

(No Model.)

J. BRADLEY.

THREAD GUIDE MECHANISM FOR KNITTING MACHINES.

No. 270,276.

Patented Jan. 9, 1883.

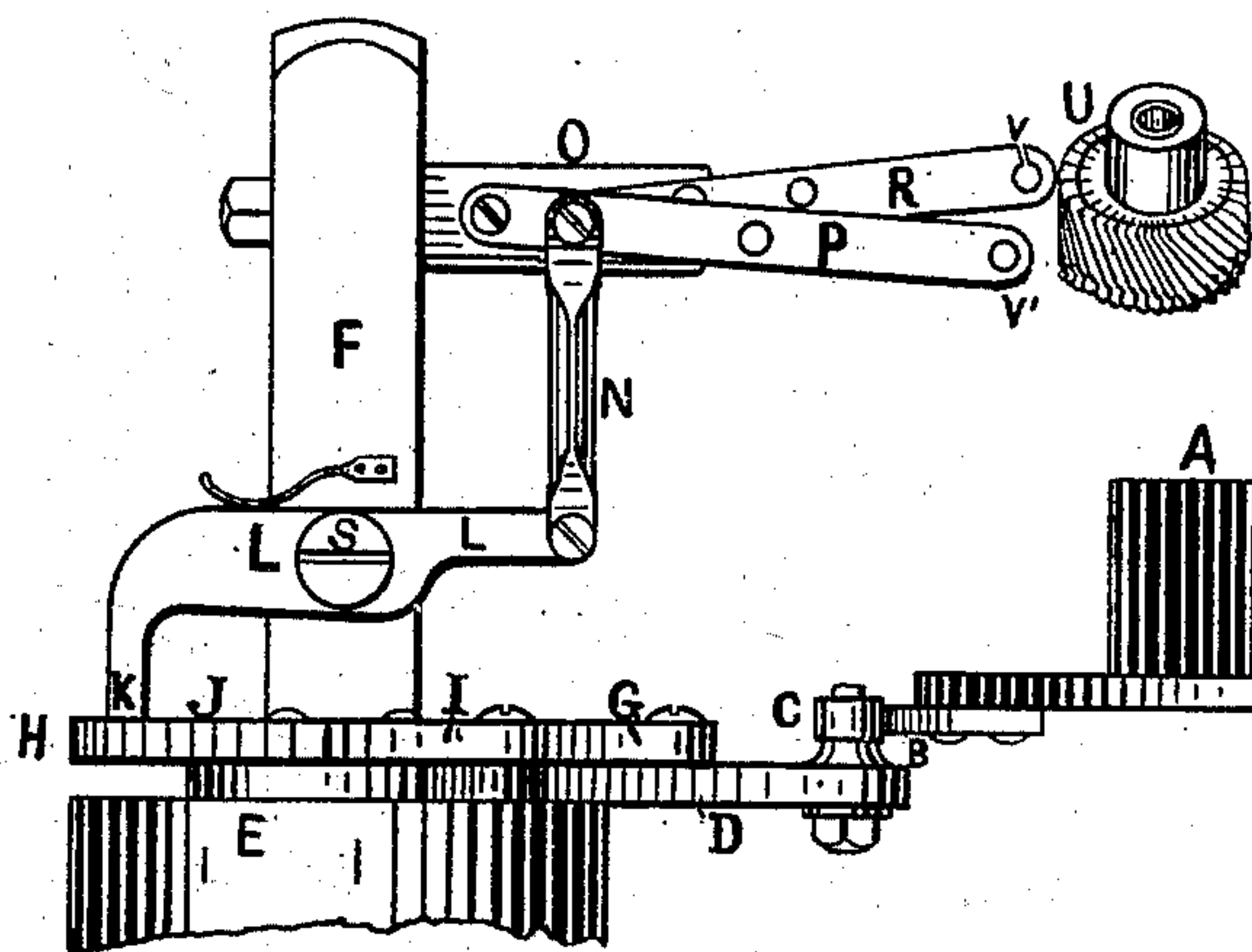


Fig. 1.

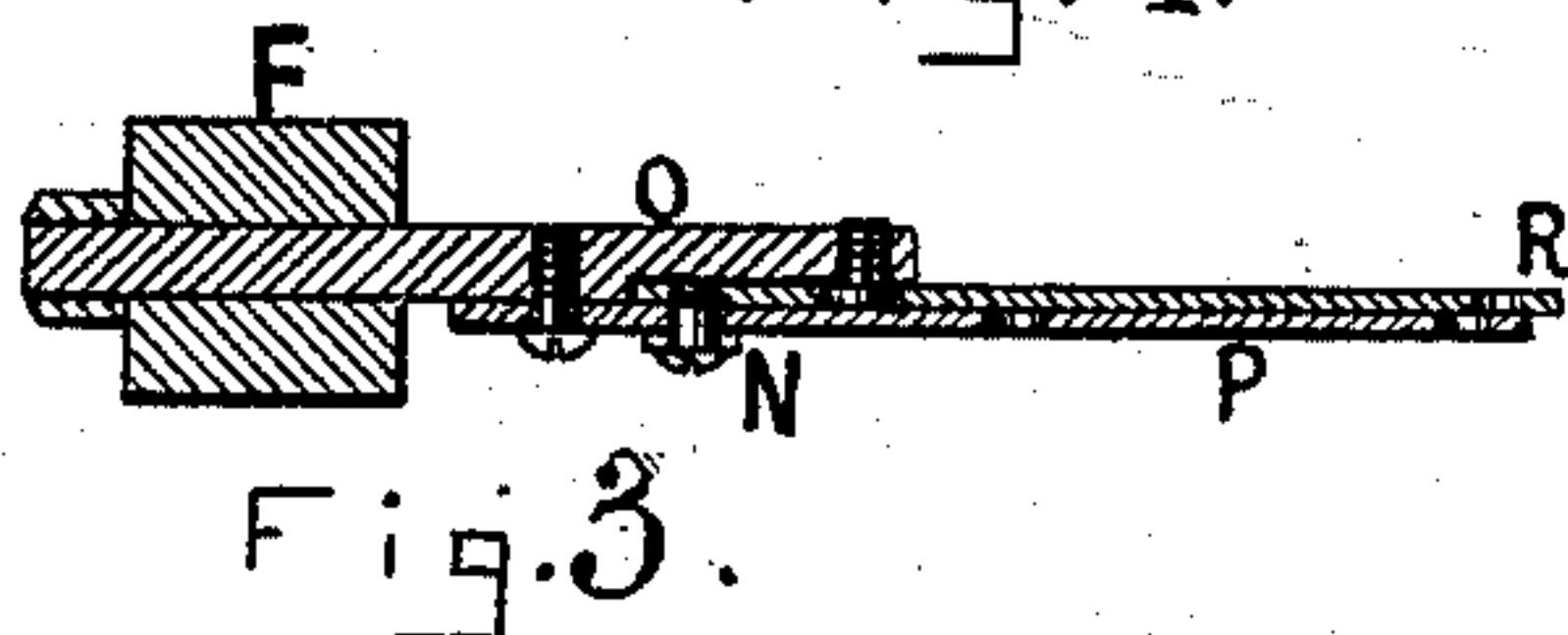


Fig. 3.

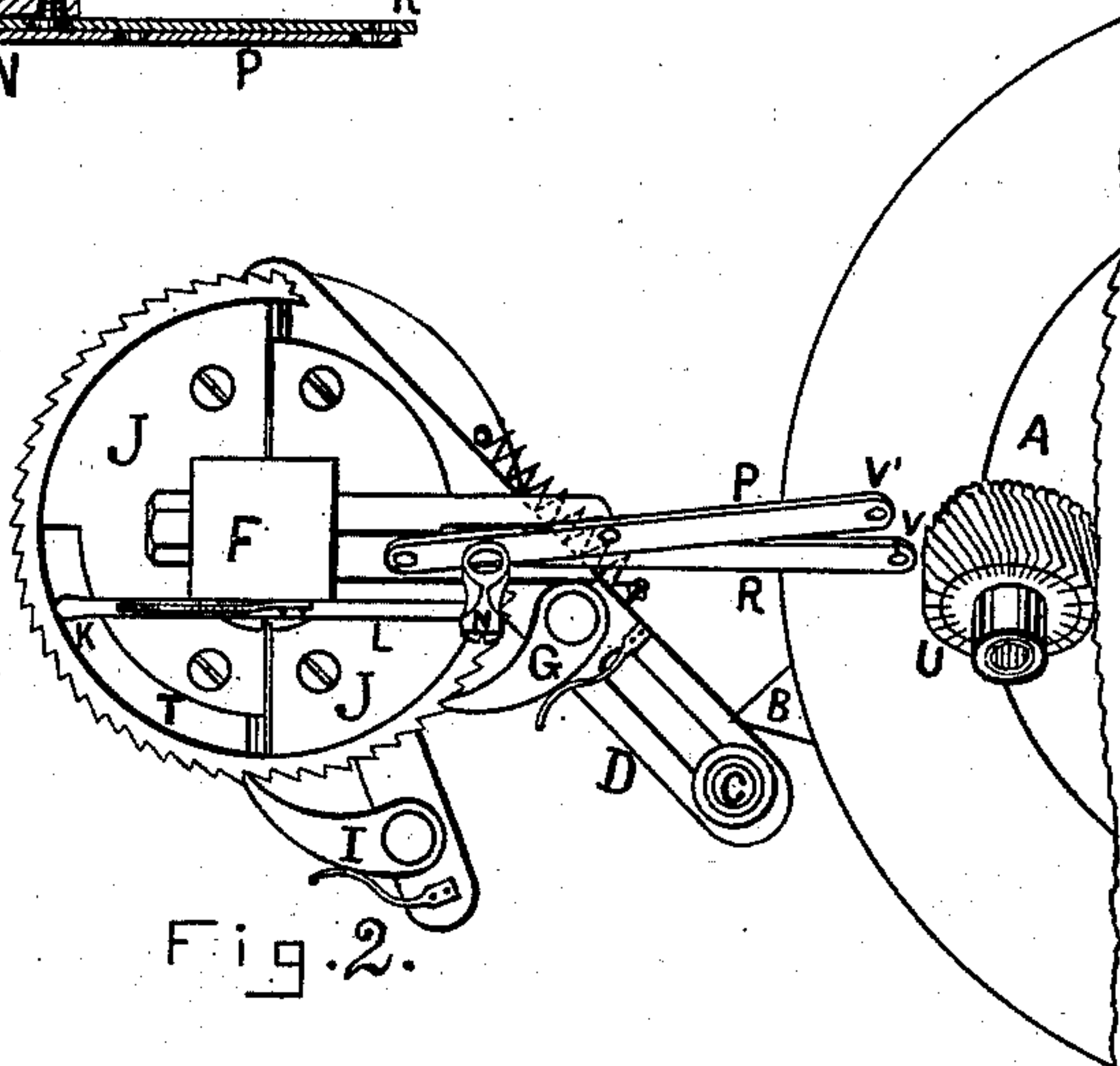


Fig. 2.

WITNESSES:

*James F. Dorsey*

*W. R. Marble*

INVENTOR:

*John Bradley*  
*Sylvester Walker*  
*Attorney*



# UNITED STATES PATENT OFFICE.

JOHN BRADLEY, OF NORTH CHELMSFORD, MASSACHUSETTS.

## THREAD-GUIDE MECHANISM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 270,276, dated January 9, 1883.

Application filed April 19, 1882. (No model.)

*To all whom it may concern :*

Be it known that I, JOHN BRADLEY, of North Chelmsford, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Thread-Guide Mechanism for Knitting-Machines, of which the following is a specification.

The object of my invention is to provide a  
10 cheap, simple, convenient, efficient, and durable mechanism for guiding two threads of varying or different colors simultaneously and continuously into the beards of the needles and changing or controlling the position of  
15 such threads in the fabric for the purpose of producing stripes by intermittingly changing the positions of the thread-guides, as hereinafter described in detail.

Figure 1 represents an elevation of a thread-guide mechanism constructed according to my  
20 invention. Fig. 2 represents a plan of the same. Fig. 3 is a longitudinal section of thread-guides and parts to which they are immediately attached.

A represents a portion of a needle-cylinder  
25 of a spring-needle circular-knitting machine, to which my thread-guide mechanism is more particularly adapted.

In order to actuate my device, a projecting bevel-edge or incline-faced plate, B, is secured  
30 beneath the needle-cylinder, so that each revolution of the same shall bring the said striker-plate B into contact with the adjustable friction-roll C, provided near the outer projecting end of the horizontal spring-actuating arm D,  
35 pivoted at its inner or opposite end to the upper face of the cylinder or plate E. Said cylinder is connected with the frame of the machine, and is provided with a journal-bearing at the lower end portion of the vertical stud  
40 or post F, and upon which journal the ratchet-wheel H is revolved by the intermittent movement of the said actuating-arm D, which is provided with a spring-pawl, G, arranged to engage with the circumferential teeth of the said  
45 ratchet-wheel H, which is secured against movement backward or in the opposite direction by a spring-pawl, I, arranged to engage with the said ratchet-wheel when the said pawl G is disengaged, and caused to move back over its  
50 teeth by the action of the spring of the said

actuating-arm D. To the upper surface of the said ratchet-wheel H is detachably connected one or more cam-plates, J, provided with one or more openings or depressions, T, from which,  
55 when the said cam-plates J are revolved horizontally by the ratchet-wheel H, the vertical lower end portion, K, of the horizontal lever L, pivoted to the said stud or post F, is caused to rise upward by the said cam-plates J, and  
60 its opposite end is forced downward, carrying therewith the vertical connecting-rod N, pivoted thereto at its lower end, its upper end being pivoted to the thread-guide P, which is  
65 pivoted at its rear end to the arm O, extending horizontally from the said stud or post F near its upper end, and to the said arm O, near its  
70 outer end, is pivoted the thread-guide R, its rear end being pivoted to the said thread-guide P at the point. The said vertical connecting-rod N is pivoted at the opposite side thereof. The said  
75 lever K L, being provided at its pivotal bearing S on said stud or post F with a coiled or suitable flat spring, holds the vertical end portion, K, of the said arm L in contact with the  
80 upper surface of the said cam-plates J, said coiled or suitable flat spring returning the end portion, K, instantly within the depressions or openings T, formed in said cam-plates, and thus  
85 changes the positions of the threads passing through the eyes V V', formed through the guide plates P R near their ends, which pass each other in arcs of circles, so as to convey  
90 one thread to the upper and the other to the lower section or portion of the loop-wheel U. The shifting of the thread-guides P and R by the movement of the lever K L, actuated by  
95 the cam-plates J T and the coiled or suitable flat spring, changes the color of the stripes by shifting the threads or carrying each to the other's position on the loop-wheel, thus forming  
stripes corresponding with the formation of the cam plates or surfaces J and T, as above described, and shown in the drawings. By  
this construction a positive movement is given to the thread-guides. The mechanism is very  
much simplified and reduced in cost, and also rendered more durable than heretofore employed for the purpose.

The operation of my invention is as follows:  
The vibratory thread-guides are to be supplied



with differently-colored threads or yarns, which are passed simultaneously into the beards of the needles by the usual loop-wheel or stitch-wheel, U. The alternate and intermittent rising and falling of the thread-guides raises one thread above the other alternately, each thread being retained in its elevated position during a definite number of revolutions of the needle-cylinder by a proper adjustment of the actuating mechanism of the thread-guides in the manner before described. The elevation of the thread-guide increases the tension on its respective thread, and thus holds the same toward the front of the needle, while the other thread, carried slack beneath the taut thread, is allowed to be drawn back of the latter, and so retained by the previously-formed loop, which is drawn over the said threads and off the needles in the usual manner. The differently-colored threads, being thus made to alternately appear at the surface of the fabric during a definite number of revolutions of the needle-cylinder, produce the horizontally-striped fabric, and since all the threads or

yarns are invariably passed into the needles, no loose threads are carried on the fabric, and the same is thereby rendered of a uniform texture.

Having thus described my invention, what I claim is—

1. The combination, with the loop-wheel U and thread-guide-supporting mechanism, of the thread-guides P and R, pivoted to each other, and each pivoted independently to said supporting mechanism, as and for the purposes set forth.

2. The combination, with the loop-wheel U, of the thread-guides P and R and supporting means therefor, the guides being pivoted to each other, and each pivoted independently to the supporting mechanism, the pivoted rod N, and actuating mechanism for said rod, substantially as described, as and for the purposes set forth.

JOHN BRADLEY.

Witnesses:

SYLVENUS WALKER,  
JAMES G. DORSEY.