

W. AIKEN.
 Sinker and Yarn-Carrier Mechanism for Straight
 Knitting-Machines.

No. 214,744.

Patented April 29, 1879.

Fig. 1.

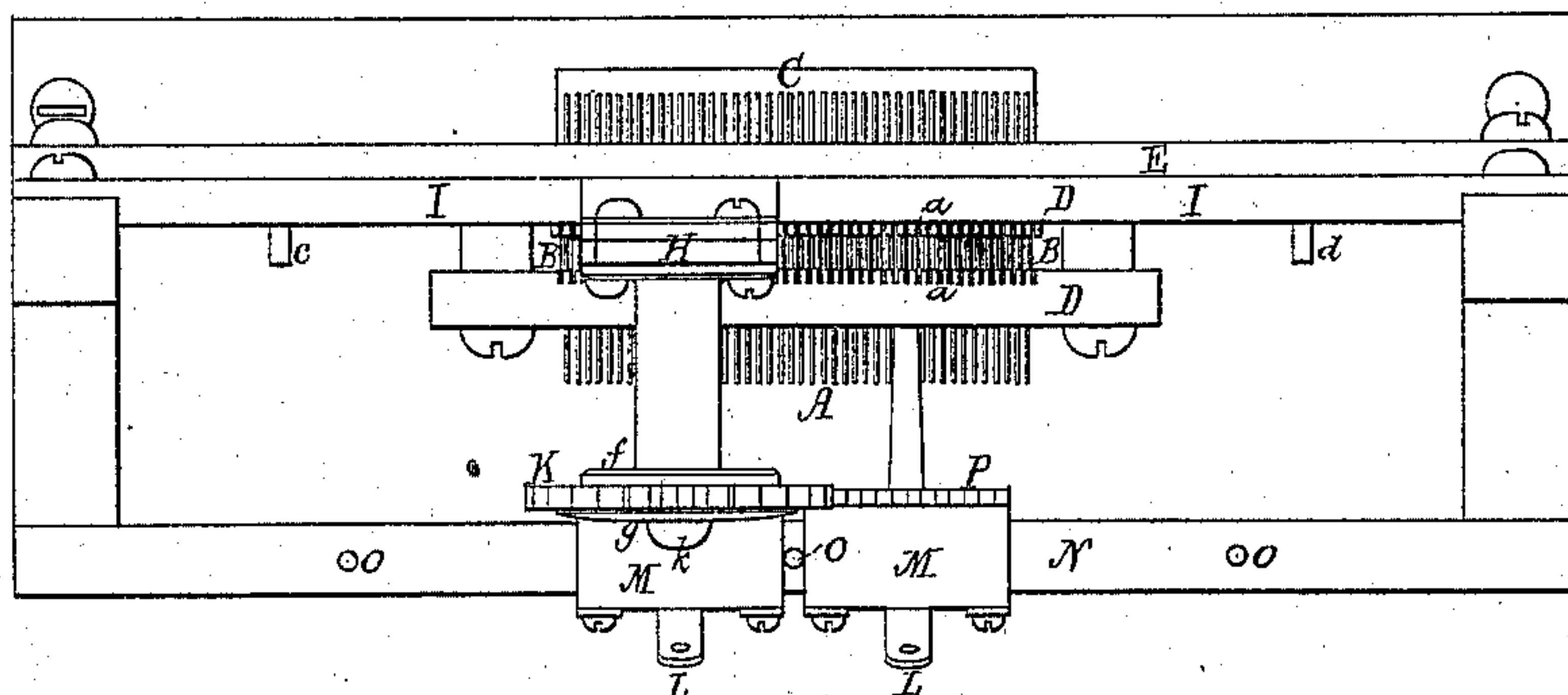


Fig. 2.

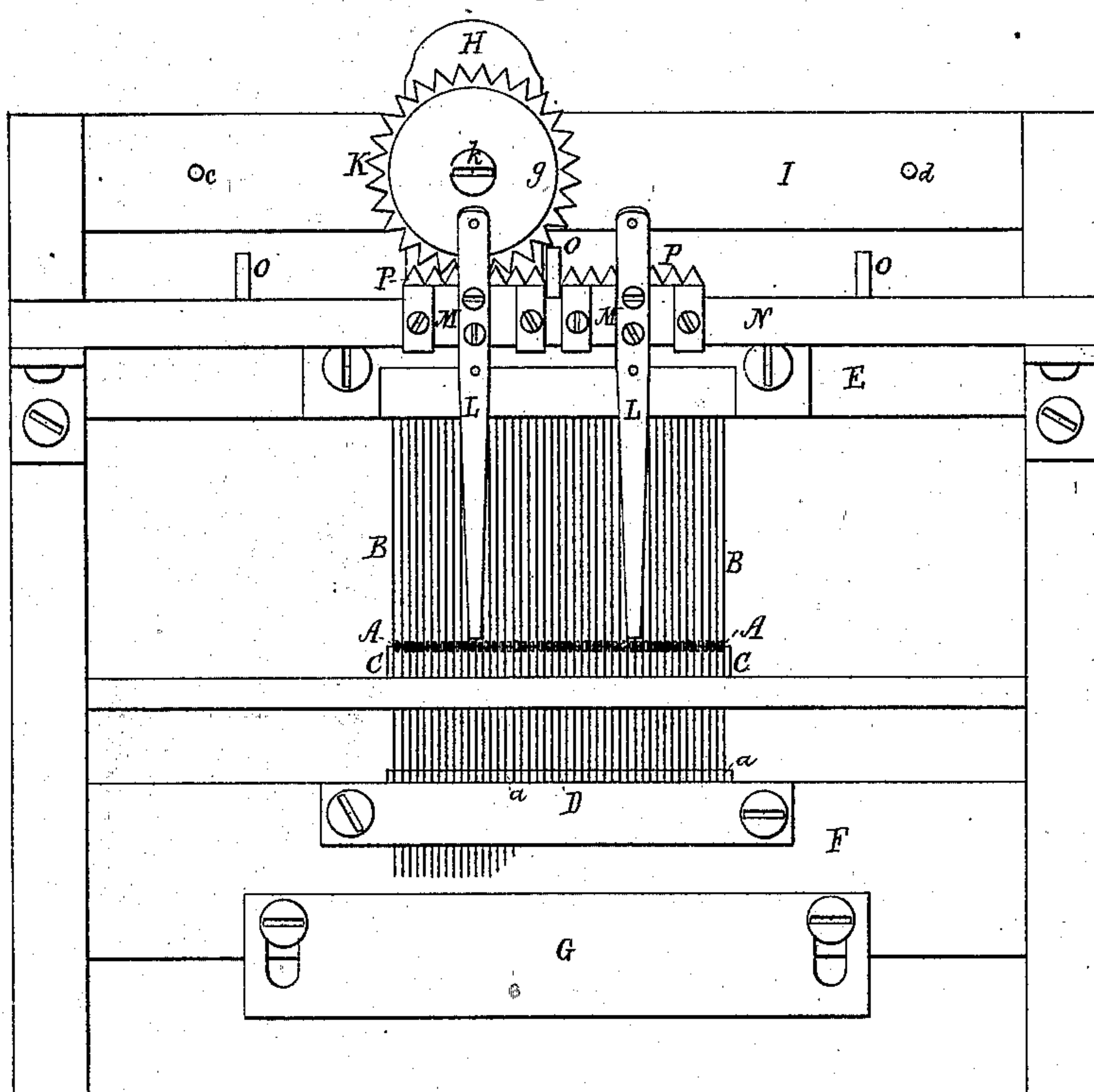


Fig. 3.

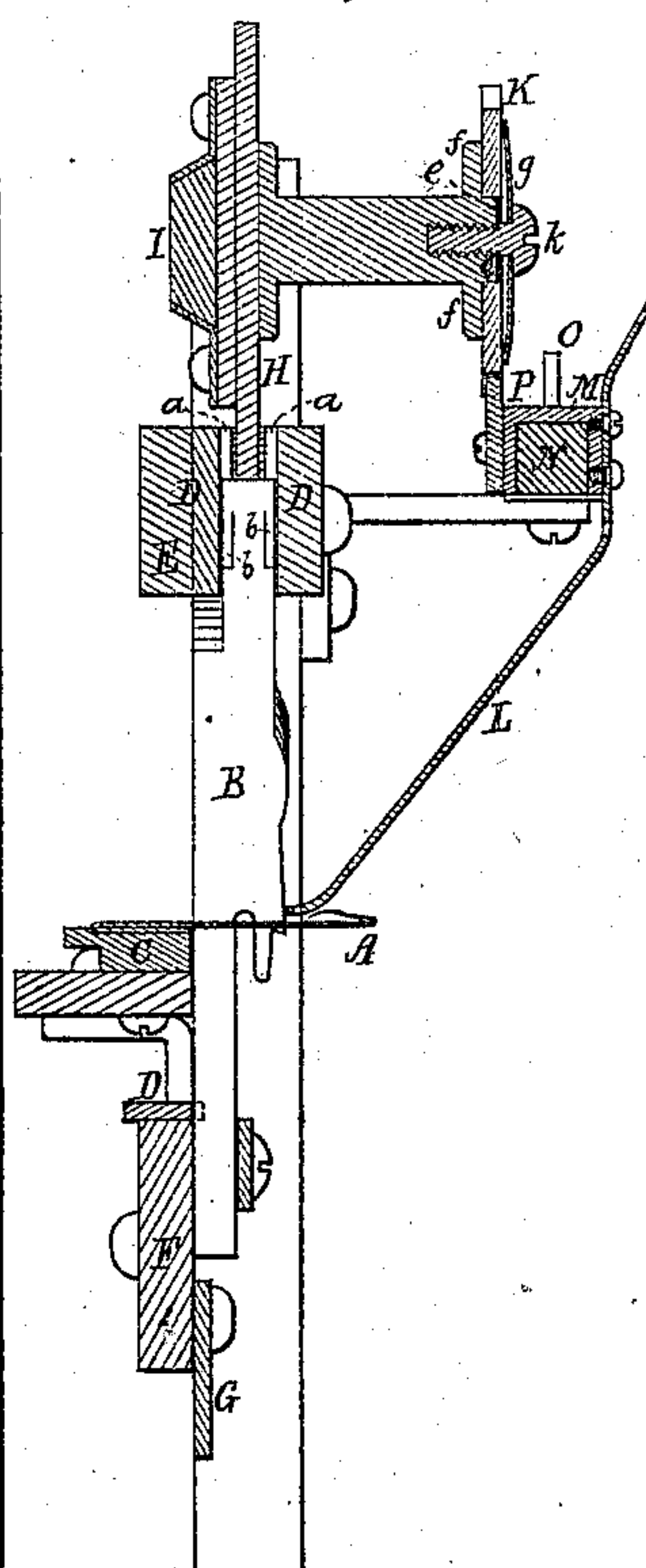


Fig. 4.

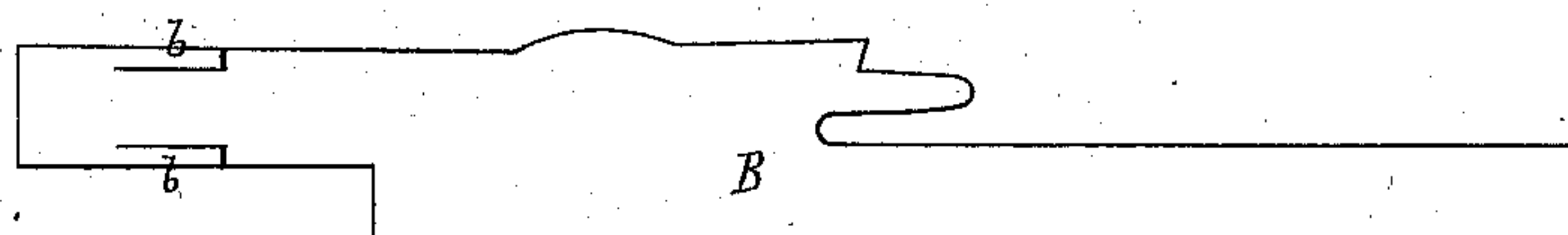


Fig. 5.



Witnesses.

S. N. Piper
 W. W. Lunt

Inventor.

Walter Aiken.
 by attorney.
 R. H. Eddy

UNITED STATES PATENT OFFICE.

WALTER AIKEN, OF FRANKLIN, NEW HAMPSHIRE.

IMPROVEMENT IN SINKERS AND YARN-CARRIER MECHANISMS FOR STRAIGHT-KNITTING MACHINES.

Specification forming part of Letters Patent No. **214,744**, dated April 29, 1879; application filed January 25, 1879.

To all whom it may concern:

Be it known that I, WALTER AIKEN, of Franklin, of the county of Merrimac and State of New Hampshire, have invented a new and useful Improvement in Sinkers and Yarn-Carrier Mechanisms for Straight-Knitting Machines; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a front elevation, and Fig. 3 a transverse section, of the machine embodying my invention. Fig. 4 is a side elevation, and Fig. 5 an edge view, of one of the sinkers, to be hereinafter described.

My invention belongs to the class of knitting-machines usually called "straight spring-needle machines," my present improvement having reference to the "sinkers" and mechanism for operating the yarn feeder or feeders.

In carrying out my invention, I provide each sinker with a spring or springs, arranged to move with it in one or both of its receiving-grooves. The sinker shown in the drawings has springs making part of and projecting from it, and it may have one or a pair of such springs, to enter and move with it in either or both of its supporting-grooves.

Furthermore, I employ, in combination with the sinker-depressor and each of the movable yarn-feeder slides, supported so as to be capable of being moved rectilinearly in opposite directions, a toothed wheel and a friction-brake thereto, and a rack, stops, and a stationary bar or rail, all arranged, applied, and to operate essentially as hereinafter explained and as represented.

In the drawings, A denotes the series of needles, and B that of the sinkers thereof, such needles being projected from a bar, C, and arranged with the sinkers in manner as shown. The sinkers are supported in grooves *a a* in guide-bars D D D, fixed to stationary rails E and F, and beneath the lower ends of the sinkers is their elevating-bar G. Each sinker has, as shown, one or a pair of springs, *b b*, projecting from it at its upper part, such spring or springs being to enter one or both the supporting-grooves *a a*, and to bear against the inner surface or surfaces thereof in a manner

to hold the sinker up and prevent it from being depressed, except by an attendant or by the depressor H, adapted to slide on a horizontal bar, I, and from one stud, *c*, to another, *d*, extending from such bar.

Heretofore it has been customary to support each sinker by a spring fixed to the guide-bar and bearing against the edge of the sinker, in which case the spring was constantly liable to slip off the sinker. With my improvement the spring always retains its position relatively to the sinker and its guide-groove.

A toothed wheel, K, is arranged to turn upon a journal or arm, *e*, projecting from the sinker-depressor, such wheel being supported against a shoulder, *f*, and borne up to such by a friction-brake, *g*, which consists of a concavo-convex disk, arranged against the outer side of the wheel, and forced up to such by a screw, *h*, which goes through the disk at its center and screws tightly into the arm *e*.

L L are the two yarn-feeders, projecting down from two carriers, M M, supported by and adapted to slide rectilinearly in opposite directions on a stationary rail or bar, N, having holes to receive three or other proper number of pins or stops, O, arranged in it, as shown. Projecting up from each of the carriers M is a toothed rack, P, to engage with the toothed wheel, all being arranged as represented.

If, now, we suppose the sinkers to be raised into their highest positions, the depressor to be at one terminus of its path of movement, and one of the yarn-feeder slides to be against the outer stop O, next the depressor, and the other yarn-feeder slide or carrier to be against the middle stop O, and we cause the depressor to be advanced toward and up to its other terminus, the toothed wheel will be in the meantime borne against the rack of one of the yarn-feeder slides, and will force such slide forward until it may bring up against the middle stop O, after which the wheel will roll through the rack, and, meeting the rack of the other slide, will move such slide until it may bring up against the other outer stop O, when the wheel will continue on and roll through the rack. In the return movement of the depressor, like movements of the yarn-feeder

slides will result, but in opposite directions from their preceding movements. In this way reciprocating movements will be imparted to the yarn-feeders, to enable them to properly supply the yarn to the needles, especially when the heel parts of a stocking may be in the act of being knit.

By removing the middle and one of the end stops O from their bar, and sliding one of the yarn-feeder carriers on the bar to a distance beyond the terminus of the toothed wheel, so that such wheel in its movements may act on one of the racks only, and restoring to place the outer stop so removed, one yarn-feeder only may be operated entirely across the series of sinkers in order to accomplish the knitting of a single web only.

The described mechanism for operating either or both the yarn-feeders so as to knit one or more webs, as occasion may require, has been found in practice to be exceedingly useful. In some cases more than two feeders may be employed, each of their carriers being supplied with a rack to operate with the toothed wheel.

What I claim as my invention is as follows, viz:

1. The combination of the knitting-machine sinker and its upper grooved guide-bars with a spring or springs fixed to the sinker and arranged to move with it in one or both of the receiving and guide grooves of the bars, and to operate therewith, substantially as and for the purpose set forth.

2. The knitting-machine sinker having one or more springs, making part of and projecting from it, substantially as and for the purpose described.

3. In combination with the sinker-depressor H and each of the yarn-feeder slides M, supported substantially as described, so as to be capable of being moved rectilinearly in opposite directions, as set forth, the toothed wheel K, its friction brake g, rack P, rail N, and stops O, all arranged, applied, and to operate substantially as and for the purpose or objects set forth.

WALTER AIKEN.

Witnesses:

R. H. EDDY,
S. N. PIPER.