

C. J. APPLETON.
KNITTING MACHINE.

No. 27,183.

Patented Feb. 14, 1860.

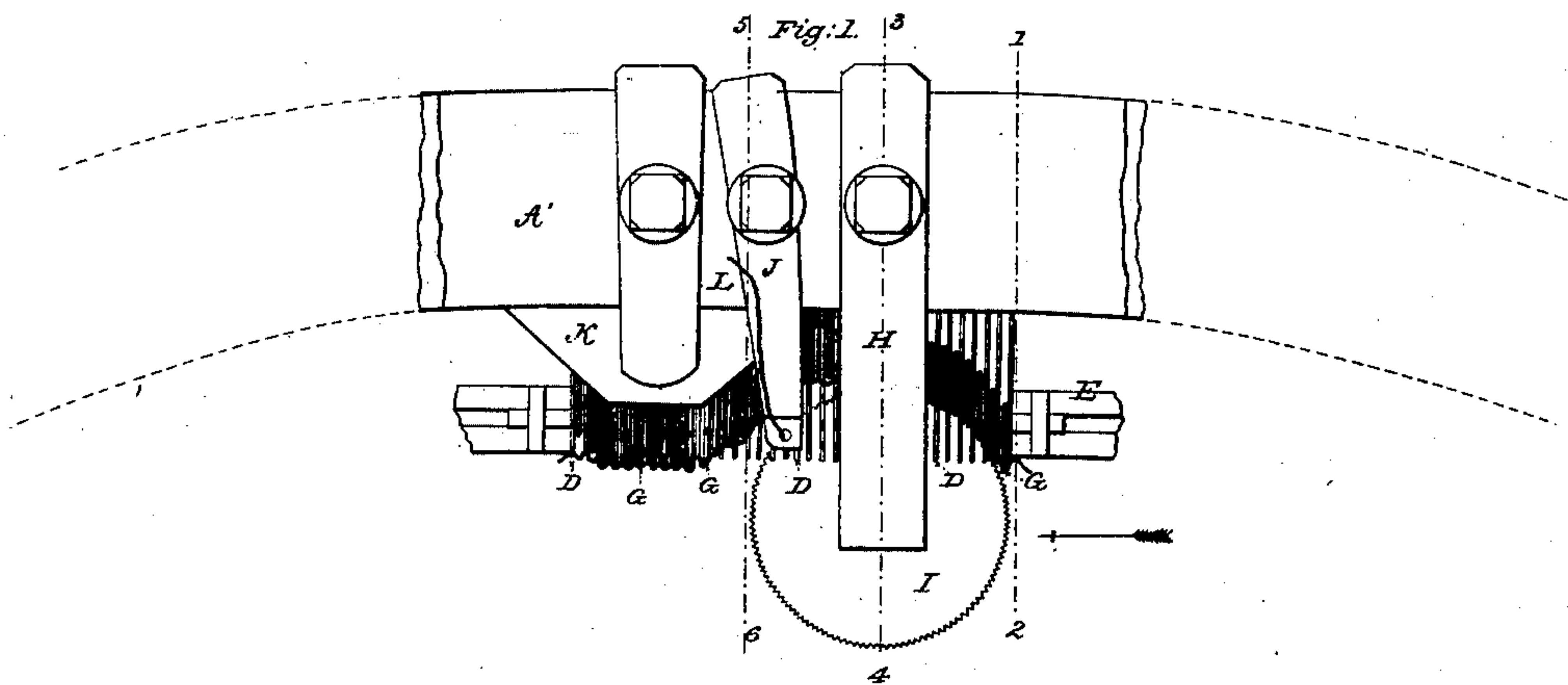


Fig. 2.

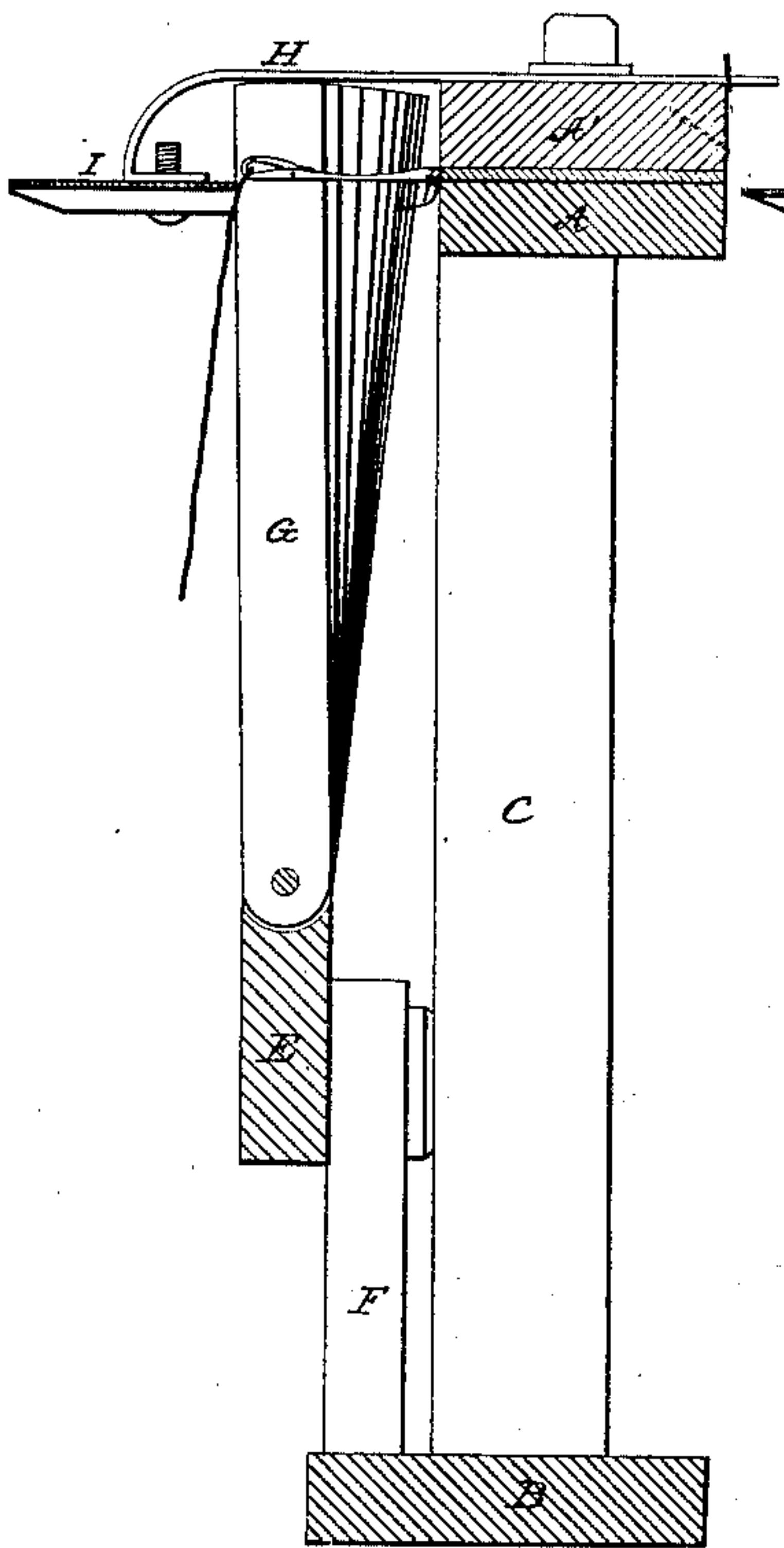


Fig. 3.

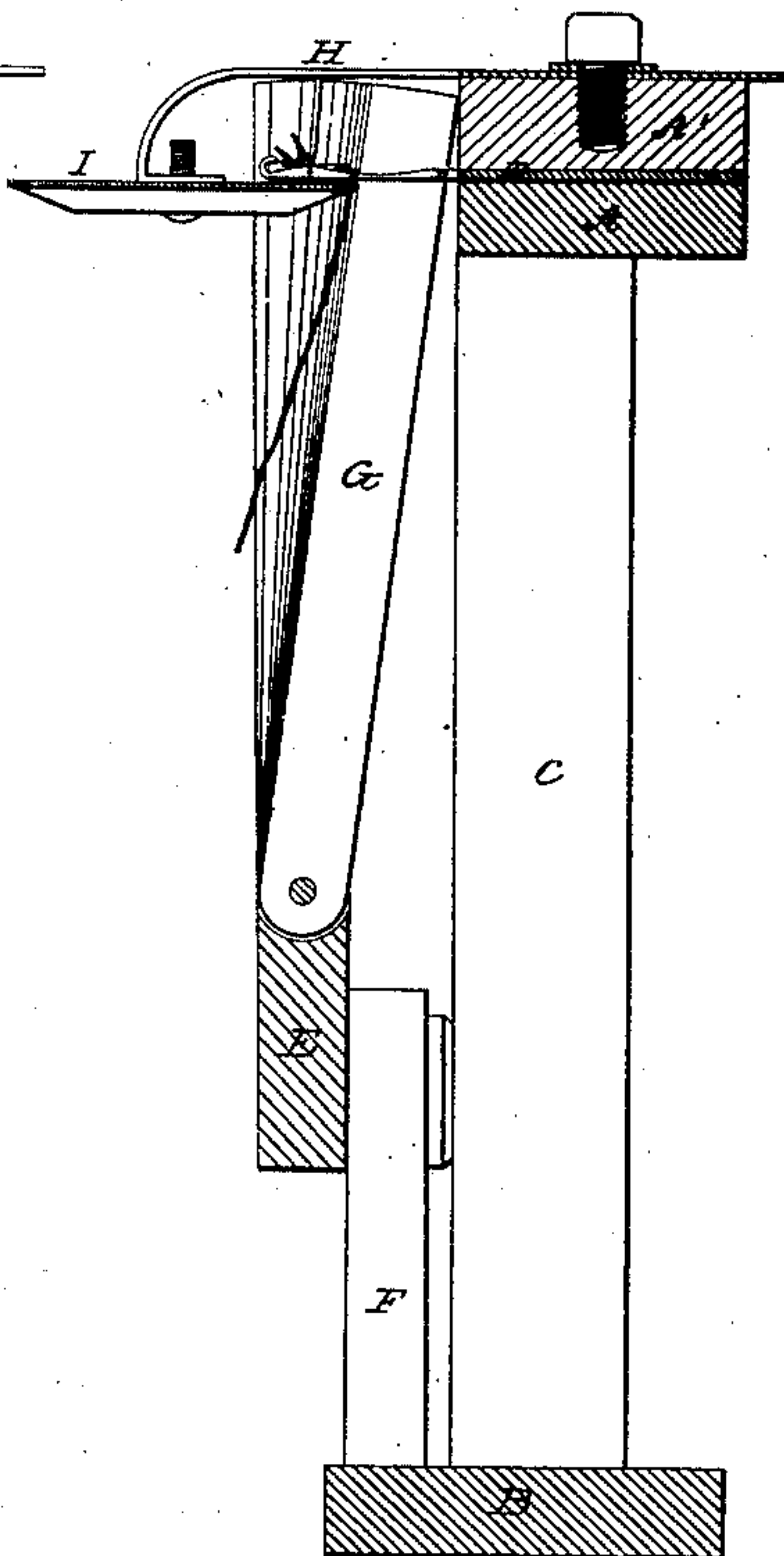
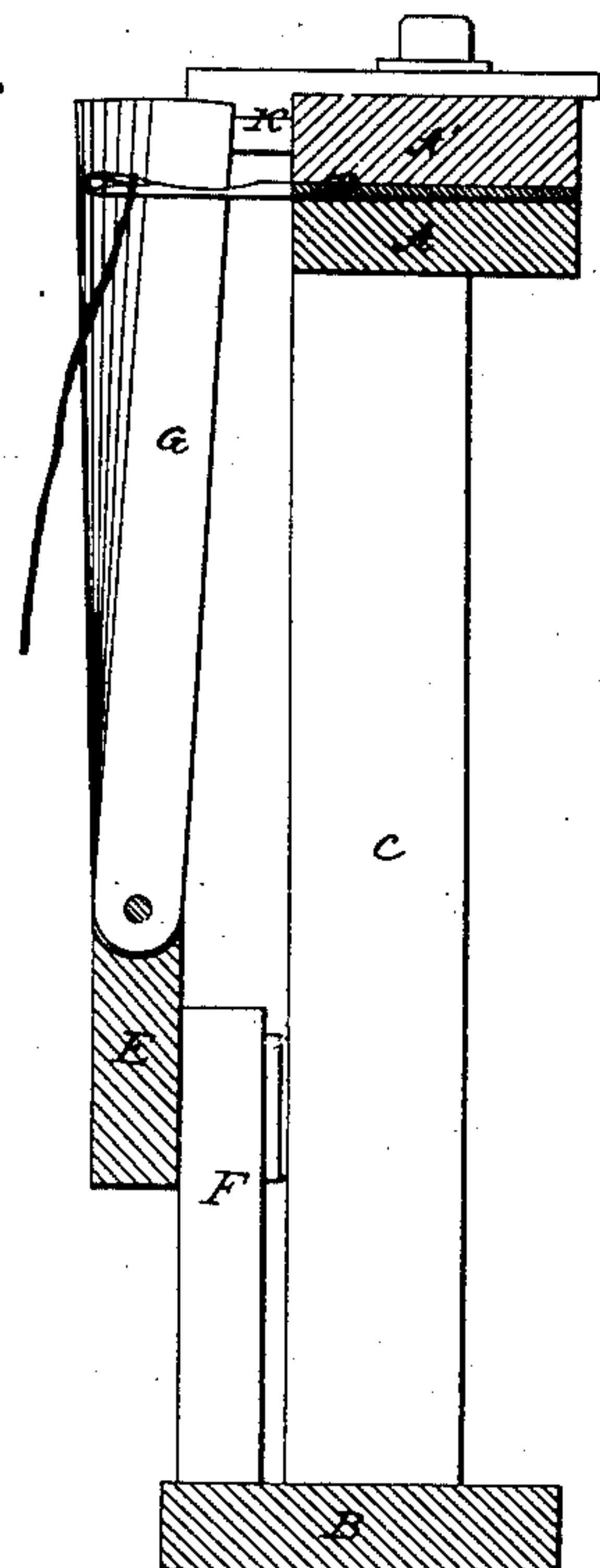


Fig. 4.



Witnesses:

Henry Howland
Horace See

Inventor:

Charles J. Appleton

UNITED STATES PATENT OFFICE.

CHARLES J. APPLETON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO B. H. HOWELL,
OF NEW YORK, N. Y., AND JOHN COTTON, OF PHILADELPHIA, PENNSYLVANIA.

KNITTING-MACHINE.

Specification of Letters Patent No. 27,183, dated February 14, 1860.

To all whom it may concern:

Be it known that I, CHARLES J. APPLETON, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Knitting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates to an improvement in machines for knitting circular fabrics, and my improvement consists in a system of "hinged" needles and "sinkers" combined with a thread guide, a wheel with a serrated edge, and a cam, or their equivalents arranged and operating substantially as described hereafter, so as to produce a circular knitted fabric, rapidly and without interruption.

In order to enable others skilled in this class of machinery to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification—Figure 1, is a plan view of sufficient of a knitting machine, to illustrate my improvements. Fig. 2, a sectional elevation on the line 1, 2, Fig. 1, looking in the direction of the arrow. Fig. 3, the same on the line 3, 4. Fig. 4, the same on the line 5, 6.

Similar letters refer to similar parts throughout the several views.

A, and A', are portions of annular plates the under plate A, being connected to a lower annular plate B, by means of pillars C, or other suitable attachments.

Into the top of the under plate A, and throughout its entire circumference are cut a series of recesses for receiving the needles D, which are of the class technically termed "hinged needles," each needle having a hooked end and a pawl or latch hung to a shank within a slot, the pawl resting on the end of the hook when not raised therefrom by the means described hereafter.

Another annular plate E, is secured to the plate B, by means of brackets F, and to this plate E, are hinged the lower ends of the arms G, which I term the "sinkers," the latter being so arranged that one sinker shall coincide with, and move in the space between two adjacent needles throughout the circumference of the machine.

The above mentioned parts, namely; the annular plate A, with its needles, the annular plates B, and E, with the sinkers G, all revolve together around a common center, which is the center of the annular plates.

It will be readily understood by those familiar with the construction and operation of knitting machines, and without any detailed description, that various different appliances may be used for causing the above parts to revolve.

The upper annular plate A', which serves to maintain the needles in their proper position is stationary, being permanently secured in any convenient manner to the frame or stands of the machine.

To the plate A', is secured a bracket H, to which a wheel I, with serrated edges, is hung loosely, so as to revolve freely immediately below but not in contact with the needles. To the upper plate A', is also secured another bracket J, the end of which is bent downward so as to be near to the needles without actually touching them, the bent end of the bracket having an eye to guide the thread L.

To the inner edge of the plate A', is secured a cam K, which bearing against the outer edges of the sinkers serves to force the latter toward the center of revolution as the needles revolve.

Prior to starting the machine a portion of circular knitted work is placed with its loops in the hooked ends of the needles and a suitable weight is attached to the lower end of the fabric, the end of the thread L, is then passed through the eye in the end of the bracket or thread carrier J. The needles with their sinkers being now caused to revolve in the direction of the arrow (Fig. 1.), the serrated wheel I, is in such a position as regards the points of the needles that the loops of that portion of the fabric which moves in contact with the serrated edge of the wheel, will be forced back over the shanks of the needles, the palls or latches being also turned back at the same time. The thread L, passing through the eye on the bent end of the bracket J, catches onto the hook of each needle in succession as the needles revolve. After the needles with the thread L, caught on their hooks have passed this eye the sinkers G, which had previously been forced outward with the fabric, by the serrated wheel I, will now be forced grad-

ually inward by the cam toward the center of the machine. By this inward movement of the sinkers the loops of the fabric are gradually slid along the needles, turning
 5 down their pawls or catches until they rest on the hooked ends, and finally pushing the loops of the fabric entirely from the ends of the needles and leaving the loop newly formed from the thread L, on the hooked
 10 ends, these loops being carried around with the fabric until they again arrive at the serrated wheel which forces them back and turns over the palls preparatory to the thread catching again over the hooked points
 15 of the needles and the subsequent forcing of the last formed loops of the fabric from the ends of the needles as before.

It will now be seen without further description, that the continual rotary movement of the needles with their sinkers, acting in conjunction with the serrated wheel I, and cam K, a circular knitted fabric may be rapidly and accurately produced without interruption.

25 The machine, part of which is illustrated in the accompanying drawing is one of a class of the larger size arranged for knitting under-shirts and consequently the needles and sinkers are arranged in a circle of extended diameter to correspond with the extent of the fabric. In machines of this size
 30 the arrangement of the cam K, thread guide J, and serrated wheel I, may be repeated

throughout the circumference of the wheel, so that the number of complete rows of
 35 loops added to the fabric at every complete revolution of the needles and sinkers will correspond to the number of cams, guides, and serrated wheels employed. In the class of largest machines for instance six or eight
 40 sets of these devices may be used while in the smallest machines but two sets will be necessary.

Although I have described the needles and their sinkers as revolving, it will be
 45 readily seen that the same end may be accomplished by making them stationary and causing the plate A', with its cam, thread guide, and wheel I, to revolve.

Disclaiming the separate use of the devices
 50 herein described: I claim as my invention, and desire to secure by Letters Patent—

The system of hinged needles and “sinkers” in combination with the thread guide J, and the cam K, and serrated wheel I, or
 55 their equivalents the whole being arranged and operating substantially as herein set forth.

In testimony whereof, I have signed my name to this specification in the presence of
 60 two subscribing witnesses.

CHARLES J. APPLETON.

Witnesses:

HENRY HOWSON,
 CHARLES D. FREEMAN.