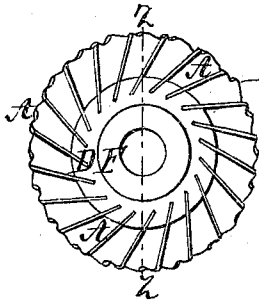


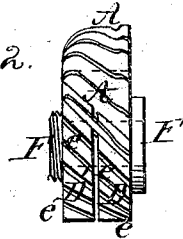
*W. H. Carr*  
*Knitting Mach. Burr.*

*N<sup>o</sup> 43,636.*

*Patented Jul. 26, 1864.*

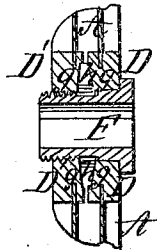


*Fig. 1.*



*Fig. 2.*

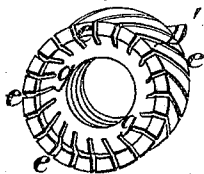
*Fig. 3.*



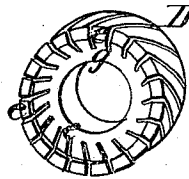
*Fig. 4.*



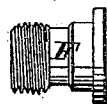
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



*Witnesses,*

*Thomas J. Cornelius*  
*Austin F. Park.*

*Inventor:*

*W. H. Carr.*

# UNITED STATES PATENT OFFICE.

WILLIAM H. CARR, OF TROY, NEW YORK, ASSIGNOR TO HIMSELF AND  
NELSON P. AKIN.

## IMPROVEMENT IN KNITTING-MACHINE BURRS.

Specification forming part of Letters Patent No. 43,636, dated July 26, 1864.

*To all whom it may concern:*

Be it known that I, WILLIAM H. CARR, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Burrs for Knitting-Machines, of which the following contains a full and exact description, reference being had to the annexed drawings, in which—

Figure 1 is an end view, Fig. 2 a side view with part of the blades removed, and Fig. 3 a section at or about the line  $z z$  in Fig. 1, of a knitting-machine burr embodying my invention. Fig. 4 is a side view of one of the blades; Figs. 5 and 6, perspective views of the two parts of the slotted hub which holds the blades, and Fig. 7 a side view of the part by which the two parts of the slotted hub are secured together in that burr—like parts being marked by the same letters in all the figures.

Before this invention burrs for knitting machines had been made with removable wings or blades, clamped in a slotted hub in such manner that the blades, when broken or worn out, could be readily removed and replaced by new ones upon simply loosening or removing the devices by which the blades were clamped in the slotted hub, examples of such knitting-burrs being shown in the specifications and drawings of English Patent No. 10,724, granted in the year 1845, and United States Letters Patent No. 35,565, dated June 10, 1862; but in such knitting-burrs the removable blades were secured in a slotted hub by rings or disks clamped against the lateral edges of the blades outside of the slotted part of the hub at its ends, so that that part of the body of the burr which held the blades had a considerably greater thickness than the slotted part of the hub in which the blades were inserted, which greater thickness rendered the burr much more bulky and far less convenient to use in some kinds of knitting-machines than the common knitting-burr having blades of like width soldered fast in a simple slotted hub.

Now, one part of my invention consists in making the inner ends of removable wings or blades *A* of knitting-machine burrs each with a dovetail or flaring projection, *b*, Fig. 4, and two shoulders, *c c*, one on each side of the

said flaring projection, in such manner that blades thus formed can be firmly secured in a hollow slotted hub of suitable construction by means of devices located within or inside of the hub, instead of at the outer ends or on the outside thereof.

Another part of my invention consists in making a slotted hub for a knitting-machine burr of two separable rings, *D D'*, having equal series of slots *e e* in and around them, and held together, end to end, by a central screw-bolt, *F*, or its equivalent, and having the unslotted inside parts of their inner ends, *g g*, made hollowing or inclined outward toward each other, so as to thereby form an outwardly-narrowed annular space, *h*, Fig. 3, between the two hub-rings in such manner that a series of separate knitting-burr blades of suitable size and shape can be freely inserted and firmly clamped within and by the said united hub-rings themselves without the aid of any other device or devices.

And another part of my invention consists in the arrangement of a series of knitting-burr blades, *A*, each having on its inner end a dovetail or flaring projection, *b*, and shoulders *c c* on both sides thereof, in combination with a knitting-burr hub composed of two rings, *D D'*, having equal series of slots *e e* in and around them, and held together, end to end, by a central screw-bolt, *F*, or its equivalent, with the inside unslotted part, *g g*, of their inner ends inclined outward toward each other in such manner that the said inclined inner ends, *g g*, of the hub-rings clamp against the inclined edges *i i* of the flaring projections *b* of the blades, and thereby draw and hold the blades into and with their shoulders *c c* tight against the bottoms of the slots *e e* in the hub-rings, and thus produce a cheap and durable knitting-burr, from which any or all of its blades can be readily removed and replaced by others upon simply loosening the hub-rings, and in which the blades are clamped in a slotted hub, not only by means of devices located inside of the hub, but by means of the inner ends of the two united hub-rings that constitute the slotted hub itself. And such a knitting-burr is thinner and lighter, and generally more readily applied to knitting-machines of close and compact construction than a knit-

ting burr having projecting blades of like width clamped in a slotted hub by means of devices applied to the edges of the blades at the outer ends or on the outside of the slotted hub.

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

1. A knitting-burr blade, A, having on its inner end a dovetail or flaring projection, *b*, and lateral shoulders *c c*, substantially as herein described.

2. A knitting-burr hub composed of two rings, D D', slotted and secured together, end to end, and having an outwardly-narrowed annular space, *h*, formed by and between the

inner ends of the said united hub rings, substantially as herein described.

3. The combination of a series of wings or blades, A, each having a dovetail or flaring projection, *b*, and shoulders *c c*, on its inner end, with a hub composed of two rings, D D', slotted and clamped together, end to end, and having an outwardly-narrowed annular recess, *h*, formed by and between the inner ends of the said united hub rings, substantially as herein described.

WM. H. CARR.

Witnesses:

THOMAS J. CORNELIUS,  
AUSTIN F. PARK.