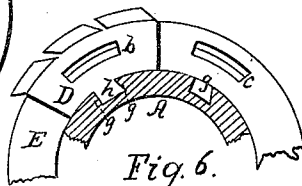
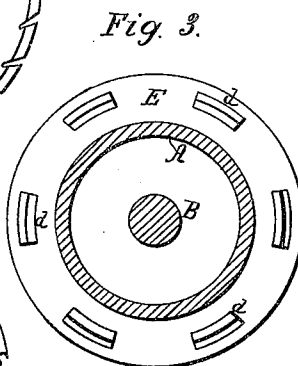
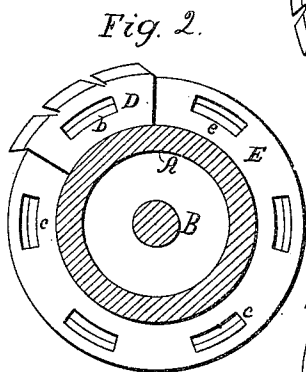
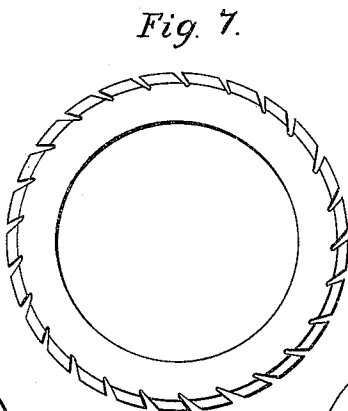
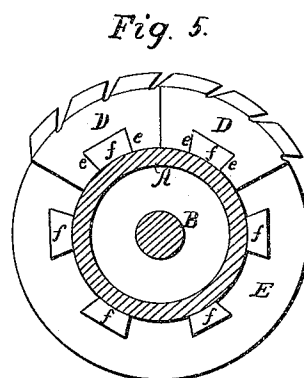
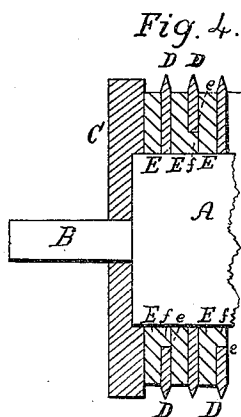
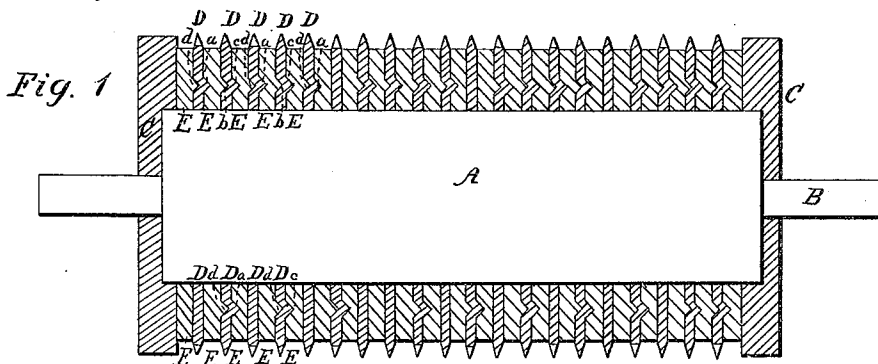


J Bidwell, Burring Machine.

Nº 26,081.

Patented Nov. 15, 1859.



Witnesses.

*W. F. Smith
R. B. Allen*

Inventor.

James Bidwell

UNITED STATES PATENT OFFICE.

JAS. BIDWELL, OF NEW YORK, N. Y.

BUR-CYLINDER.

Specification of Letters Patent No. 26,081, dated November 15, 1859.

To all whom it may concern:

Be it known that I, JAMES BIDWELL, of the city, county, and State of New York, have invented a new and Improved Method of Attaching and Securing the Teeth of Bur-Cylinders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of a complete bur cylinder having my invention applied. Figs. 2 and 3 are transverse sections of the same. Fig. 4 is a longitudinal section of part of a cylinder showing a modification of the method of applying the teeth. Fig. 5 is a transverse section corresponding with Fig. 4. Fig. 6 is a transverse section of a part of a cylinder showing another modification of the method of applying the teeth. Fig. 7 is a side view of one of the toothed rings commonly employed in bur cylinders.

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

The bur cylinders heretofore commonly used have their teeth formed on flat rings of steel plate as exhibited in Fig. 7. The body of the cylinder having been turned truly in a lathe has these rings simply slipped on with rings termed packing rings arranged between them, and the whole of the rings are secured in place lengthwise of the cylinder by means of heads one or both of which are movable. This method of constructing and applying the teeth does not admit of their being hardened or tempered as it has not been found possible to preserve the form of the rings in the tempering process; and moreover it entails a great waste of material for though the rings are made of various sizes and the smaller ones are cut from the inside of the larger ones a circular blank of considerable size, which is useless to the manufacturer, is left from the inside of each of the smallest ones, besides the waste corners that are left at the exteriors of the larger rings.

The object of my invention is so to construct the teeth as to obviate as far as practicable the waste of metal in their manufacture and to permit of their being hardened and tempered, and yet to so apply them to the cylinder as to perfectly secure them thereto; and to this end my invention consists in constructing the teeth on plates

which constitute segments of a ring and securing such plates to the packing rings by means of projections on the one and recesses in the other.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A (Figs. 1, 2, and 3) represents the body of the cylinder made of cast or sheet iron without grooves, B is the shaft, and C C are the heads applied in the usual manner to the body A and shaft B.

D, D, are the toothed segment like plates, and E, E, are the packing rings both fitted to the periphery of the body A, of the cylinder and the said plates D, D, being furnished with projections *a, a*, and recesses *b, b*, on and in their sides to fit into and receive corresponding recesses *c, c*, and projections *d, d*, formed in and on the sides of the packing rings, said projections and recesses being all produced by stamping in dies or in any other suitable manner. The said projections and recesses, when the toothed plates and packing rings are clamped together between the cylinder heads, confine the said plates and rings together in such a manner as to make them equivalent to a perfect hollow cylinder, and the toothed plates are severally made immovable.

The cylinder represented in Figs. 4 and 5 is just like that represented in Figs. 1, 2, and 3, but the toothed plates D, instead of having projections and recesses on and in their sides, have notches *e, e*, of dovetail form cut in their inner edges to receive projections *f, f*, which are formed upon the sides of the packing rings E, E.

The cylinder represented in Fig. 6 has longitudinal grooves *g, g*, provided in it to receive and fit tongues *h, h*, of dovetail form, formed upon the toothed plates D, which are also secured to the packing rings E, by projections and recesses similar to those represented in Figs. 1, 2, 3. The tongues *h, h*, have to be inserted in the open ends of the grooves *g*, at the ends of the cylinder.

I am aware that in securing types to printing cylinders lateral projections have been used to fit into corresponding recesses on the adjacent types without the interposition of a continuous packing. I am also aware that rings have been fitted between the types in recesses provided for them but such rings have not been fitted to the cylinder. I however disclaim such contrivances, and I also

disclaim the use of packing rings between the teeth of burring cylinders when such rings are not fitted to the teeth with lateral projections and recesses; but

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

Securing the toothed plates D, in place by providing them with projections or recesses

to fit to corresponding recesses or projections provided in or on the interposed packing rings fitting to the body of the cylinder, substantially as herein described. 10

JAMES BIDWELL.

Witnesses:

WM. TUSCH,

MICH. HUGHES.