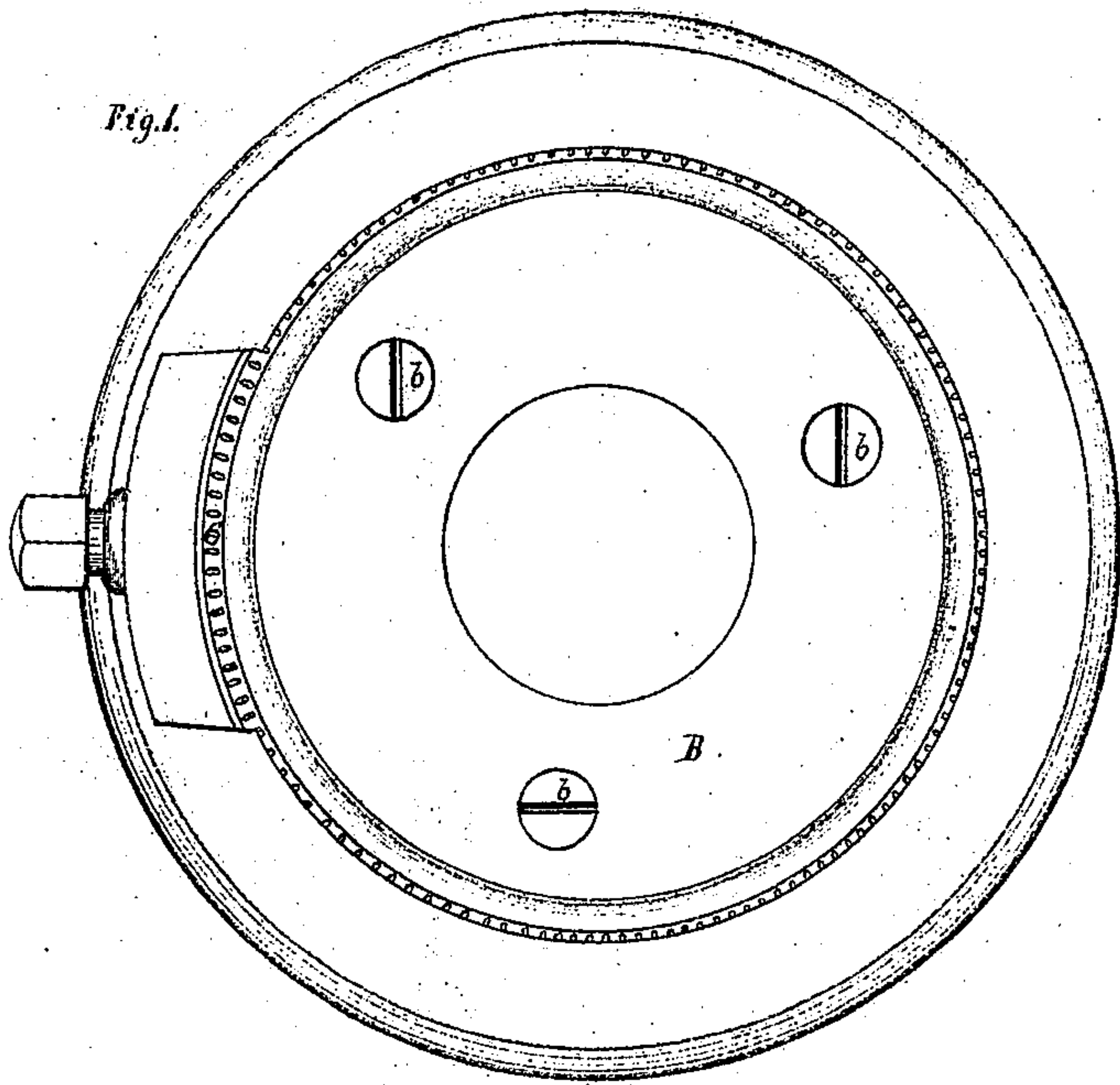


*C. H. Young,*  
*Knitting Mach.*

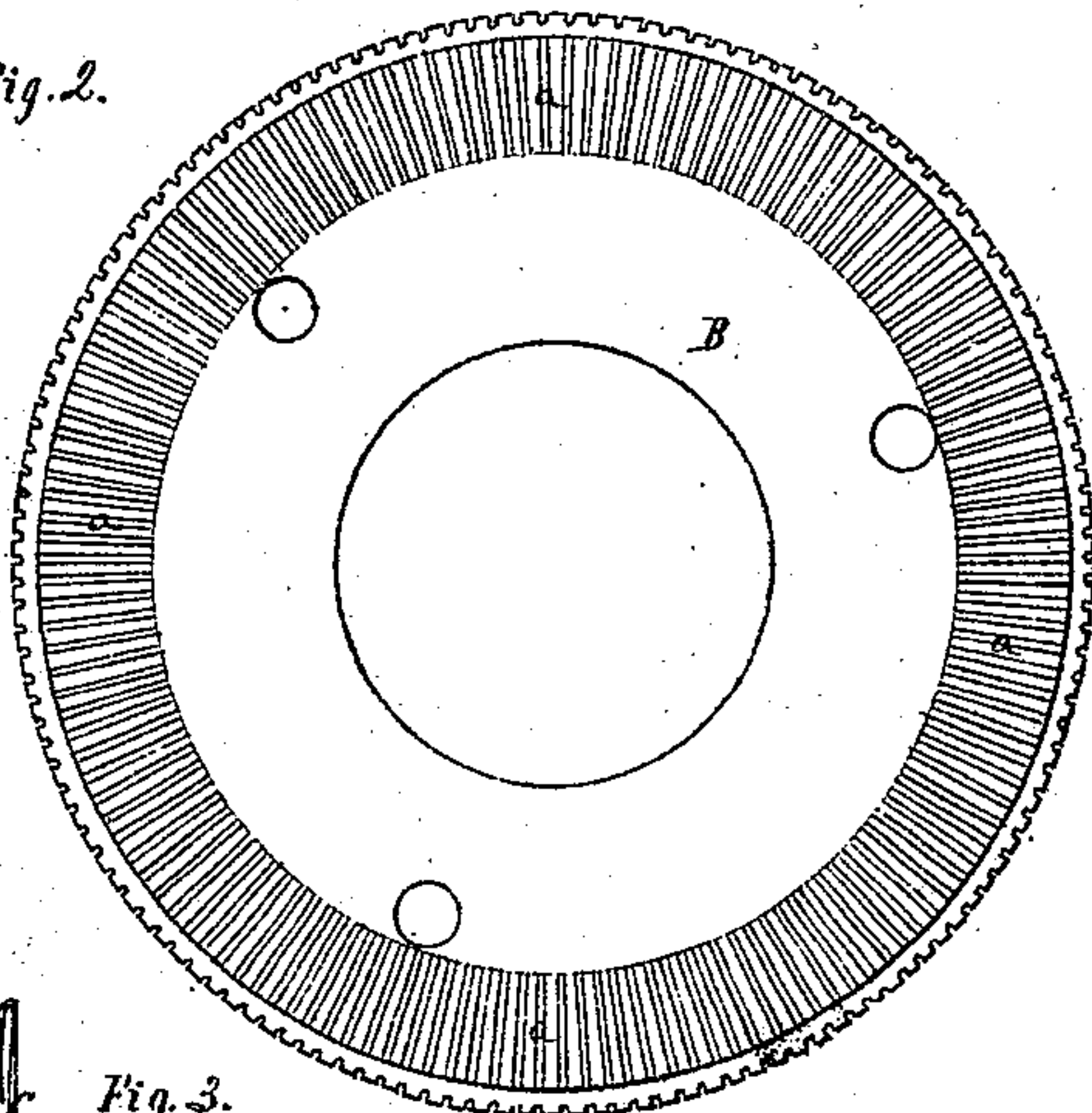
*No. 107,318.*

*Patented Sep. 13. 1870.*

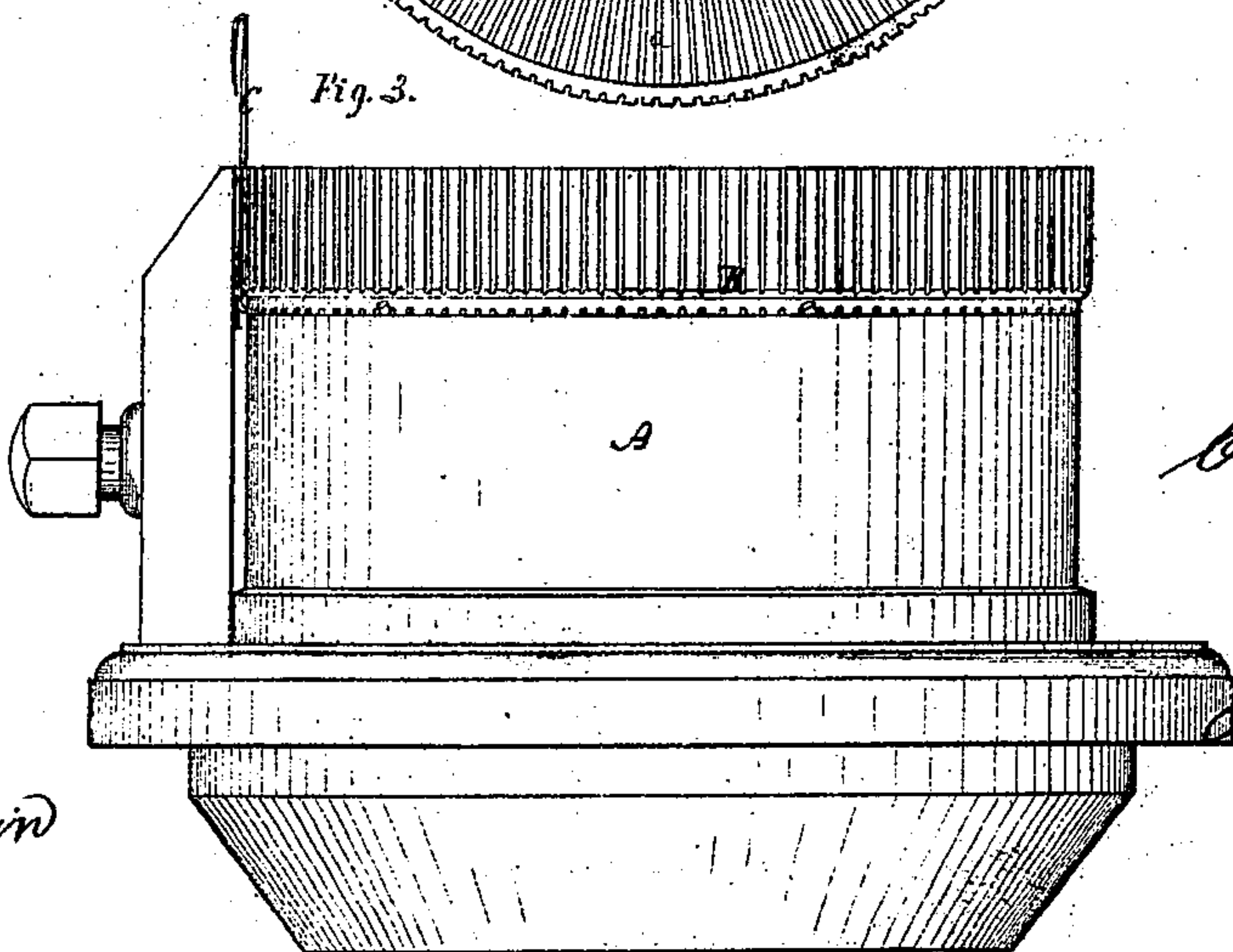
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:-

*D. J. Brown*  
*R. D. Smith*

*Charles H. Young,*  
*By his atty.,*

*J. S. Brown*

# UNITED STATES PATENT OFFICE.

CHARLES H. YOUNG, OF LAKE VILLAGE, NEW HAMPSHIRE.

## IMPROVEMENT IN THE CONSTRUCTION OF CYLINDERS OF KNITTING-MACHINES.

Specification forming part of Letters Patent No. **107,318**, dated September 13, 1870.

*To all whom it may concern:*

Be it known that I, CHARLES H. YOUNG, of Lake Village, in the county of Belknap and State of New Hampshire, have invented an Improvement in the Construction of Knitting-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification—

Figure 1 being a top view of a cylinder for circular-knitting machines constructed in my improved manner; Fig. 2, a side view of the same; Fig. 3, a view of the under surface of the separate or removable top.

Like letters designate corresponding parts in all of the figures.

The nature of my invention consists in making the top of the cylinder or head of a knitting-machine, above where the shanks of the needle are inserted, in a separate piece, and grooving the lower surface thereof to receive the needle-shanks, the said top then being screwed or otherwise secured to the main part of the cylinder or head of the machine, for the purposes herein specified.

Let A represent the main part or body of the cylinder. The top B, above the holes *a a*, which receive the shanks of the needles *c c*, is cast or formed in a separate piece, and it has grooves *a a* formed radially in its under surface, as seen in Fig. 3, to receive the shanks of the needles when this top is laid on the main part of the cylinder, to which it is secured by screws *b b*. The advantages of this construction over the usual construction of the cylinder in one piece, with radial holes drilled through the upper part or flange thereof for the reception of the needle-shanks, are marked and valuable.

First, the construction is much cheaper, since the grooves *a a* are cut easily and rapidly with a saw or revolving cutter, and the

peripheral grooves of a large number of the tops can be cut at the same time, while with the whole cylinder all the holes have to be drilled into the cast-iron—a tedious and expensive work—and the peripheral grooves of each cylinder have to be cut separately. The construction, also, is much more accurate, since the grooves *a a* may be cut more uniformly and more regularly apart than holes can be drilled.

Second, the construction is much stronger, and not liable to break at all, whereas the cylinder of the usual construction is very liable to break off at the needle-holes, being excessively weakened there, especially if fine needles are used.

Third, with this construction needles of any degree of fineness may be used for producing the finest work, since the grooves *a a* may be cut as small and close as desired, while with the usual construction it is impracticable to use needles finer than No. 24 gage.

Fourth, this construction affords great facility for changing from one gage of work to another, finer or coarser, or for changing the style of work by simply changing the tops, whereas the ordinary construction can only admit change of gage by changing the whole cylinder.

What I claim as my invention, and desire to secure by Letters Patent, is—

The knitting-machine cylinder or head having its top B made separate, removable, and grooved in its under surface for the reception of the shanks of the needles, substantially as and for the purposes herein specified.

Specification signed by me January 6, 1870.

CHARLES H. YOUNG.

Witnesses:

GEO. H. ROBY,  
JOHN F. DANIELS.