

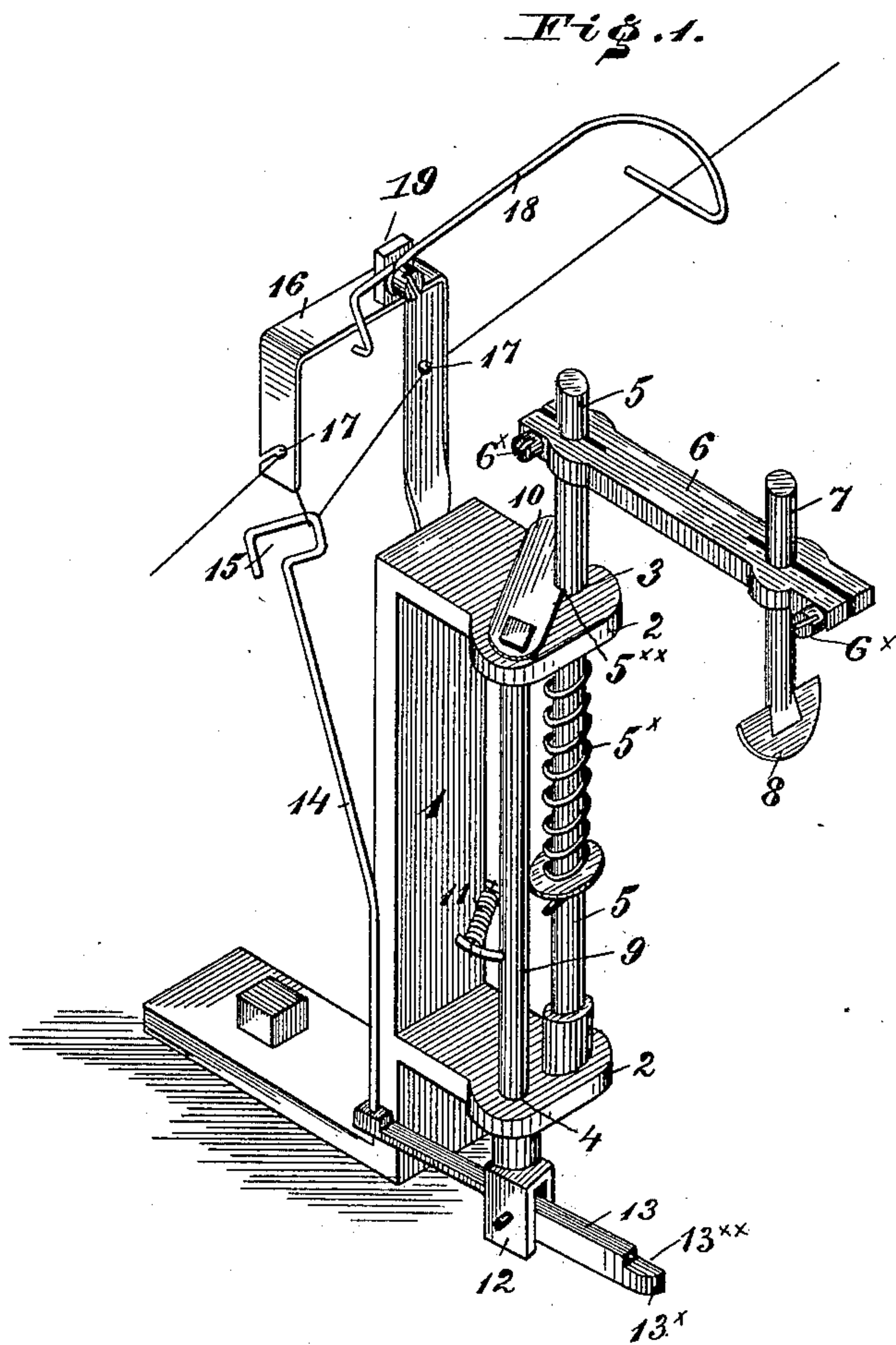
(No Model.)

2 Sheets—Sheet 1.

G. MARTIN & J. F. GEE.  
CIRCULAR KNITTING MACHINE.

No. 428,052.

Patented May 13, 1890.



WITNESSES:

*Theo. Rollé.*  
*John N. Moore.*

INVENTORS:

*George Martin,*  
*Joseph F. Gee,*  
BY *Wiedersheim & Finkner*

ATTORNEYS.

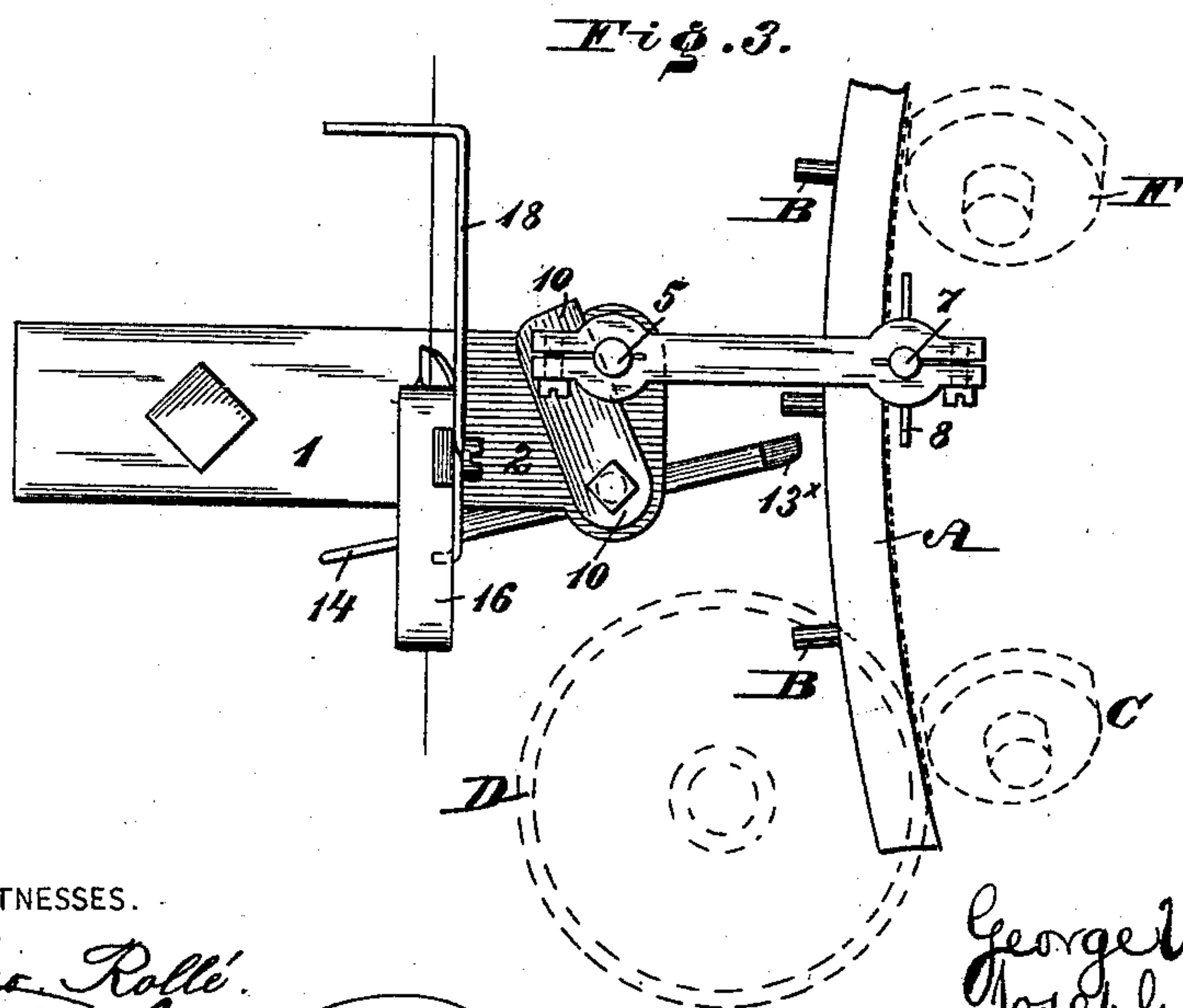
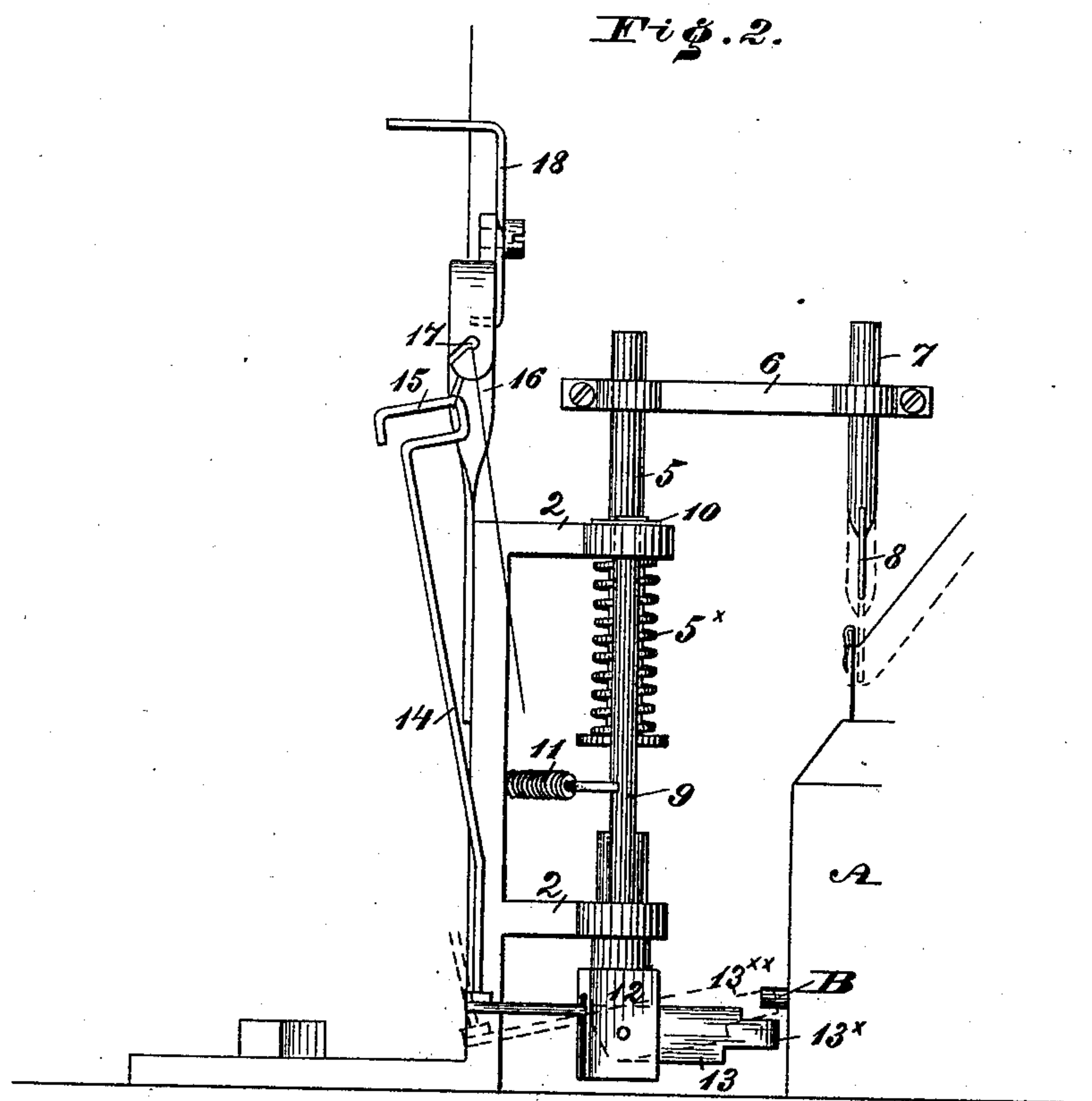
(No Model.)

2 Sheets—Sheet 2.

G. MARTIN & J. F. GEE.  
CIRCULAR KNITTING MACHINE.

No. 428,052.

Patented May 13, 1890.



WITNESSES.

Thos. Rolfe.  
J. M. Moore.

INVENTORS;

George Martin,  
Joseph F. Gee  
BY Hedersheim & Spitzer  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORGE MARTIN AND JOSEPH F. GEE, OF PHILADELPHIA, PENNSYLVANIA,  
ASSIGNORS TO E. H. GODSHALK, OF SAME PLACE.

## CIRCULAR-KNITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 428,052, dated May 13, 1890.

Application filed July 11, 1888. Renewed March 20, 1890. Serial No. 344,677. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE MARTIN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, and JOSEPH F. GEE, a subject of the Queen of Great Britain, (having resided in the United States one year last past and declared my intention of becoming a citizen thereof,) residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Circular-Knitting Machines, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention relates to improvements in circular spring beard knitting machines, and has especial reference to a device for preventing the cloth or material from leaving or becoming detached from the needles when a thread breaks.

In circular-knitting machines at present in use when a thread breaks the old loops are drawn over the beards of the needles, so that time is lost in replacing the material, and a great amount of such material is wasted.

The object of our invention is to entirely overcome this serious and bad result and provide a device which will operate as soon as a thread breaks to force or press the material downward on the needles, and thus prevent it from becoming detached or slipping off said needles.

A further object of our invention is to provide a device of the character and for the purpose mentioned which will comprise few parts, which will be automatic and thoroughly effective in operation, which can be readily and easily applied to machines at a small cost.

To attain the desired objects the invention consists in the automatic device hereinafter described and claimed, whereby the thread is prevented from leaving the needles when broken.

Figure 1 represents a perspective view of a device constructed in accordance with and embodying our invention. Fig. 2 represents a side elevation thereof. Fig. 3 represents a top plan view thereof and of the parts of the machine which operate in conjunction with our device.

Similar letters and numerals of reference

indicate corresponding parts in the several figures.

Referring to the drawings, in which the numerals designate the mechanism of our invention and the letters the parts of the machine which operate in conjunction therewith, A designates a portion of the circular needle-head, provided on its periphery with the studs, pins, or lugs B.

C designates the landing-wheel, D the presser-wheel, and F the knock-off or finishing wheel, all of which are of well-known construction, but in connection with which we employ our device.

The numeral 1 designates a standard or upright which is securely fastened to the bed-plate of the machine. The said standard or upright is provided with arms, extensions, or lugs 2, which are provided with openings 3 and 4.

Through the openings 3 in the lugs 2 passes the rod 5, having secured to its upper end the horizontal bar 6. The ends of the said bar 6 are split or slotted with enlarged openings, and are provided with clamping-screws 6<sup>x</sup>, to bind or secure the split ends together. By means of the split ends and clamping-screws the bar 6 is vertically adjustable on the rod 5, and the rod 7, which passes through an enlarged portion of the slot or split at one end of the said bar 6, is vertically adjustable thereon. The rod 7 has at its lower end an enlarged portion or head 8, adapted to engage with the material on the needles. A spring 5<sup>x</sup> is coiled or placed around the rod 5, and bears against a pin or projection on the rod at one end and at the other end against one of the arms 2 on the upright 1. From this construction it is evident that the rod 5 is spring-actuated, and this rod, with the cross-bar 6 and rod 7, may be termed an adjustable spring-actuated plunger. The rod 5 is provided with a notch 5<sup>xx</sup>, the purpose of which will be explained. Through the openings 4 of the arms 2 passes a rod 9, to the upper end of which is attached an arm or plate 10, adapted to engage the cut-out or notch 5<sup>xx</sup> on the rod 5 and serve to retain the spring-actuated plunger in an elevated position, and in order to insure the engagement of the plate 10 with the notch 5<sup>xx</sup> a spring 11 is connected with the rod 9 and



the upright and operates to effect this end, as is evident. The lower end 12 of the rod 9 is forked or bifurcated, although we would have it understood that it is not absolutely necessary that it be so, and in said bifurcated end is pivoted an arm 13. To the outer end of the arm 13 is attached a wire rod 14, having its upper end bent to form a hook or eye 15. The inner end of the arm 13 is curved or rounded at 13<sup>x</sup>, and is cut out or reduced at 13<sup>xx</sup>, the purpose of which will be explained.

To the upright 1 is secured a bracket 16, having thread-eyes 17, and 18 designates a tension-lever, which is pivoted or fulcrumed to a lug 19 on the bracket 16, and it has its longer end adapted to bear upon the thread.

From the foregoing description, taken in connection with the drawings, the operation of the invention will be readily understood, and is as follows: The device is secured to the bed-plate of the machine between the presser-wheel and knock-off wheel. The thread passes from the bobbin under the tension-lever, through the eyes in the bracket and the eye 15 in the rod, and from thence to the loop-wheel, and so on in the usual manner. The tension of the thread serves to retain the rod 14 in an upright position and allows the head to revolve without contacting with the arm 13; but when the thread breaks the tension on the rod is released, causing the same to fall and elevate the end of the arm 13, thereby bringing the same in the path of movement of the studs B on the head, the contact of said stud with the end of the arm turning the rod 9, releasing the plate or latch 10 from engagement with the spring-actuated plunger, which instantly descends and forces the material down on the needles, and thus prevents the said material from becoming detached, as will be readily understood. The machine is then stopped, the thread fixed, and the operation continued. It will thus be seen that we provide an automatic device which will prevent the material from leaving the needles in consequence of the breaking of the thread, thereby overcoming the existing objection and saving a great amount of time and money.

The many advantages of our device will be readily understood and appreciated by all skilled in the art, and need no further comment herein.

We would have it understood that we reserve the right to make minor changes in the construction and arrangement of the parts of our device without departing from the spirit or scope or sacrificing any of the advantages of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a circular needle-

head with a lug on its outer surface, of a bracket, a spring-operated rod guided in said bracket, a head connected with said rod and adapted to engage the material on the needles of the circular needle-head, a spring-pressed catch for holding said rod in place, and a pivoted lever connected with said catch and carrying at one end a hook engaging the thread fed to the needles of the circular needle-head, the other end of the lever being adapted to engage the lug on the circular needle-head, said parts being combined substantially as and for the purpose set forth.

2. The combination of a circular needle-head having a lug on its outer surface with a bracket, a sliding rod adapted to move in openings in said bracket and having a pin and a notch thereon, a cross-bar vertically connected with said sliding rod, a rod with enlarged portion at lower end secured to said cross-bar, a spring on said sliding rod bearing against said pin thereon and the bracket, a spring-controlled oscillating rod, with a plate, the latter adapted to engage in the notch in said sliding rod, and a pivoted lever secured to said oscillating rod and carrying at one end a hook and having its other end adapted to engage the lug on the circular needle-head, said parts being combined substantially as described.

3. The combination of the circular needle-head having lug B with the bracket 1, having lugs 2, with openings 3 and 4, the rod 5 in said openings 3 and having notch 5<sup>xx</sup>, the cross-bar 6, connected to said rod 5, and the rod 7, connected to the bar 6 and having the head 8 at the lower end, the spring 5<sup>x</sup>, adapted to lower the rods 5 and 7, with head 8, an oscillating rod journaled in the lugs 2 and provided with plate 10, the latter adapted to engage the notch 5<sup>xx</sup> of the rod 5, the lever 13, pivoted to the oscillating rod and carrying at one end the rod 14, with hook 15, and having at the other end the cut-away portion 13<sup>xx</sup>, adapted to engage the lug B, and the bracket 16, secured to the bracket 1 and having thread-eyes 17, substantially as described.

4. The combination of a bracket, a spring-operated arm guided in said bracket, a head connected with said rod and adapted to engage the material on the needles of a knitting-cylinder, a rod with spring and plate for holding said spring-operated rod and thereby said head away from said needles, a lever pivoted to said rod having a plate, and a hook connected to one end of said lever, substantially as and for the purpose set forth.

GEO. MARTIN.  
JOS. F. GEE.

Witnesses:

JOHN A. WIEDERSHEIM,  
A. P. JENNINGS.