

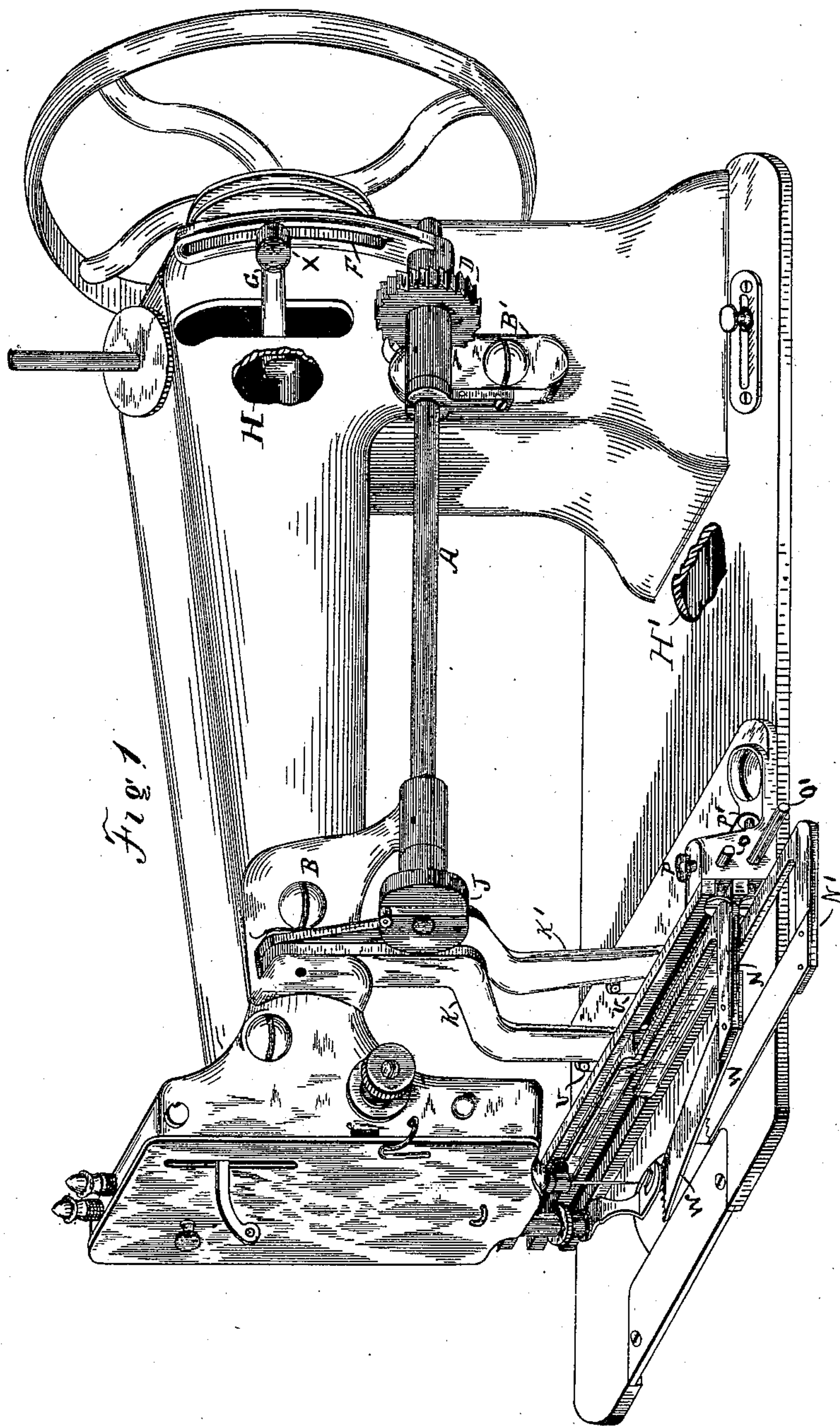
(No Model.)

2 Sheets—Sheet 1.

C. M. HINE.
PLAITING ATTACHMENT FOR SEWING MACHINES.

No. 407,400.

Patented July 23, 1889.



Witnesses.

C. D. Johnston

Geo. H. Harvey

Inventor.

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By A. C. Johnston
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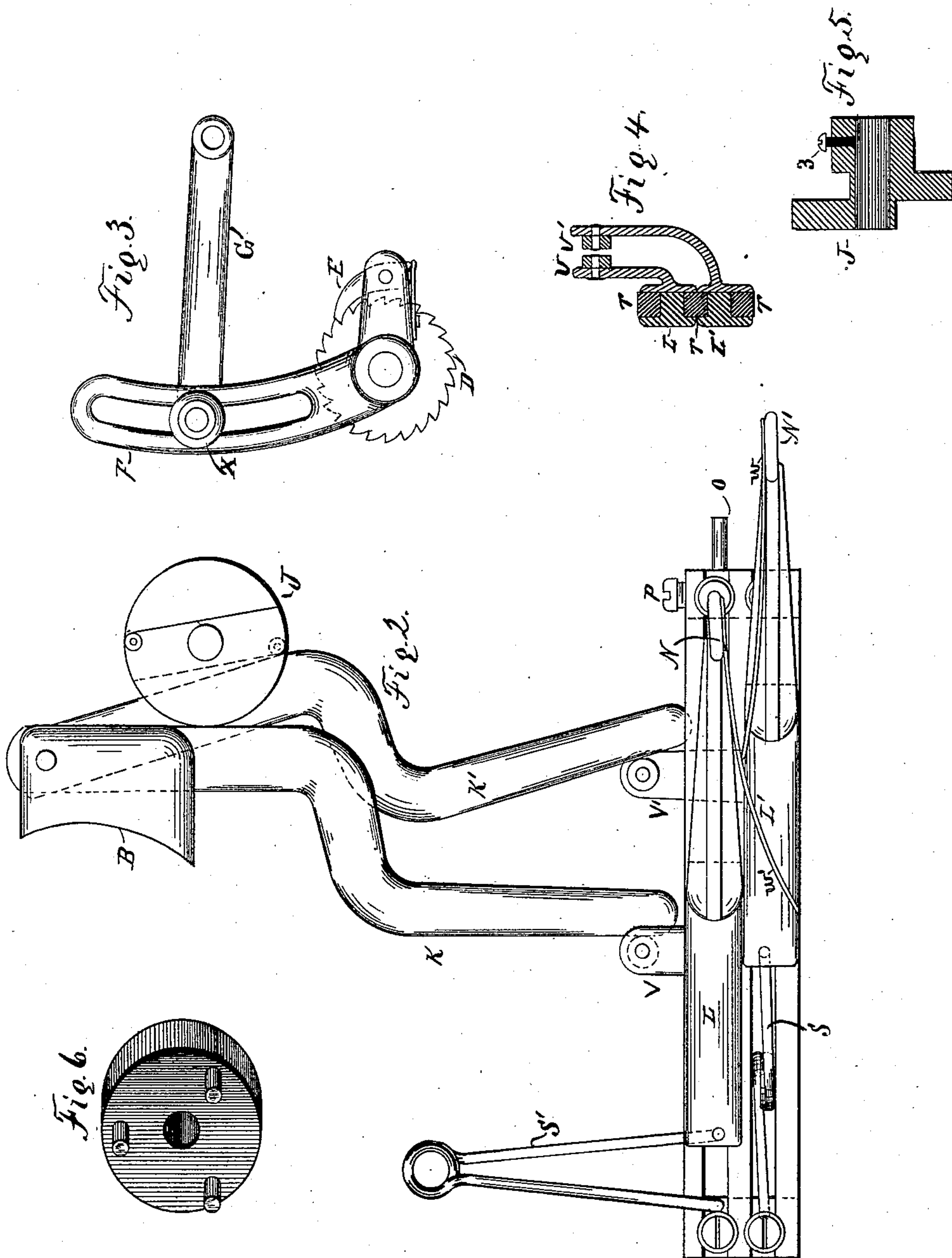
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UNITED STATES PATENT OFFICE.

CHARLES M. HINE, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CHARLES C. EMMONS, OF PITTSBURG, PENNSYLVANIA.

PLAITING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 407,400, dated July 23, 1889.

Application filed November 5, 1888. Serial No. 290,049. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HINE, of New York, (temporarily residing at Pittsburg, Pennsylvania,) in the county of Kings and State of New York, have invented a new and useful Improvement in Plaiting Attachments for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in plaiting attachments for sewing-machines; and it consists in the combination and arrangement of the parts hereinafter described, whereby one or more plaits can be made.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a perspective view of a sewing-machine, showing the manner of securing the plaiting attachment thereto. Fig. 2 is an end view of a part of the operating mechanism—viz., pivoted levers, double cam, springs, and hangers for operating the plaiting-blades. Fig. 3 is a side view of the crank, crank-lever, ratchet-wheel, and pawl. Fig. 4 is a cross-section of the guides, showing the manner of securing the hangers in the guides. Fig. 5 is a cross-section of the double cam. Fig. 6 is a modified view of a cam.

The essential features and elements of my improvements are as follows: a shaft A, parallel with the upper and lower shafts H H' of the sewing-machine, which is supported in bearings B B', attached to or cast on the sewing-machine. To said shaft A is connected a ratchet-wheel D and a slotted lever F. A link G connects the upper shaft H with the slotted lever F, and is secured in the slot of said lever by means of a stud and nut X, which link is used for changing the throw of the lever F, which imparts a rotating motion to the shaft A through the medium of a pawl E, engaging the ratchet-wheel D. The speed of the shaft A will be regulated by raising or lowering the end of the link G in the slot of the lever F. The double cam J consists of a part of two circles side by side, each circle being cut off on opposite sides in a straight line at or near

its center of rotation, which is concentric with said shaft A, to which it is fixed by means of a set-screw 3 (see Fig. 5) or by other means. Two levers K K' work in a slot made in the hanger B, and are so pivoted in said slot that they will stand side by side and vertical and in contact with the double cam. It will be seen that the rotation of the shaft A, carrying the double cam J, will impart an alternate back and forward movement to the levers K K'. The two hangers L L' work in guides horizontal with the bed of the machine and at a right angle with the shaft A, said hangers having projections N N', to which the plaiting-blades W W' are attached. On the opposite sides of the hangers are projections or pins V V', against which the vertical levers K K' strike in operating the hangers to which the plaiting-blades are attached.

It will readily be seen that the described movement of said vertical levers K K' will be transferred to the crimping-blades. The forward motion of said blades is positive, and their return movement is accomplished through the medium of two springs S S', one end of each being attached to a stationary part of the machine, the other end of each coming in contact with one of the said hangers. The movement of the plaiting-blades is regulated by means of two movable pins O O', working in holes drilled through the front boss to which the guides are fastened, the forward ends of said pins coming in contact with the hangers L L' and fastened with set-screws P P'. It is clear that said plaiting-blades, working alternately upon the upper and undersides of the goods placed between them and moved forward to the needle, will make what is known as the "box-plait," and it is obvious that if the under pin O' is moved clear forward and fastened, allowing only the upper blade to work, it will make a left-hand side plait, and if the upper pin O is moved clear forward and fastened, allowing only the under plaiting-blade to work, it will make a right-hand side plait. It will be seen that the width of the plaits will be determined by moving the pins in or out, allowing the blades to take up more or less goods. On box-plaiting it will be seen that both blades make a full movement to one revolution of the shaft A, and on side plates

only one full movement of one blade to one revolution of said parallel shaft A, which would necessitate a short stitch, to obviate which I show an extra piece (see Fig. 6) to be
5 used in the place of the double cam, and having on its face two or more pins placed equidistant from one another, said extra piece to be placed on shaft A in place of the double cam J, and set so that one vertical lever K'
10 will dwell on the circle of said piece, allowing the other lever K to come in contact with said pins, causing it to make two or more full movements to one revolution of said shaft, according to the number of said pins placed on said
15 piece.

Having thus described my improvement, what I claim is—

1. The combination, in a sewing-machine, of a plaiting attachment, and a shaft secured to
20 one side of the machine-arm and connected by link and lever to the operating mechanism of the machine, the ratchet secured to said shaft and the pawl therefor, with a cam on the forward end of said shaft for imparting inter-

mittent motion to the vertical levers K K' of
the plaiting attachment, whereby said plaiting attachment is operated, substantially as described.

2. The combination of the operating mechanism of a sewing-machine with the shaft A, link C, slotted lever F, ratchet D and pawl
30 therefor, cam J, the levers K K', receiving intermittent motion from said cam, and a plaiting attachment operated by said levers, substantially as described.

3. In combination with the operating mechanism of a sewing-machine, the shaft A, having the cam J and ratchet-wheel D, link G, and slotted lever F, the vertical levers K K', hangers L L', and plaiting-blades having regulating-pins O O', substantially as herein described.

In testimony whereof I have hereunto set my hand this 1st day of November, A. D. 1888.

C. M. HINE.

Witnesses:

A. C. JOHNSTON,
GEO. H. HARVEY.