

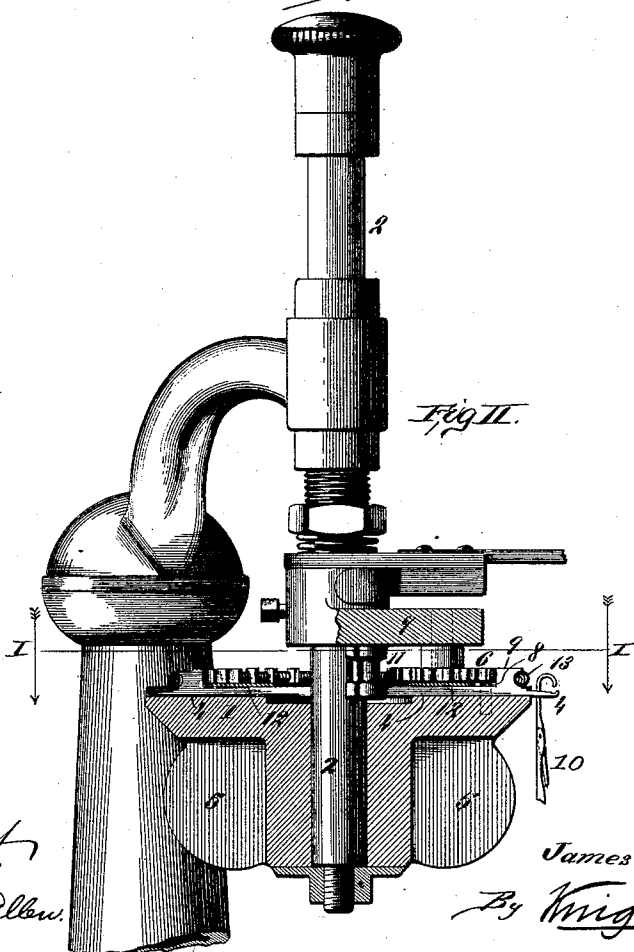
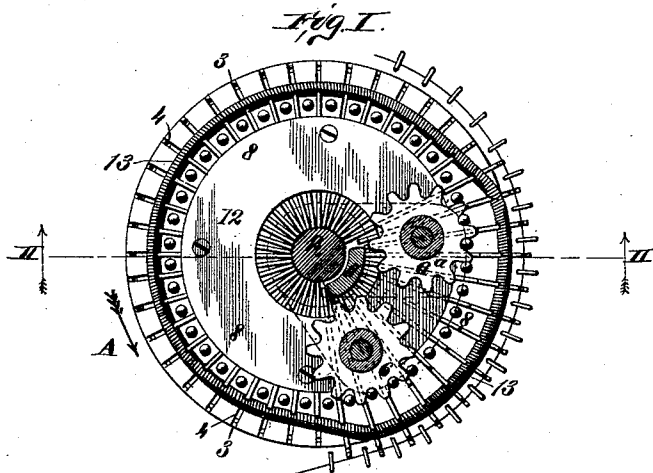
(No Model.)

2 Sheets—Sheet 1.

J. WHITELAW.
ATTACHMENT FOR KNITTING MACHINES.

No. 484,749.

Patented Oct. 18, 1892.



Attest:
W. E. Allen.
Walter E. Allen.

Inventor:
James Whitelaw
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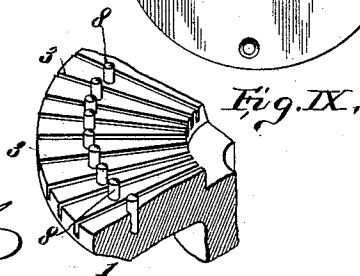
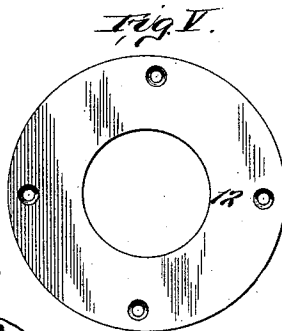
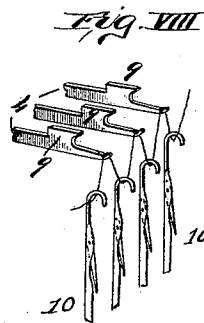
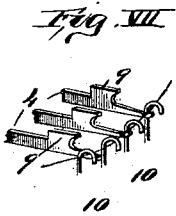
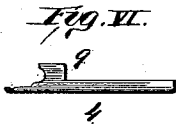
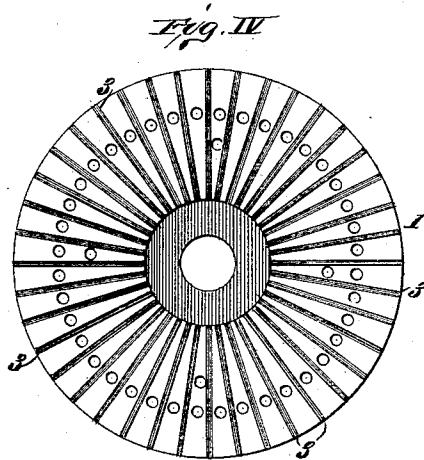
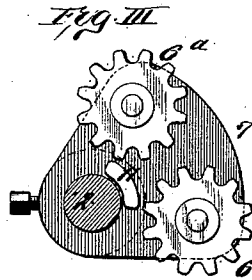
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2 Sheets—Sheet 2.

J. WHITELAW.
ATTACHMENT FOR KNITTING MACHINES.

No. 484,749.

Patented Oct. 18, 1892.



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UNITED STATES PATENT OFFICE.

JAMES WHITELAW, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE ST. LOUIS
POLAR PLUSH LINED SOCK COMPANY, OF SAME PLACE.

ATTACHMENT FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 484,749, dated October 18, 1892.

Application filed August 4, 1892. Serial No. 442,161. (No model.)

To all whom it may concern:

Be it known that I, JAMES WHITELAW, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Attachments for Knitting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the same general construction of knitting-machines as that shown in Letters Patent of the United States No. 37,161, issued to William B. Evans December 16, 1862.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a horizontal section taken on line I I, Fig. II, looking in the direction of the arrows, and which is illustrative of my invention. Fig. II is partly in elevation and partly in vertical section, taken on line II II, Fig. I, looking in the direction of the arrows. Fig. III is a bottom view of the pinions and their supporting-arm, the supporting-spindle being shown in section. Fig. IV is a top view of the pin plate or dial. Fig. V is a top view of the disk for holding the pins in their grooves in the plate or dial. Fig. VI is a side view of one of the pins. Figs. VII and VIII are perspective views illustrating the operation of the pins. Fig. IX is a detail perspective view of the pin plate or dial, showing the studs for engaging and driving the pinions.

Referring to the drawings, 1 represents a pin plate or dial, and 2 a fixed spindle or arbor upon which the dial is loosely mounted. The dial is provided with radial grooves 3 on its upper face to receive pins 4, which are adapted to move endwise in said grooves. The dial is also provided with ears 5, which are adapted to be engaged by an ear on the needle cylinder or plate, (not shown,) as in the patent referred to.

The parts thus far mentioned, except the pins 4, are the same as the corresponding parts in the Evans patent mentioned. My invention relates to the manner of moving the pins 4, which is accomplished by means of two pinions 6 6^a, journaled to an arm 7, rigidly

mounted on the fixed spindle 2. As the dial revolves the pinions are turned on their journals by studs 8, projecting upwardly from the face of the dial (see Figs. I and IX) and which engage the teeth or cogs of the pinions, as shown in Fig. 1. As the dial and pinions are thus turned on their respective centers the teeth of the forward or near one of the latter engage against shoulders 9 on the pins 4 and force the pins outwardly, as illustrated in Fig. I—as, for instance, supposing the dial to be turning in the direction of the arrow A, Fig. I, the teeth of the pinion 6 will come against the shoulders of the pins and force the pins outwardly, and if the dial is turning in the other direction the teeth of the pinion 6^a will come against the shoulders of the pins and force the pins outwardly. After the pins are thus forced outwardly they have to be retained in this position for a short time while the stitches are being formed by the needles 10 of the needle-cylinder, corresponding with the so-called "needle-plate" A of said Evans patent, and this is done by a downwardly-extending projection 11 on the inner end of the arm 7 and against which the inner ends of the pins ride while the dial is turning a portion of its revolution, as will be readily understood. The centers of the pinions 6 6^a are placed near enough together so that the pins will ride on the projection 11 until they have passed the centers of the pinions—that is to say, from one pinion to the other, as indicated in Fig. I. The pins are held in the grooves of the dial by a disk 12. (See Figs. II and V.)

13 represents a spring for forcing the pins inwardly after they leave the pinions and the projection 11.

My improved device for imparting radial movement to the dial-pins 4 is manifestly adapted to operate the dial-needles for making ribbed goods, as described in the Evans patent mentioned. By using pins 4, as shown, instead of the hooked dial-needles or ribbing-needles of the said Evans patent, looped goods, like those described in United States Letters Patent No. 84,473, issued December 1, 1868, to Dana Bickford, are produced.

By providing the two pinions 6 6^a reciprocating knitting may be done—as, for instance,

on the heel of a sock—by turning the machine partially around in opposite directions, the pinion 6 first acting to throw the pins out, and then the pinion 6^a acting to throw the pins out when the machine is turned in the other direction.

I claim as my invention—

1. In a knitting-machine, the combination of a dial, pins arranged to move endwise on the dial, a pinion having a fixed relation to the dial and adapted to be turned upon its center to force the pins outwardly on the dial, independent means for holding the pins in their outward position during a portion of the revolution of the dial, and means for retracting the pins, substantially as and for the purpose set forth.

2. In a knitting-machine, the combination of a dial, pins arranged to move endwise on the dial, a fixed spindle or arbor upon which the dial is loosely mounted, an arm fixed to said spindle, a pinion journaled to the arm, a projection on the arm, and means for retracting the pins, said pinion being adapted to force the pins outwardly on said dial, and said projection being adapted to retain the pins in their outer position during a portion of the revolution of said dial, substantially as and for the purpose set forth.

3. In a knitting-machine, the combination of a dial, pins arranged to move endwise on the dial, a pair of pinions having a fixed relation to the dial and adapted to turn upon

their centers to force the pins outwardly on the dial, means for holding the pins in their outer position while passing from one pinion to the other, and means for retracting the pins, substantially as and for the purpose set forth.

4. In a knitting-machine, the combination of a dial, pins arranged to move endwise on the dial, a spindle or arbor upon which the dial is loosely mounted, an arm rigidly secured to the spindle; a pair of pinions journaled on said arm, a projection on said arm between said pinions, and means for retracting the pins after they have passed said pinions and projection, substantially as and for the purpose set forth.

5. In a knitting-machine, the combination of a dial provided with studs, pins arranged to move endwise on the dial, pinions having a fixed relation to the dial and adapted to be turned upon their centers by said dial-studs to cause them to engage said pins and move them outwardly, means for holding the pins in their outer position while they pass from one pinion to the other, and means for moving the pins inwardly after they have passed said pinions, substantially as and for the purpose set forth.

JAMES WHITELOW.

In presence of—

ED. S. KNIGHT,
ALBERT M. EBERSOLE.