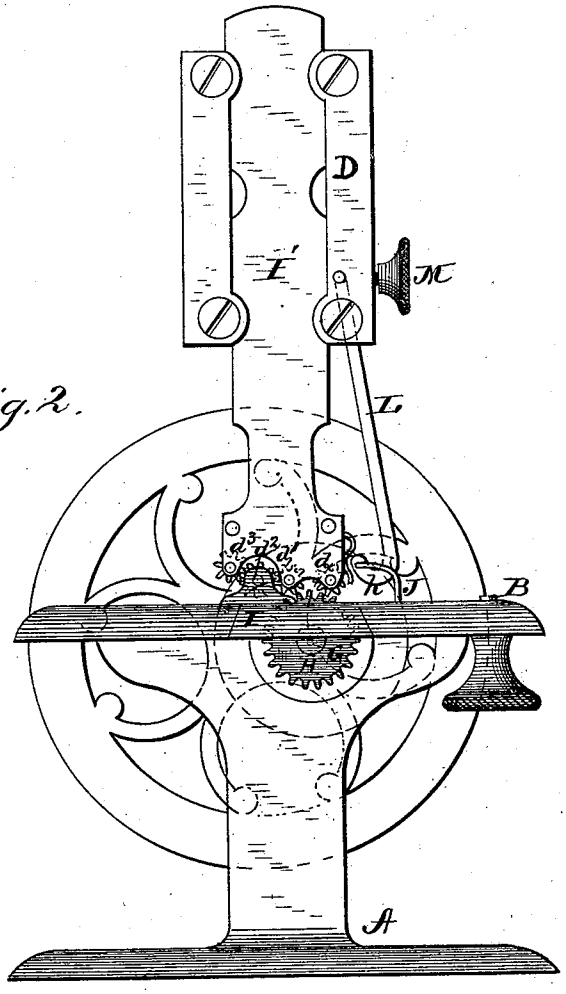
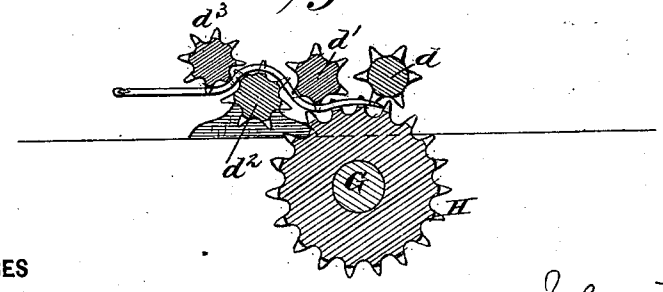


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN HEBERLING, OF MOUNT PLEASANT, OHIO, ASSIGNOR TO HEBERLING RUNNING STITCH SEWING MACHINE COMPANY, OF SAME PLACE.

RUNNING-STITCH SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 227,249, dated May 4, 1880.

Application filed October 20, 1879.

To all whom it may concern:

Be it known that I, JOHN HEBERLING, of Mount Pleasant, in the county of Jefferson, and in the State of Ohio, have invented certain new and useful Improvements in Running-Stitch Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to that class of sewing-machines which are known as "running-stitch sewing-machines," and in which a series of cogged wheels and one or more bent needles are employed; and it consists in certain improvements on such machines, as will be hereinafter more fully set forth, and pointed out in the claims.

In the class of machines to which my invention appertains it has been found by experience that certain goods become more or less injured, owing to the way in which the cogged wheels or pinions mesh together.

The object of my present invention is to obviate this difficulty, and the same is effectually accomplished, so that almost every class or texture of goods or fabrics will be perfectly uninjured by passing through the machine, and the stitches will appear exactly the same as if made carefully by hand.

In the annexed drawings, Figure 1 is a side elevation of a running-stitch sewing-machine embodying my invention. Fig. 2 is an end view of the same, and Fig. 3 is a detailed view of a part thereof.

A represents the base of the machine, supporting the table B, and provided with the arm C, which has a head, D, at its end above the table. Through the vertical portion of the arm C is passed a short shaft, *a*, which carries on its outer end a wheel, E, for operating the machine, said wheel being provided with a crank or with a circumferential groove for the passage of a belt or cord, so as to operate the machine by hand or treadle power, as desired.

On the inner end of the shaft *a* is a pinion, *b*, which meshes with an internal gear-wheel, F, on a horizontal shaft, G. This shaft passes under the table B, and upon its end is placed the large cog-wheel H, and opposite the same is a slide, I, in the table, so that said wheel can be removed from the shaft and another substituted when desired. The wheel H projects above the upper surface of the table and has a feather in its hub, which fits in a groove in the shaft, so that the wheel will turn with the shaft.

Above and in rear of the cog-wheel H is the cogged pinion d^2, mounted in suitable studs in the table. In the head D is the slide I′, which carries at its lower end the cogged pinions d' d^3 and cogged feed-pinion *d*. In operation the large wheel H drives the two pinions *d* d', d' drives d^2, and d^2 drives d^3. All the cogged wheels or pinions are grooved to receive the bent needles, and the feed-pinion *d* has its grooves cut sufficiently deep to form smooth cylindrical surfaces at the bottoms of the grooves.

The three pinions d', d^2, and d^3 are made of the same diameter; but the spaces between the ends of their cogs are diminished in size in a certain ratio from the side of the feed to the other side. The pinion d' is made, for instance, with six cogs, the pinion d^2 has seven, and the pinion d^3 has eight cogs. These pinions being of equal diameter, as stated, it follows that the increased number of cogs diminishes the size of the spaces between them. In other words, the pitch of the pinions is changed, the pitch of each separate pinion decreasing from the driver toward the point where the goods pass out of the machine.

Instead of increasing the number of cogs of the pinions, the same object may be accomplished by making said pinions of unequal diameter and with the same number of cogs—that is to say, d^2 should be smaller than d', and d^3 smaller than d^2. This inequality in diameter would, of course, diminish the size of the spaces between the ends of the cogs in the different pinions in the direction of the feed, or change the pitch, and will accomplish the same result in preventing injury to the goods.

In machines of this class as heretofore made these pinions were of equal diameter and had an equal number of cogs, or of unequal diameter with an unequal number of cogs. The driving-power was also transmitted through

one of the small pinions first. By this arrangement the meshing of the cogs in the crimping of the goods made a binding at the point of the cogs, as is usual in systems of cog-gearing. This binding at the point caused a draw of the goods, and as the cogs meshed deeper the binding increased, and thus injured the goods and frequently mutilated a certain class of textures. By my present invention this difficulty is entirely obviated. By the system of gearing I now have I leave a space between the points of the engaging gear-teeth sufficient to allow of the passage of the cloth between said points without binding. The cogs do bind, however, at a sufficient distance below the points of the gear-wheels to hold the goods firmly as they are moved up on the needles, but not high enough up to make a strain upon the goods sufficient to mutilate the same.

J represents the adjustable yielding device for smoothing the goods before entering the machine. Through the head D is passed an L-shaped arm, L, with a foot, *h*, at its lower end to act as a guide. This guide is adjustable to and from the wheels, and fastened by a set-screw, M. When not desired for use it can be thrown upward out of the way.

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

1. In a running-stitch sewing-machine of the character herein described, two or more intermeshing cogged wheels or pinions, d' d^2, made of unequal pitch, the pitch of each separate pinion decreasing from the driver to the point of exit of the goods, substantially as and for the purposes herein set forth.

2. In a running-stitch sewing-machine of the character herein described, the combination of the under front cog-wheel, H, receiving its motion directly from the driving mechanism, the feed-pinion *d*, and two or more intermeshing pinions, d' d^2, of unequal pitch, substantially as and for the purposes herein set forth.

3. In a running-stitch sewing-machine of the character herein described, the combination of the under front cog-wheel, H, a driving mechanism connected directly with said wheel, the feed-pinion *d*, one or more bent needles, and two or more intermeshing pinions, d' d^2, of unequal pitch, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of October, 1879.

JOHN HEBERLING.

Witnesses:
C. L. EVERT,
FRANK GALT.