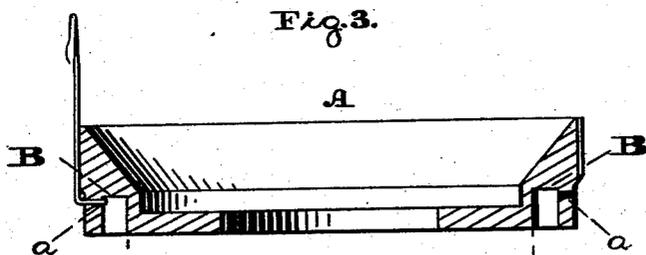
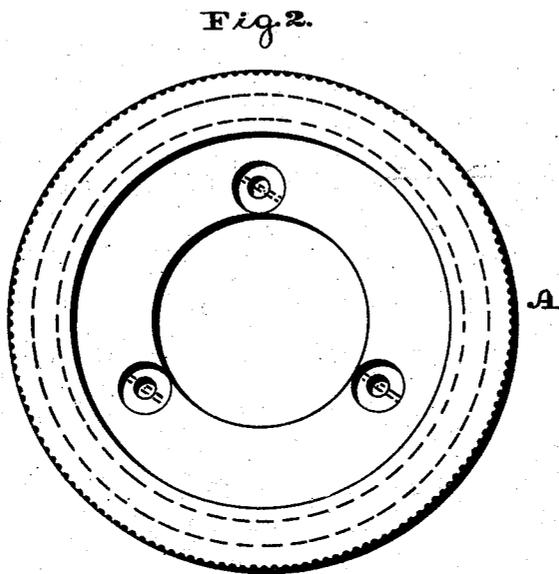
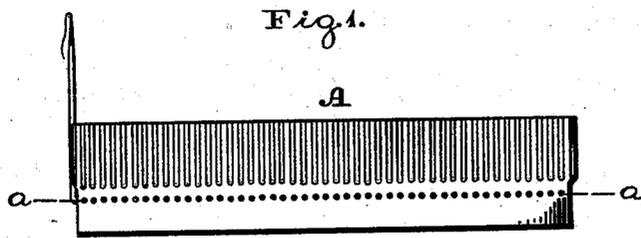


A. GREISS.  
Knitting-Machine Cylinder.

No. 207,029.

Patented Aug. 13, 1878.



Witnesses:  
*Lewis F. Bond,*  
*Rob. P. Grant.*

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Attorney.

# UNITED STATES PATENT OFFICE.

ADAM GREISS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN KNITTING-MACHINE CYLINDERS.

Specification forming part of Letters Patent No. 207,029, dated August 13, 1878; application filed November 6, 1877.

*To all whom it may concern:*

Be it known that I, ADAM GREISS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Knitting-Machine Cylinders, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the cylinder embodying my invention. Fig. 2 is a top view thereof. Fig. 3 is a vertical section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a rotary cylinder having perforations for the reception of the shanks or heels of the needles and an under-cut or groove on the under face of the cylinder, with which the perforations communicate, whereby, should the shanks or heels break when in the perforations, they may be driven inwardly through the perforations into the groove, from whence they will fall on the head below, and they will there work out, or they may be removed through the space between the head and cylinder.

Referring to the drawings, A represents the cylinder, in the side or wall of which, above the bottom, there are perforations *a*. On the lower face of the cylinder there is an annular groove, B, which communicates with the inner ends of the perforations *a*, or with which said ends are in communication, as more readily illustrated in Fig. 3. The width of the groove B is greater than, or at least equal to, the length of the perforations *a*.

It will be seen that the perforations *a* are in the solid portion of the cylinder, and when the shanks of the needles are introduced thereinto the needles will be properly supported vertically and prevented from dropping down, thus obviating a serious difficulty heretofore existing in knitting-cylinders.

Should the shanks or heels of the needles break while in the perforations *a*, they may be driven therethrough into the groove B, from whence the broken shanks will fall on the head below the cylinder, (shown in dotted lines, Fig. 3,) and thus be readily removable; or they will automatically work themselves out when the cylinder is in motion through the space existing between the upper end of said head, at the periphery thereof, and the bottom of the cylinder, by which means I obviate the necessity of displacement of the cylinder A or drilling out of the broken shanks.

I am aware that it is not new to pierce the needle-cylinder, so that the broken pieces of the needles may be driven into the top space of the cylinder. In this case the cylinder is entirely pierced through; but the line of perforations thus formed weakens the cylinder thereat, so that the cylinder cracks or breaks at said line.

In my construction the perforations *a* extend only through the outer wall of the groove B, leaving the inner wall imperforate, whereby, while the necessary perforations are provided, the cylinder remains strong and durable.

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

The needle-cylinder A, having on its under face an under-cut or groove, B, communicating with the openings *a* in the wall of the cylinder and with the space between the cylinder and head below it, substantially as and for the purpose set forth.

ADAM GREISS.

Witnesses:

H. E. HINDMARSH,  
JOHN A. WIEDERSHEIM.