N. WILSON.

RUFFLING OR PLAITING ATTACHMENTS FOR SEWING-MACHINES.

No. 190,399. Patented May 1, 1877.

FIG 2.

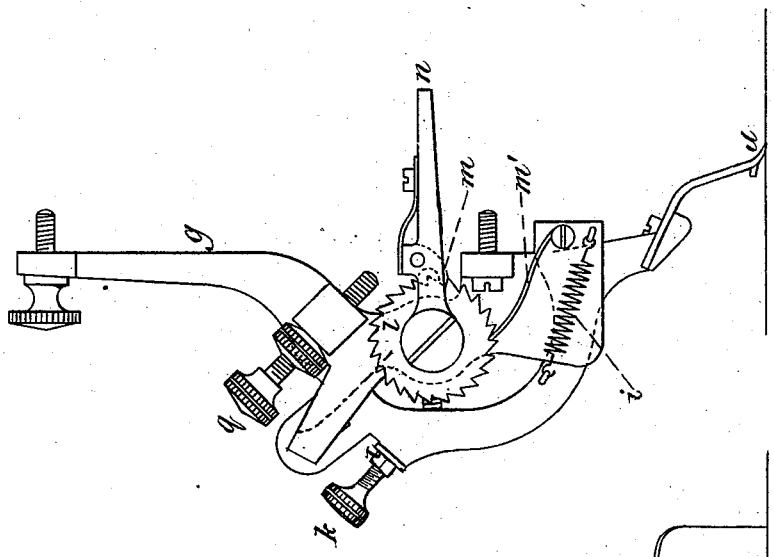


FIG 3.

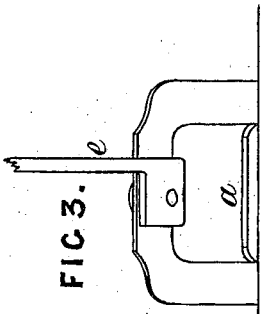
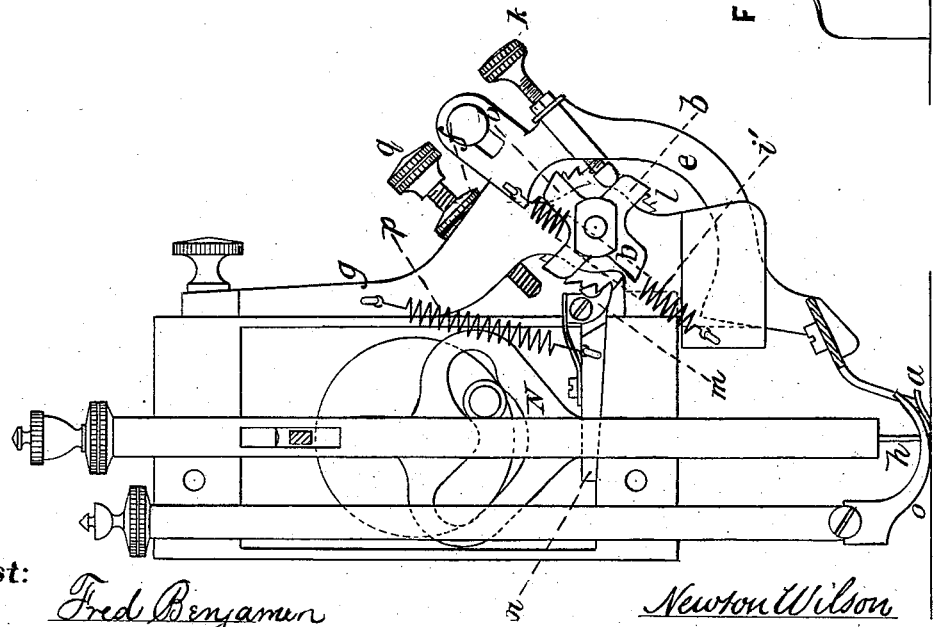


FIG 1.



Attest:

Fred Benjamin

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UNITED STATES PATENT OFFICE.

NEWTON WILSON, OF HIGH HOLBORN, ENGLAND.

IMPROVEMENT IN RUFFLING OR PLAITING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **190,399**, dated May 1, 1877; application filed February 6, 1877.

To all whom it may concern:

Be it known that I, NEWTON WILSON, of High Holborn, in the county of Middlesex and Kingdom of England, Sewing-Machine Manufacturer, have invented an improved appliance to be used in connection with sewing-machines for the production of ruffled or plaited work, of which the following is a specification:

The object of my invention is to produce, in an expeditious and perfect manner, in a sewing-machine, ruffled or plaited work suitable for trimmings and other purposes, without the necessity for skilled operators, and consists of a peculiar combination and arrangement of parts constituting the plaiting device.

Figure 1 of the accompanying drawings is a front elevation, with the cap removed, of a portion of an "improved Singer" sewing-machine, showing the application thereto of my peculiar ruffling or plaiting appliance. Fig. 2 is a corresponding elevation of the opposite side of the said appliance, detached from the machine, and Fig. 3 is a detail back elevation of the knife-edged bar or plaiting-blade.

In carrying out my invention I attach the hereinafter-described appliance, by screws or otherwise, so as to be readily removable, to the head of any suitable sewing-machine, as shown clearly in Fig. 1. *a* is a reciprocating knife-edged bar or blade. *b b* represent any desired number of revolving tappets, cams, or wipers mounted on an axis, and rotated by a pawl-and-ratchet motion, which is driven from any convenient part of the sewing-machine, the said tappets acting directly upon the lever which carries the ruffling or plaiting blade, and not through the intervention of any other intermediate appliance. *e* is the lever which carries the knife-edged bar or plaiting-blade, and works by a slot in its upper end, so as to have a moving fulcrum on a pivot, *f*, in the fixed bracket or frame *g* of the attachment. This lever *e* is held in a forward position, or drawn toward the needle *h* of the machine, by a spring or springs *i*, Fig. 2, while it is drawn downward so as to bring the blade *a* upon the fabric by the action of the spring *i'*, Fig. 1. An adjustable screw or finger, *k*, is fitted into the lever *e*, and is directly acted upon by the revolving tappets *b*, one or more of which may be employed. The axis of these tappets or wipers is carried in the bracket or frame *g* of the attachment, and has a ratchet-wheel, *l*, mounted thereon, which is actuated by a spring-pawl, *m*, Fig. 1, carried by the lever *n*, and held stationary after each movement by the spring-detent *m'*. The lever *n* may derive its vibrating motion either by the direct contact therewith of the bottom of the needle-cam N, as shown in Fig. 1, or by being connected or yoked to the needle-slide itself, or worked from the vibrating needle-lever when such is employed. At each descent of the needle the pawl *m* turns the ratchet-wheel *l* one or more teeth, according to the position of the adjustable stop-screw *q*, and thereby causes the tappets *b* to revolve the detent *m'*, retaining the wheel stationary in the position to which it is moved. As each tappet passes the end of the adjustable screw or finger *k*, it lifts the knife-edged bar or plaiter *a* clear of the fabric, and at the same time moves it backward or away from the needle. When the tappet has passed the end of the screw *k*, the lever *e* is released, and the blade *a* is pressed down onto the fabric by the action of the spring *i'*, Fig. 1, while at the same time the spring *i*, Fig. 2, draws the blade forward toward the needle, so as to cause it to tuck a fold, ruffle, or plait under the front of the ordinary presser-foot *o*. By changing the number of tappets in the tappet-wheel, or by adjusting the stop-screw *q*, it is obvious that the fullness of the work may be varied, as the greater the number of tappets, or the smaller the intervals at which they operate, the greater will be the number of plaits for any given number of stitches. Moreover, by varying the throw of the said tappets by adjusting the screw *k* toward or from them, the throw of the plaiter may be also varied, and consequently plaits of any given depth of fold may be produced, and this apart from the variation which would be obtained by increasing or diminishing the length of stitch. In some cases it may be convenient to employ different patterns of tappet-wheels, to be changed according to the nature of the work required. The upward or return stroke of the pawl-lever *n*, which is represented as being accomplished by the action of the spring *p*, Fig. 1, is regulated or controlled, as already explained, by the adjustable stop-screw *q*,

whereby the pawl will be caused to take fewer or more teeth at each stroke, thereby varying the fullness of the plaits or ruffles. If preferred, a positive up-and-down motion may be imparted to the lever *n* direct from the needle-slide, or other convenient moving part of the machine, in which case the spring *p* and stop-screw *q* may be dispensed with.

I am aware that it has been proposed to employ a ratchet device, in combination with a bell-crank lever, for the purpose of throwing a separate spring-lever into or out of action in plaiting appliances, and therefore I lay no claim to a ratchet-and-pawl motion when so applied, but—

I claim as my invention—

1. The frame *g*, adapted to be secured to the side of the needle-arm of a sewing-machine, and carrying the lever *e*, to which the ruffling or plaiting blade *a* is attached, cams *b*, ratchet *l*, and pawl-lever *n*, arranged to be operated by the needle-bar, all as set forth.

2. The slotted lever *e*, with its moving fulcrum at *f*, the bar or blade *a*, and adjustable screw or finger *k*, in combination with the revolving tappets, cams, or wipers *b*, ratchet-wheel *l*, pawl-lever *n*, the spring *p*, and adjustable stop-screw *q*, all arranged to operate together, substantially in the manner and for the purpose hereinbefore described.

In witness whereof I have signed my name in the presence of two subscribing witnesses.

NEWTON WILSON.

Witnesses:

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