

(No Model.)

O. WILSON & J. PALMER.

STOP MOTION MECHANISM FOR KNITTING MACHINES.

No. 316,423.

Patented Apr. 21, 1885.

Fig. 1.

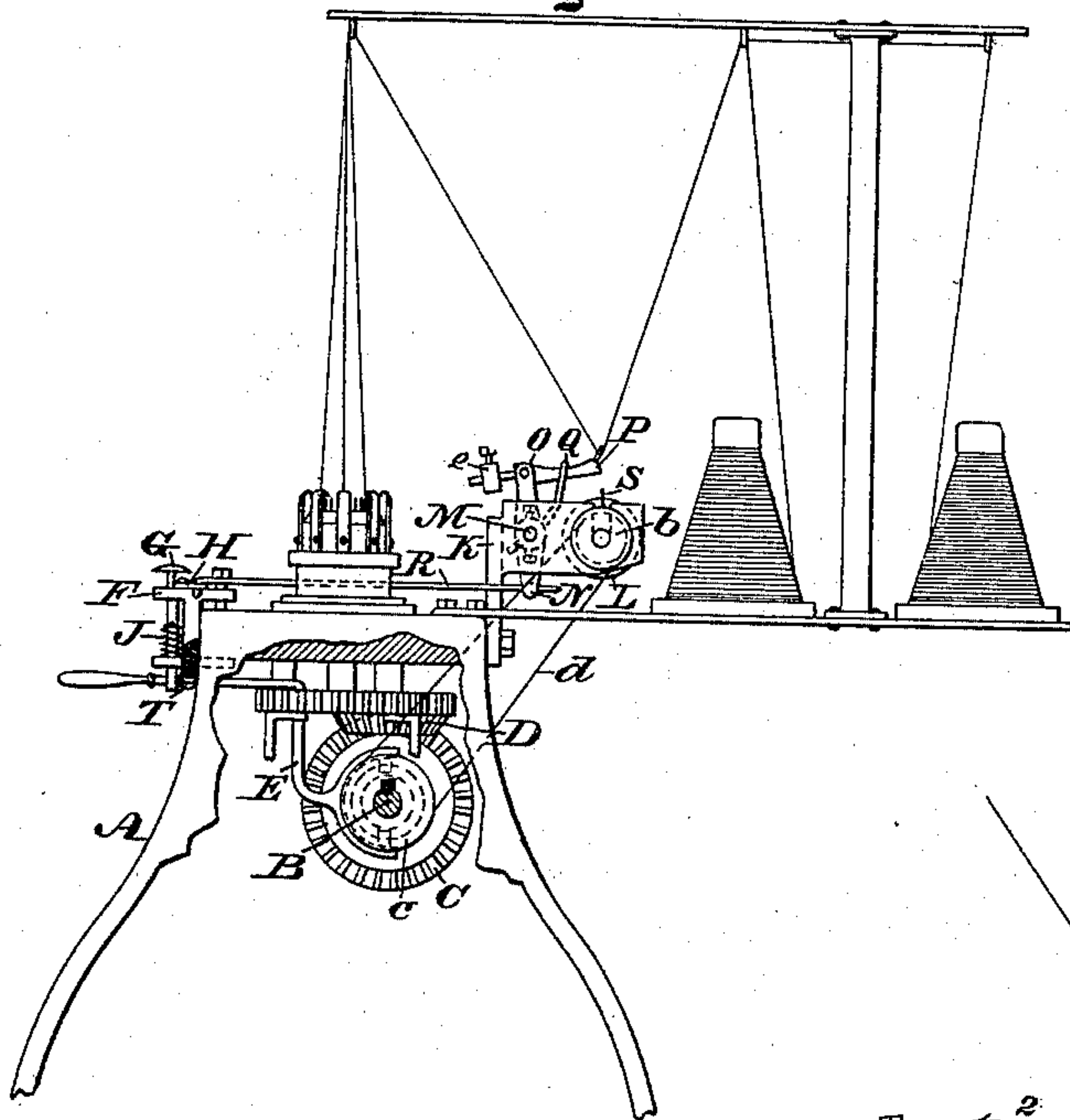


Fig. 3.

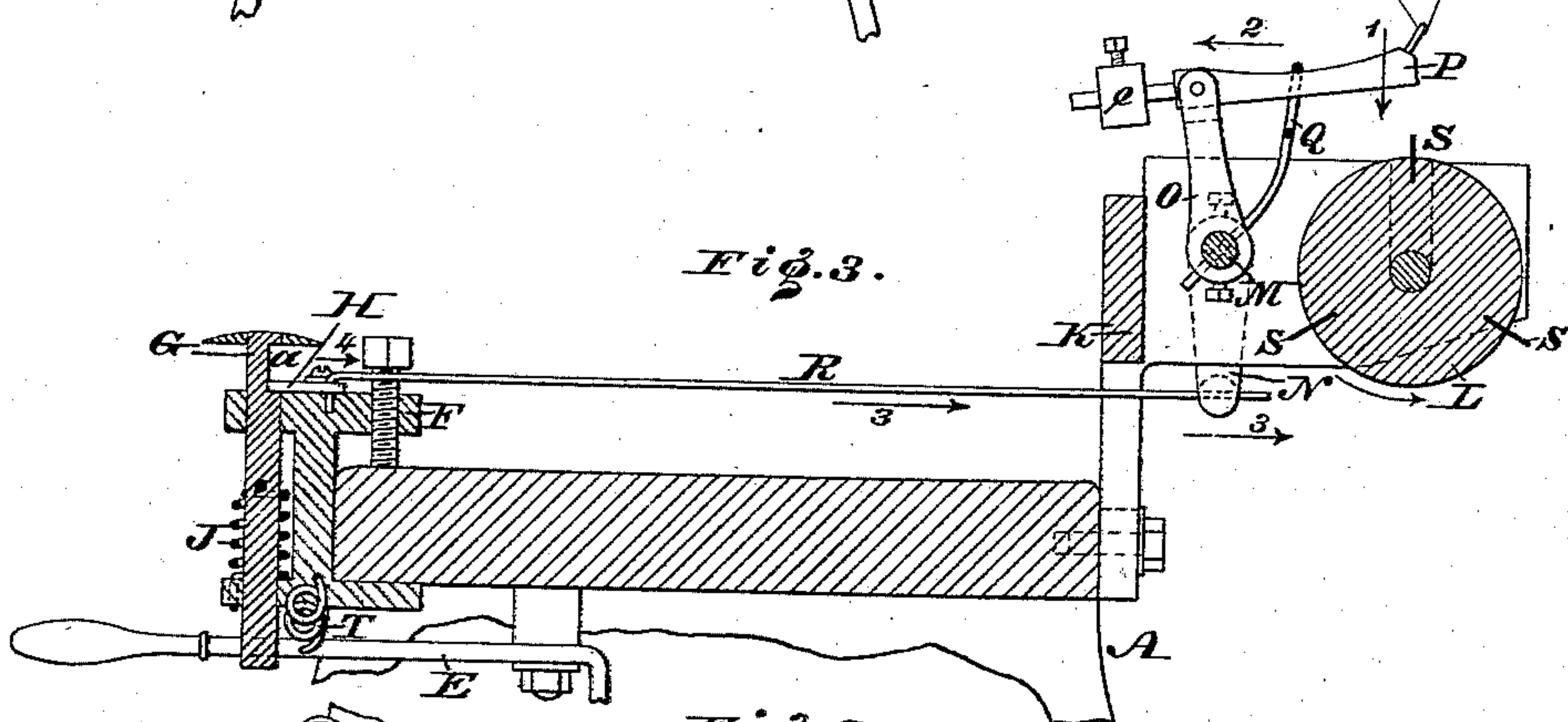
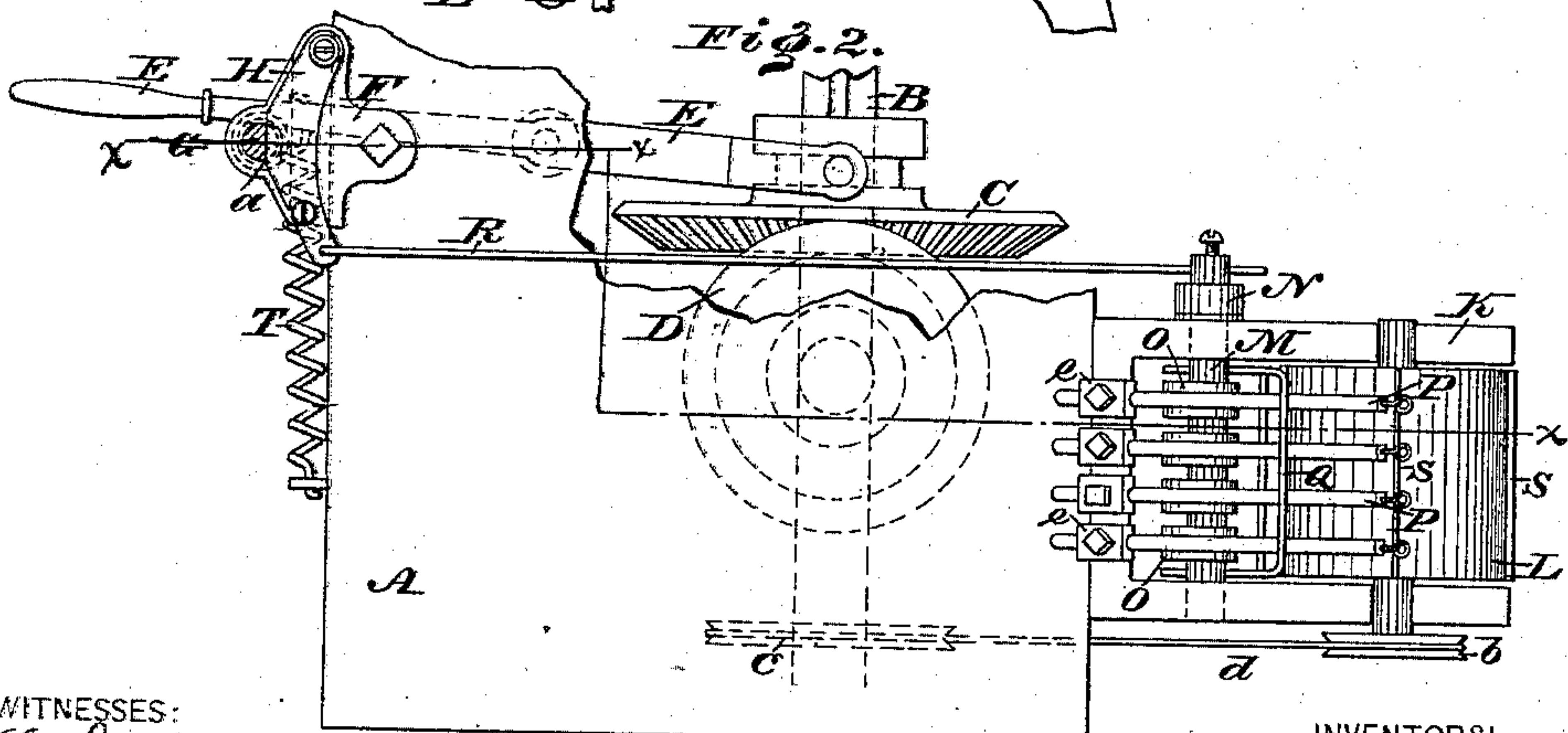


Fig. 2.



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## STOP-MOTION MECHANISM FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 316,423, dated April 21, 1885.

Application filed January 13, 1885. (No model.)

*To all whom it may concern:*

Be it known that we, OLIVER WILSON and JOHN PALMER, both citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Stop-Motion Mechanism for Knitting-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in  
10 which—

Figure 1 represents a side elevation, partly in vertical section, of a knitting-machine provided with a stop-motion mechanism embodying my invention. Fig. 2 represents a top or  
15 plan view of a portion thereof on an enlarged scale, the spindle being shown in section. Fig. 3 represents a vertical section thereof in line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists of improvements in the stop-motion mechanism of a balmoral or other knitting-machine, whereby, in the event of breakage of the yarn or thread or the emptying of spools or bobbins, the machine will  
25 be automatically stopped, as will be hereinafter fully set forth.

Referring to the drawings, A represents a portion of a balmoral knitting-machine, which, excepting the attached features of our invention, is of well-known construction.

B represents the driving-shaft, the same being properly mounted on the frame of the machine, and carrying a sliding bevel-wheel, C,  
35 with which is splined thereon, and may be engaged and disengaged from a bevel-wheel, D, which latter engages with the gearing of the machine.

E represents the shipper or lever, which is  
40 connected with the sleeve or hub of the wheel C, and pivoted to the frame of the machine, as usual.

To a bracket, F, which is connected with the frame of the machine on the side thereof coinciding with the handle end of the lever E,  
45 is fitted a vertically-movable spindle, G, which is of such length that when it is in its lowermost position it is in the path of the lever E, (see Fig. 3,) and serves to control the same, as  
50 will be hereinafter set forth.

A horizontally-arranged plate or catch, H, is pivoted to the bracket F adjacent to the spindle G and engaging with said spindle, so as to prevent the elevation of the same, a recess or shoulder, *a*, being formed on the spindle to receive said plate H. 55

J represents a spring, which is connected with the bracket F, and presses upwardly against the spindle for elevating the latter when released from the holding action of the catch H. 60

To the portion of the frame of the machine opposite to the frame F is attached a bracket, K, on which is mounted a drum, L, which is operated by the driving-shaft B through the medium of suitable gearing or devices, which  
65 in the present case consist of a pulley, *b*, on the drum, a pulley, *c*, on the driving-shaft, and a belt, *d*, passing around said pulleys.

On the bracket K is mounted a shaft, M, to which are connected a crank, N, and a series of  
70 upright arms, O, the upper ends of the latter having pivoted to them the guide-arms P, which project over the drum L and have the tendency to lower toward said drum, said arms P having weights *e*, which may be adjusted so  
75 as to render said arms quite sensitive in their action, it being noticed that the yarn which is fed to the machine is passed from the spools or bobbins through eyes on said arms P, whereby the latter are held in elevated positions. 80  
(See Figs. 1 and 3.) The arms P pass through stops Q, secured to the shaft M, and are thereby limited in their upward motions.

The catch H and crank N are connected by a rod, R, whereby the motion of the crank is  
85 imparted to the catch and the latter withdrawn from the spindle when so required.

On the periphery of the drum L is a series of transversely-extending wings, S, with which the ends of the arms P engage when the latter  
90 drop, due to the breaking of the yarn.

Connected with the lever E and the frame of the machine is a spring, T, whose tendency is to draw the said lever in direction from the spindle, which is occasioned when the machine is to be stopped. 95

The operation is as follows: When the machine is running, the drum L rotates, the arms P being held clear of the same by the yarn fed to the machine, it being noticed that the lever 100



E is controlled by the spindle G, so that the wheel C is held engaged with the wheel D. When the yarn breaks or a spool or bobbin is empty, the relative guide-arm P, which has  
5 been previously held, is permitted to drop, (see arrow 1,) and so comes in contact with one of the wings of the drum L, whereby it is forced in the direction of arrow 2, and as it carries with it its connected arm O the rod R  
10 is moved in the direction of arrow 3. This draws the catch H from the recess *a* of the spindle G in the direction of arrow 4, and the spindle rapidly rises, due to the spring J, thus clearing the lever E. The said lever E, being  
15 no longer held in place or controlled by the lower end of the spindle G, is caused by the contraction of the spring T to move the wheel C on the driving-shaft B from engagement with the bevel-wheel D, connected with the  
20 gearing of the machine, thereby cutting off the motive power and causing the stoppage of the said machine. When the yarn is reunited or a fresh spool or bobbin applied, the parts of the machine are reset, so that the lever E is  
25 again controlled by the spindle G, and the latter by the catch H, the latter being held in position in the recess or shoulder *a* as long as the arms P are controlled by the yarn.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. The winged drum L, in combination with means for operating said drum, the shaft M, having the upright arms O, weighted guide-arms P, and stops Q, substantially as and for  
35 the purpose set forth.

2. The winged drum L, in combination with the guide-arm P, upright arm O, to which said guide-arm P is pivotally secured, the shaft M, crank N, rod R, catch H, and spindle  
40 G, substantially as and for the purpose set forth.

3. A winged drum and means for operating the same, in combination with a guide-arm, an upright arm to which said guide-arm is  
45 pivotally secured, a shaft, a crank secured thereto, the catch H, a rod connecting said crank and catch, spindle D, having a shoulder, the spring J, lever E, spring T, wheel C, and driving-shaft B, said parts being arranged  
50 and combined substantially as and for the purpose set forth.

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Witnesses:

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