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A. H. OBENHOFF & D. J. BRODERICK.
TAKE-UP FOR KNITTING MACHINES.

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Fig 1

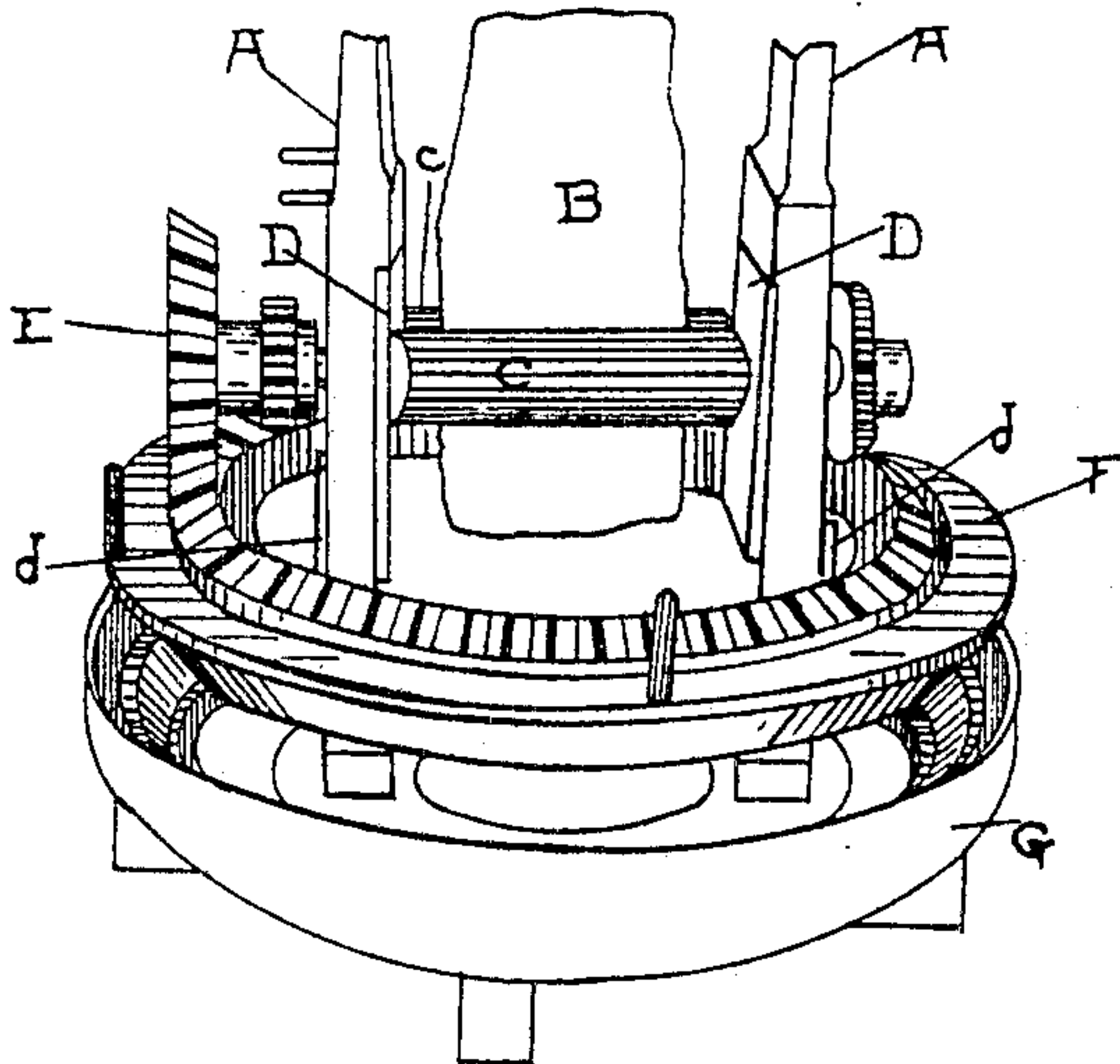


Fig 2

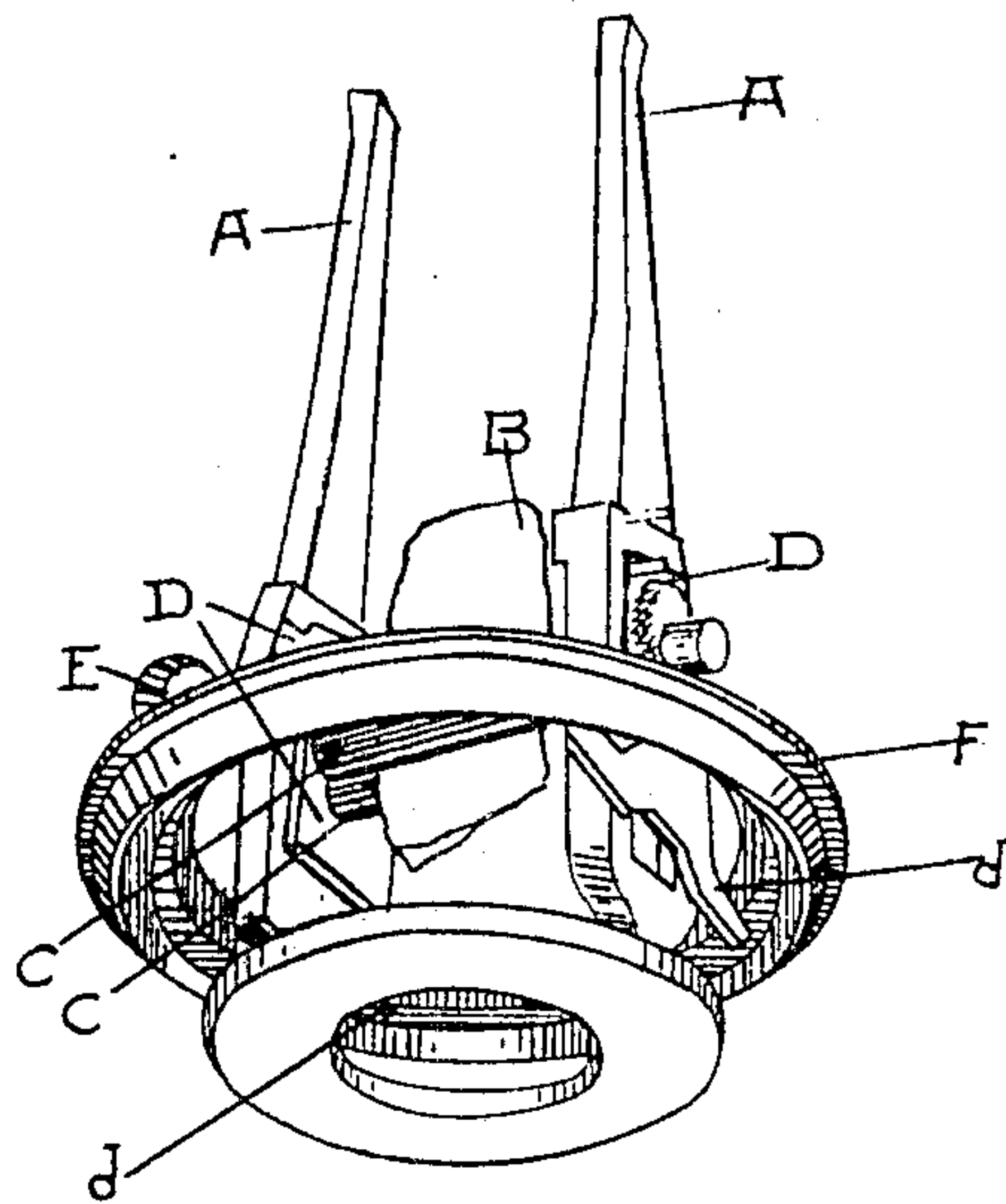


Fig 3

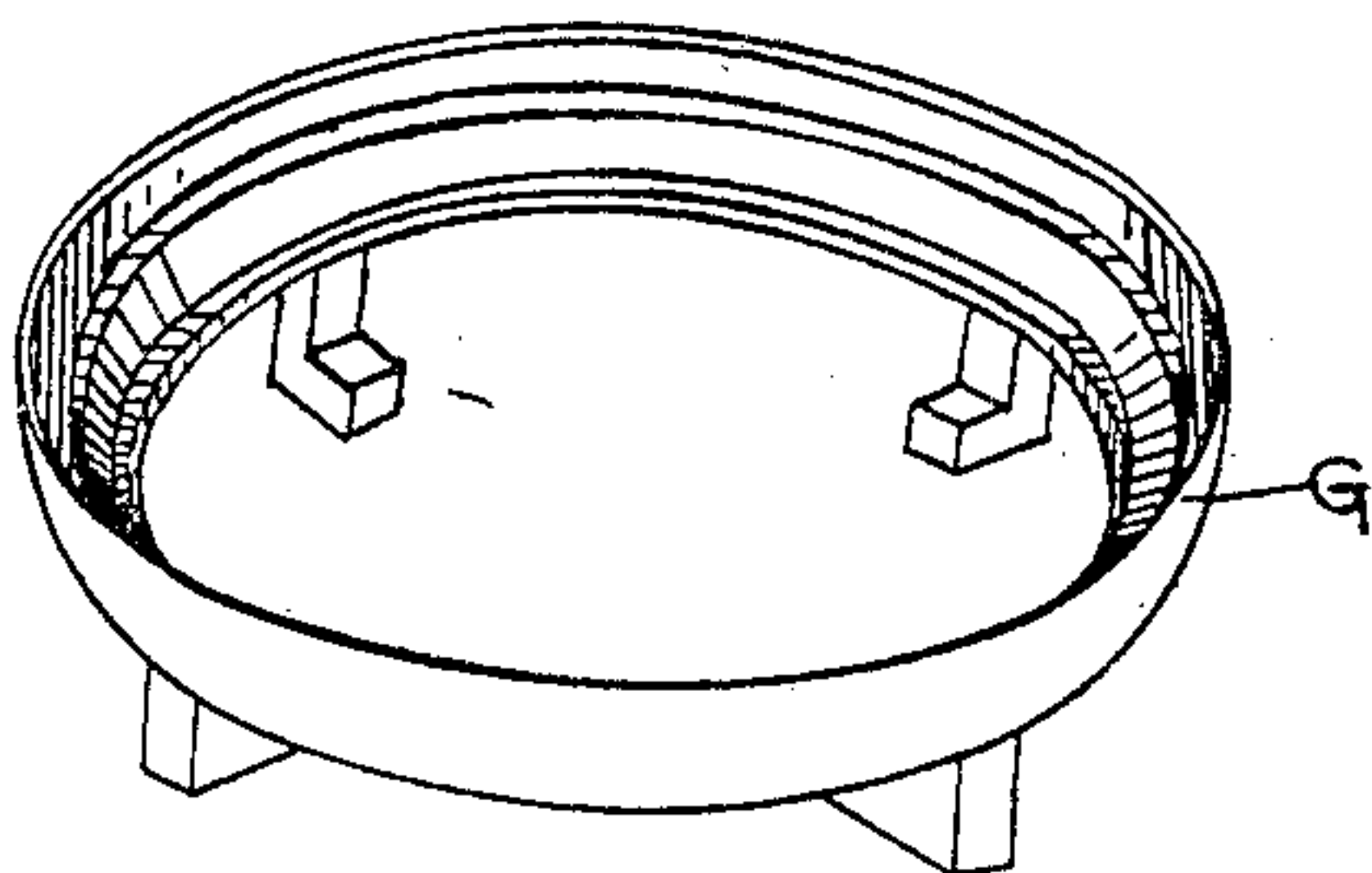
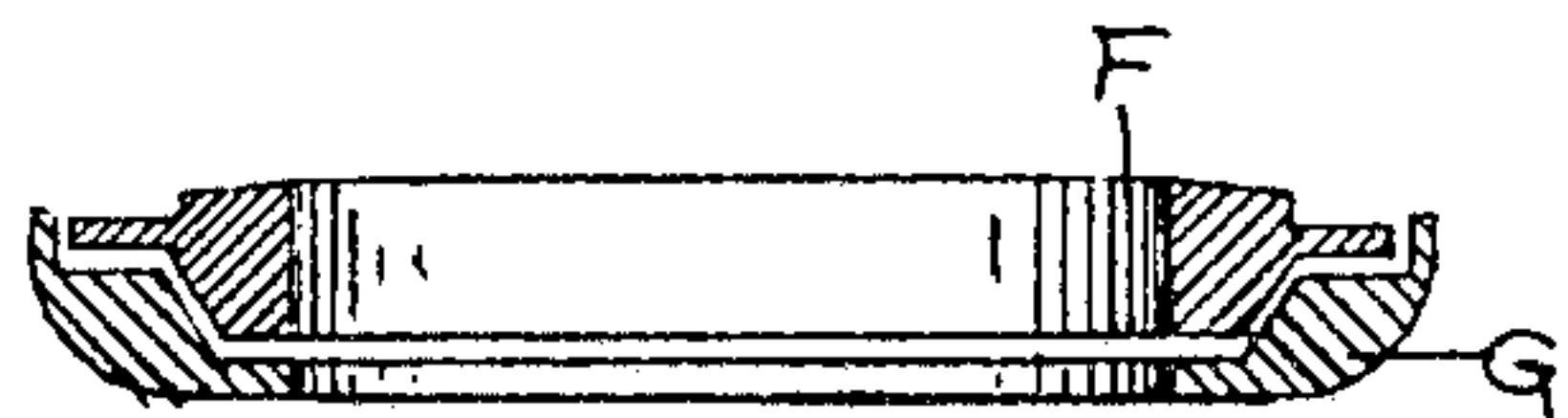


Fig 4



WITNESSES
Dudley Swatz
Lottie Prior

BY

INVENTORS
Albert H. Obenhoff and
Dennis J. Broderick
Ward & Cameron
their attorneys.

UNITED STATES PATENT OFFICE.

ALBERT H. OBENHOFF AND DENNIS J. BRODERICK, OF GLOVERSVILLE,
NEW YORK.

TAKE-UP FOR KNITTING-MACHINES.

No. 799,081.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed April 5, 1904. Serial No. 201,666.

To all whom it may concern:

Be it known that we, ALBERT H. OBENHOFF and DENNIS J. BRODERICK, citizens of the United States of America, and residents of the city of Gloversville, county of Fulton, and State of New York, have invented certain new and useful Improvements in Take-Ups for Knitting-Machines, of which the following is a specification.

Our invention relates to a take-up mechanism for knitting-machines; and the object of our invention is to produce a device by which the fabric as it is knit upon a rotary knitting-machine will be automatically held at a desired uniform tension upon the needles.

Other objects and advantages of our invention will be hereinafter more fully disclosed.

We attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of our take-up in use, showing the knitted fabric as it comes from the knitting-machine between the rollers of the take-up. Fig. 2 is a perspective view of the rotary portion of our take-up device, including the rotary friction-plate. Fig. 3 is a perspective view of the bottom stationary friction-plate. Fig. 4 is a vertical section of the rotary friction-plate and stationary friction-plate.

Similar letters refer to similar parts throughout the several views.

A A are the posts or standards attached to the knitting-head of an ordinary rotary knitting-machine (not shown in the drawings) as used in knitting-mills and upon which the fabric is knitted.

B is the knitted fabric as it comes from the knitting-machine and extends downward between the posts A A.

C C are two rollers geared together so as to turn toward each other from the top and adapted to receive the knitted fabric B between them and as they turn to draw the fabric B down between them.

The rollers C C have journal-bearings in the blocks or slides D D. One end of one of the rollers C is provided with a gear-wheel E, arranged to mesh with the gears upon the top of the rotating friction-plate F, as hereinafter described. The blocks D D are attached movably to the posts A A, so as to slide a limited distance up and down upon said posts.

F is a rotary or revolving friction-plate sup-

ported from the blocks D D by the arms or brackets *d d* and is capable of rotating with the posts A A, or revolving by a movement of its own, or remaining stationary while the posts A A, carrying the rollers C C, rotate within its circumference. Around upon the top face of the rotary plate F are cogs constructed and arranged to mesh with the cogs of the gear-wheel E.

G is a stationary friction-plate attached in any suitable means to the floor or table under the knitting-machine. The inside or bearing surface of the stationary friction-plate G is constructed to receive the exterior or bearing surface of the rotary friction-plate F, and the exterior or bearing surface of the rotary friction-plate F is constructed and adjusted to nicely fit upon the interior or bearing surface of the stationary friction-plate G, as shown by Fig. 4.

The operation of our invention is as follows: The rotary knitting-machine being mounted upon the top of the posts A A, the posts A A revolve with the knitting-machine. The posts A A rotating carry with them the rollers C C and the rotary friction-plate F when not held by friction with the stationary friction-plate G, as hereinafter described. The fabric being knitted on the knitting-machine passes down between the rollers C C. When there is a slack in the knitted fabric, the blocks D D, carrying the rollers C C and the rotary friction-plate F, slide down the posts A A sufficiently to allow the bearing-surface of the rotary friction-plate F to come in contact with the bearing-surface of the stationary friction-plate G. When the two friction-plates come together, as thus described, the friction between them will hold the rotary friction-plate stationary for the time being. While the rotary friction-plate F is thus held stationary, the posts A A, carrying the rollers C C, are still rotating as before. The cogs of the cog-wheel E being in contact and meshing with the cogs on the top face of the rotary friction-plate F, it is evident that when the friction-plate F is held stationary the cog-wheel E will revolve on its own axis. When the cog-wheel E revolves on its axis, the rollers C C will revolve and draw the knitted fabric down between them. This will continue until the knitted fabric is drawn so taut that it raises rollers C C and the blocks D D and the rotary friction-plate F up suffi-

ciently to break the contact between the two friction-plates. Thereupon the rotary friction-plate F will again rotate with the rotating parts of the machine and cog-wheel E
 5 cease to revolve on its own axis and the rollers C C cease drawing down the knitted fabric between them. Meanwhile the knitting-machine is all the time knitting more fabric, and as the knitted fabric becomes slack the
 10 friction-plates again come in contact, the rollers C C started as before, and the slack taken up and the rotary friction-plate lifted from its contact with the stationary friction-plate and the operation continued as long as the
 15 knitting-machine is running. The knitting-machine continues to run at a uniform speed, and a very little slack in the knitted fabric allows the friction-plates to come in contact, and a very slight movement of the rollers C C
 20 is sufficient to break the contact, so that the distance between the bearing parts of the two friction-plates is always extremely small and causes no noise on coming together, and the tension of the knitted fabric upon the needles
 25 of the knitting-machine is uniform.

The rotary friction-plate F may be made of any desired weight or may be temporarily weighted to meet the requirements of the various varieties of goods being knit upon the
 30 machine.

Constructed in this manner our take-up mechanism is extremely simple in its parts, positive in its operation, practically noiseless, needs no attention, and the desired tension
 35 upon the fabric being knitted is always regular, steady, and uniform.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a take-up for knitting-machines, the
 40 combination of a stationary plate, a rotary friction-plate movable into the stationary friction-plate and adapted to be connected to the knitting-head of an ordinary rotary knitting-machine, the rotary friction-plate ceas-
 45 ing to operate when in contact with the stationary friction-plate, a pair of horizontally-disposed rollers supported above and vertically movable to and from the rotary friction-plate, and a driving element carried by one
 50 of said rollers to engage a portion of the upper side of the rotary friction-plate, the said rotary friction-plate moving with the head of the knitting-machine to which it is adapted to be connected, or remaining stationary while

the connections between the same and the said 55 head of the knitting-machine and carrying the said rollers rotate within the circumference of the said friction-plate.

2. In a take-up for knitting-machines, posts adapted to be connected to a knitting-machine 60 head, blocks vertically movable in the posts, a pair of horizontally-disposed rollers geared together and having bearings in the said blocks, the rollers receiving the knitted fabric as it comes from the knitting-machine and 65 drawing it down between them as they revolve on their own axes, a bevel-pinion on one end of one of said rollers, an annular rotary friction-plate through which the posts project and having a rim of teeth on its upper surface to 70 mesh with the bevel-pinion, the latter being held disengageable from the rim of teeth by the movement of the blocks in the posts to effect a cessation of movement of the rollers, and a stationary friction-plate below and ar- 75 ranged to receive the rotary friction-plate and retard movement of the latter when contact of the two plates is effected.

3. In a take-up for knitting-machines, the combination of posts adapted to be connected 80 to the rotary head of a knitting-machine, blocks disposed in the posts and having an automatic vertical adjustment, a pair of horizontally-disposed parallel rollers geared together with journal-bearings in said blocks, 85 said rollers receiving the knitted fabric as it comes from the knitting-machine and drawing it downwardly between them as they revolve on their own axes, brackets attached to the blocks and depending therefrom, an an- 90 nular rotary friction-plate held by said brackets, the posts and brackets projecting through the said friction-plate and the latter having a rim of teeth on the upper side thereof, a bevel-pinion on one end of one of the rollers 95 to mesh with the rim of teeth and disengageable from the latter by the movement of the blocks in the posts, and a stationary friction-plate to receive and hold or retard the movement of the rotary friction-plate when the lat- 100 ter is in contact therewith.

Signed at Gloversville, New York, this 20th day of January, 1904.

ALBERT H. OBENHOFF.
 DENNIS J. BRODERICK.

Witnesses:

FRED S. DOLE,
 F. P. RIGHTMEYER.