

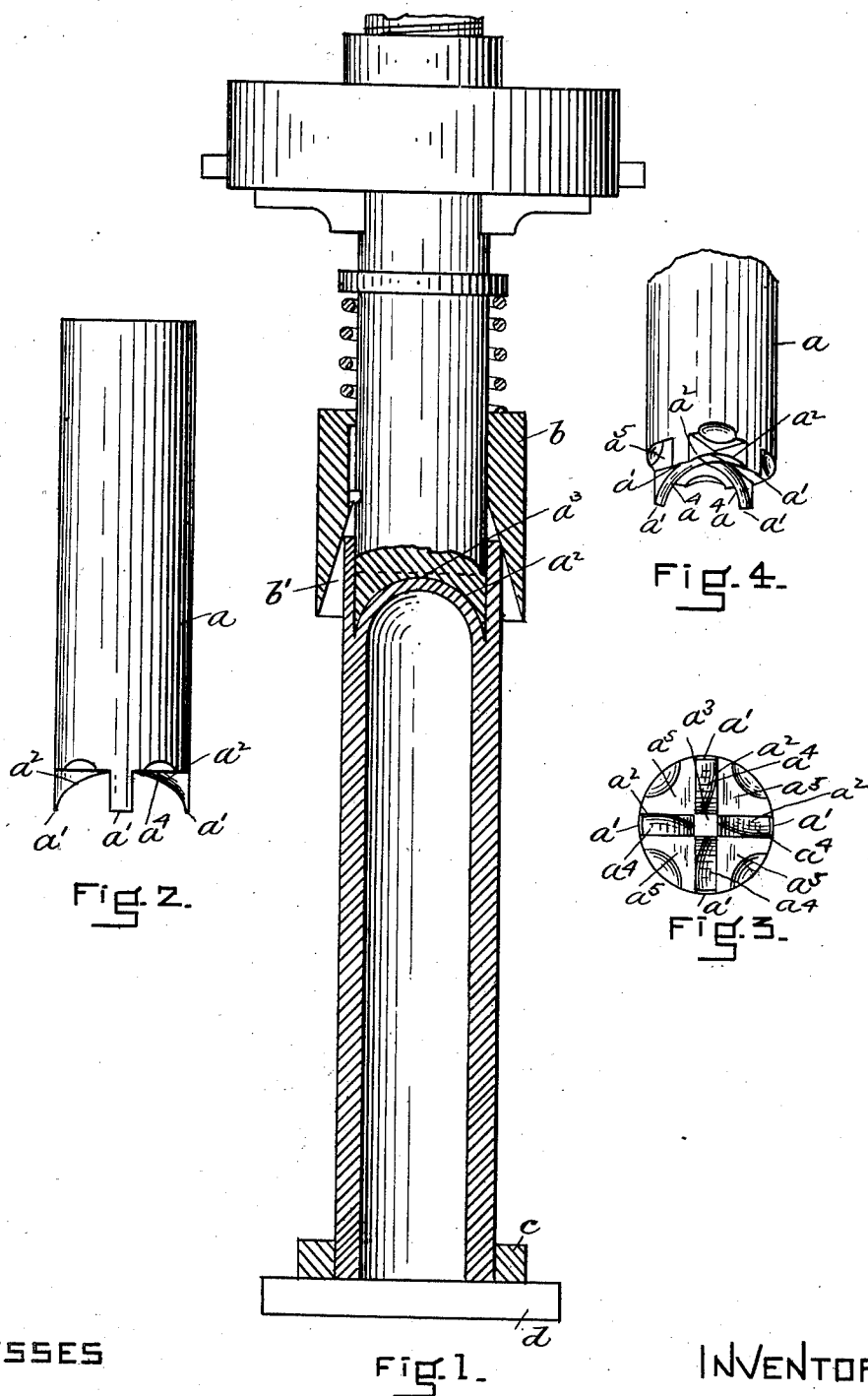
(No Model.)

R. M. CLARK.

TOOL FOR SHAPING ENDS OF PAPER TUBES, &c.

No. 586,703.

Patented July 20, 1897.



WITNESSES

James A. Lowell.
J. M. Dolan.

FIG. 1.

INVENTOR

Robert M. Clark.

UNITED STATES PATENT OFFICE.

ROBERT M. CLARK, OF NEWTON, MASSACHUSETTS.

TOOL FOR SHAPING ENDS OF PAPER TUBES, &c.

SPECIFICATION forming part of Letters Patent No. 586,703, dated July 20, 1897.

Application filed August 15, 1896. Serial No. 602,903. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. CLARK, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Tools for Shaping the Ends of Paper Tubes and Cases, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a tool for closing the end of a paper tube or case by a portion of the substance of said end, the said tool comprising one or more rotating cutters which are adapted to sever or cut upon its side the section of the end of the tube or case which is to close it and one or more rotary turning-surfaces which are caused by their shape and their rotary movement in relation to the end of the tube or case to turn inward the said severed section to the shape of a dome. The tool also has a centering device by which the end of the tube or case is centered in relation to the cutter or cutters and the rotary turning-surfaces.

In the drawings, Figure 1 is a view, partly in elevation and partly in vertical section, of the tool, showing its relation to the tube at the completion of the closing of the end. Fig. 2 is a view in elevation of the tool alone. Fig. 3 is a view in elevation of the working end of the tool. Fig. 4 is a view in perspective of the working end of the tool.

The tool is preferably made of steel or other suitable metal. It is also preferably cylindrical in shape and has the shank a , by which it may be attached to any suitable mechanism, like a lathe-chuck, and its outer or working end has one or more cutters a' on a line with the circumference of the tool and which are quite narrow, the lower edges of which may be sharpened and slightly inclined. The tool also has besides these cutters one or more turning-surfaces a'' .

In the drawings I have represented the tool as having four cutters and four of these turning-surfaces, each extending outward upon a curve from the center a^3 to a cutter and having the inclined or rounded working edge a^4 . These turning-sections are narrow and

are separated from each other by relatively deep recesses a^5 . There is arranged to slide upon the shank of the tool the guiding-sleeve b . This has a recessed end b' , which is tapering in shape. The sleeve is longitudinally movable upon the shank and may be pressed toward its working end by a spring or weight.

If the tool is vertically held, as represented in Fig. 1, its weight alone may suffice to provide it with such movement. The tapering end is thereby always forced toward the end of the tool and in a position to receive the end of a tube or case and center it in relation to the tool, moving with the tube or case lengthwise.

The tool as it works into the end of the case severs the inner section of the wall from the outer section and molds over said inner section into the shape of a dome. The lower end of the tube may be centered by a suitable centering-holder, and the tube, during its presentation to the tool or the presentation of the tool to it, may rest upon a bed or table, and in the drawings c represents the centering device for centering the lower end thereof, and d the said supporting-table.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A rotary tool of the character specified having one or more cutters a' and one or more turning-surfaces extending from the central part of one end of the tool outwardly.

2. A rotary tool of the character specified, having one or more turning-surfaces extending from the center of its end outwardly, as and for the purposes described.

3. A rotary tool of the character specified having one or more turning-surfaces in its end curved as specified and inclined from one edge.

4. A rotary tool of the character specified, having one or more cutters a' , one or more turning-surfaces in its end shaped as described, and a tube-guide.

ROBERT M. CLARK.

Witnesses:

JAMES A. LOWELL,
J. M. DOLAN.