W. PEARSON.

2 Sheets--Sheet 1.

Machine for Sewing Hosiery Seams.

No. 166,805.

Patented Aug. 17, 1875.

Fig. 1.

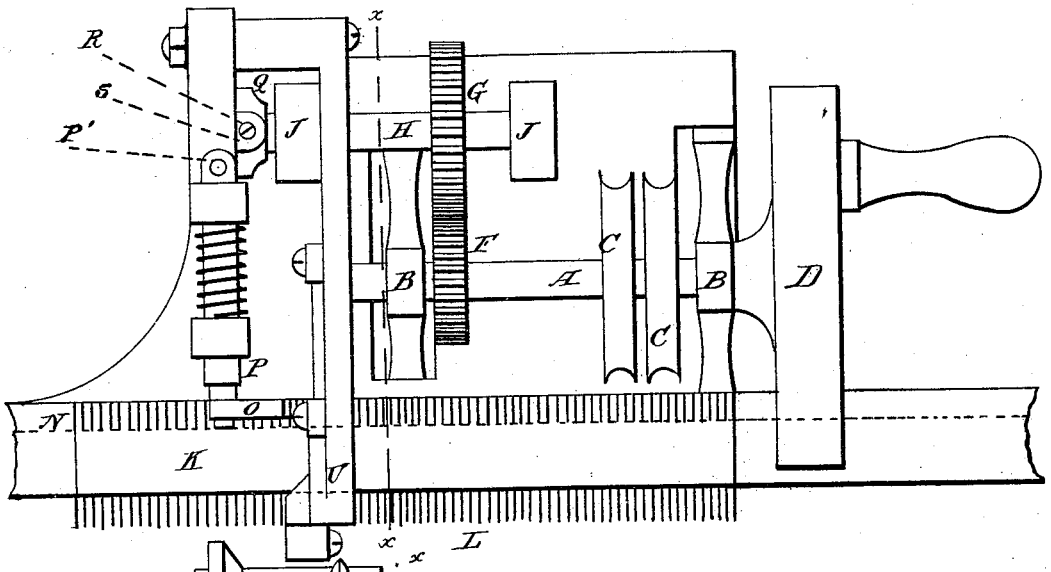
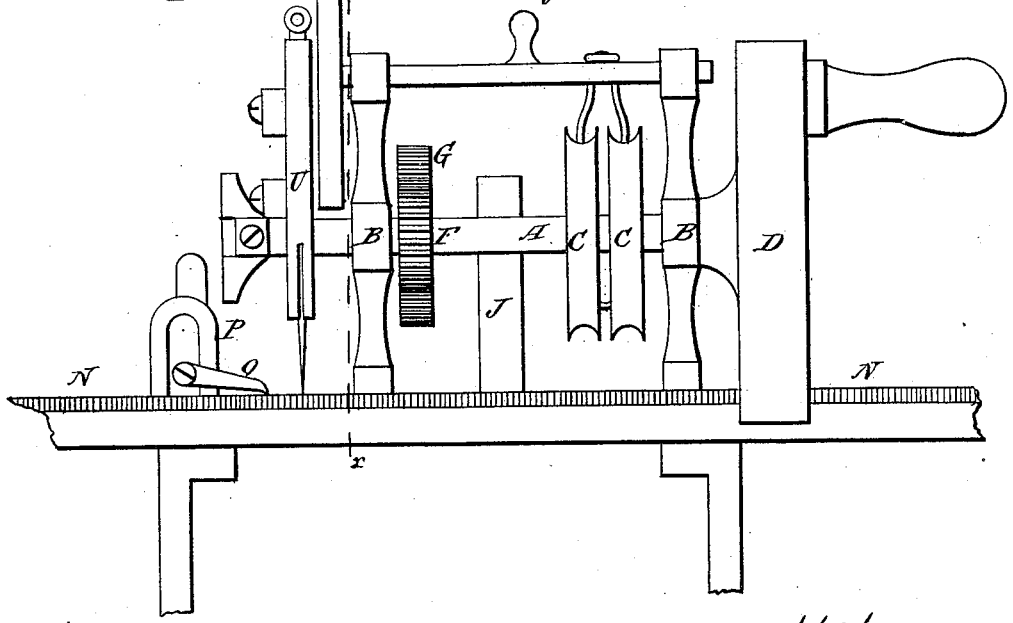


Fig. 2.



WITNESSES:
P. C. Dieterich.
H. C. Scott.

INVENTOR:
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Fig. 3.

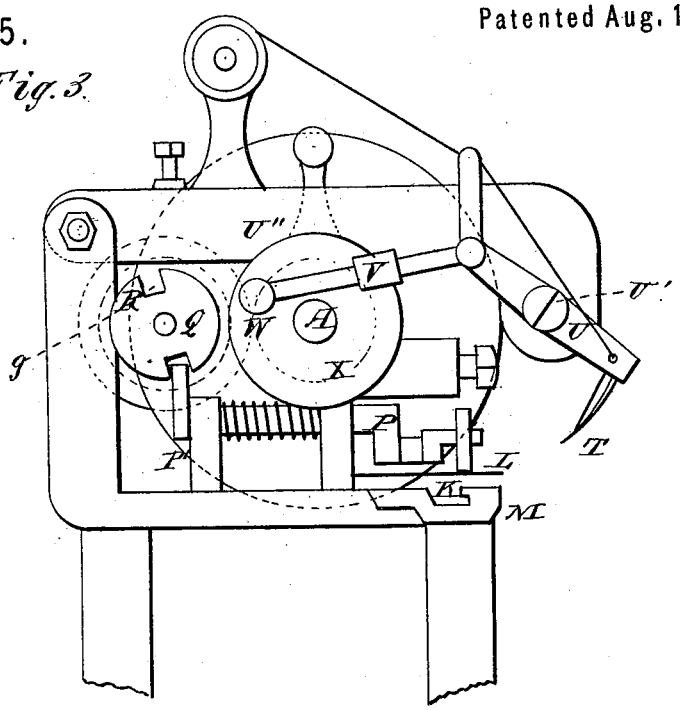
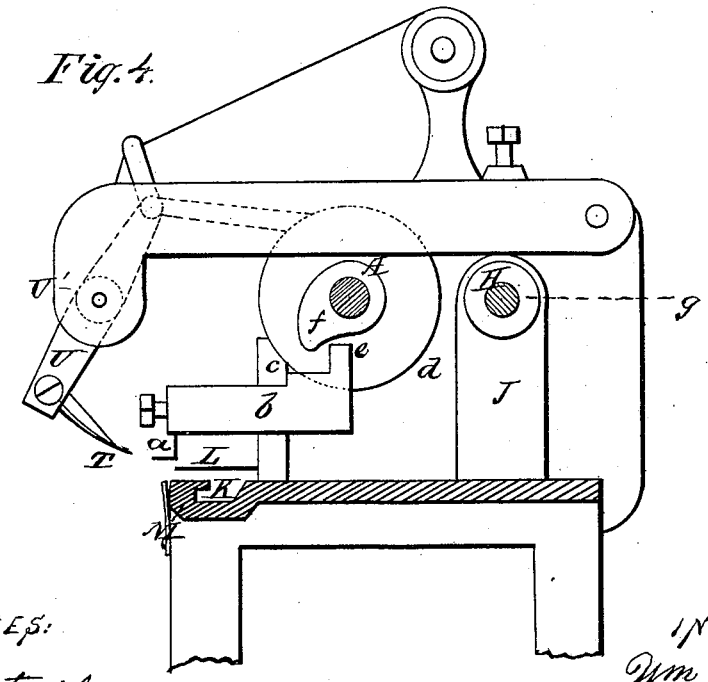


Fig. 4.



WITNESSES:
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INVENTOR:
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Lloyd Nugent

UNITED STATES PATENT OFFICE.

WILLIAM PEARSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR SEWING HOSIERY-SEAMS.

Specification forming part of Letters Patent No. **166,805**, dated August 17, 1875; application filed December 23, 1874.

To all whom it may concern:

Be it known that I, WM. PEARSON, of the city and county of Philadelphia, and State of Pennsylvania, machinist, have invented a new and useful Improvement in Machines for Sewing the Seams of Hosiery; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing and letters of reference marked thereon.

The nature of my invention consists, first, in an adjustable feeding mechanism, operating a rack-gearing grooved teeth, upon which the hosiery to be sewed is placed, so that each loop is successively presented in the proper place to be caught by the sewing-needle; second, in an arrangement of mechanism by which the fulcrum of the needle bar or lever is raised and lowered at each alternate stitch, and the stitches are thus disposed alternately through and over the edges of the parts forming the seam, and so twisted, by the combined action of the needle and looping-hook, as to render them much more secure from ripping, and presenting a seam bearing a very close resemblance to the body of the knitted fabric, and having a similar elasticity; third, my invention relates to the arrangement of the several parts of the machine, by which I am enabled, with a few working parts of strong and simple construction, always open to inspection while in operation, and of easy access for adjustment, to effect the operation of the several mechanisms which, by their combined action, perform the sewing.

Referring to the drawing annexed, which is made of one-fourth the working size, Figure 1 shows a plan. Fig. 2 shows a front elevation. Fig. 3 shows a left-side elevation, and Fig. 4 a section through the line X X in Figs. 1 and 2.

The same letters of reference apply to the same parts in the several figures.

A represents a shaft running in bearings B B, and receiving motion from a belt-pulley, C, fastened upon it. A fly-wheel, D, having a handle or crank on it, is placed at the right end of the shaft A, and serves to equalize the motion, and also affords a convenient means of turning the machine in adjusting it. On the shaft A is placed a spur-wheel, F, which, gearing into another wheel, G, of twice the diameter, fastened on the shaft H, turns the shaft H in its bearings J J with one-half of the velocity of the shaft A. A loose pulley, C′, on the shaft A serves to bear the driving belt or cord when the machine is stopped. A sliding carriage, K, having grooved needle-teeth, L, upon which the edges of the parts to be sewed together are placed, is moved progressively and intermittently, between the formation of each stitch, from left to right in a grooved guide, M, by means of rack-teeth N, coincident in distance with the needle-points L on the edge of the carriage K, operated by a pawl on the rock-shaft P, which receives motion from the cam Q on the shaft H, bearing laterally on the lever P′ on the rock-shaft P. The cam Q is made with a projection, R, adjustable laterally by a screw, S, by which means any required range of motion is attained, to suit the distance of needle-points, for sewing finer or coarser goods. The sewing-needle T is curved, with an eye near the point, and resembles in construction the ordinary sewing-machine needle. The needle T is carried on a lever, U′, vibrating on a center, U, receiving motion, through a rod, V, from a crank-pin, W, on the plate-wheel X on the shaft A. The looper *a* is curved, and vibrated in an arc in a horizontal plane by an arm, *b*, turning a pillar, *c*, and receiving its vibratory motion from the cam *d* on the shaft A. The looper *a* and arm *b* have, also, a limited reciprocating motion up and down on the pillar *c*, which motion is received, through a lever, *e*, from a cam, *f*, on the shaft A. The shaft H having but one-half the velocity of the shaft A, from which the reciprocating motion of the needle T and looper *a* is derived, each stitch is, by the action of the cam *g* on the lever U′, carrying the fulcrum of the needle-bar U alternately up and down, at each stitch, taken alternately through and above the edges of the parts to be sewed together; and, as each loop of the goods is placed upon a needle, L, and the needles L move only one tooth or point at every other stitch, each loop is united by a series of twisted loops, resembling somewhat the sewing of a chain-stitch sewing-machine. The loops form a serpentine or undulating line resembling knitting, and acquire a twist in the operation, which hinders them meas-

urably from sliding in each other and raveling, and forms a seam of great elasticity. Springs are employed to keep the several reciprocating parts that transmit motion from the cams to the feeding rock-shaft and looper-arm *b* in contact with their respective cams.

What I claim as my invention is—

1. In combination with the bed or frame, constructed as described, the rack-bar or carriage K, provided with grooved points to receive and carry the loops of the edges of knitted fabrics in pairs to be sewed together, with a feeding mechanism engaging in teeth coincident in distance with the grooved points, by which the said bar may be fed entirely through the machine, and discharged therefrom after presenting the work to the sewing mechanism, as set forth.

2. The adjustable cam Q, combined with the rock-shaft P, and pawl O, and rack-bar K, as set forth and described.

WILLIAM PEARSON.

Witnesses:
ANDREW J. BOSWELL,
S. LLOYD WIEGAND.