J. C. COBURN.

Machines for Molding Spool-Heads from Paper Pulp.

No. 151,757. Patented June 9, 1874.

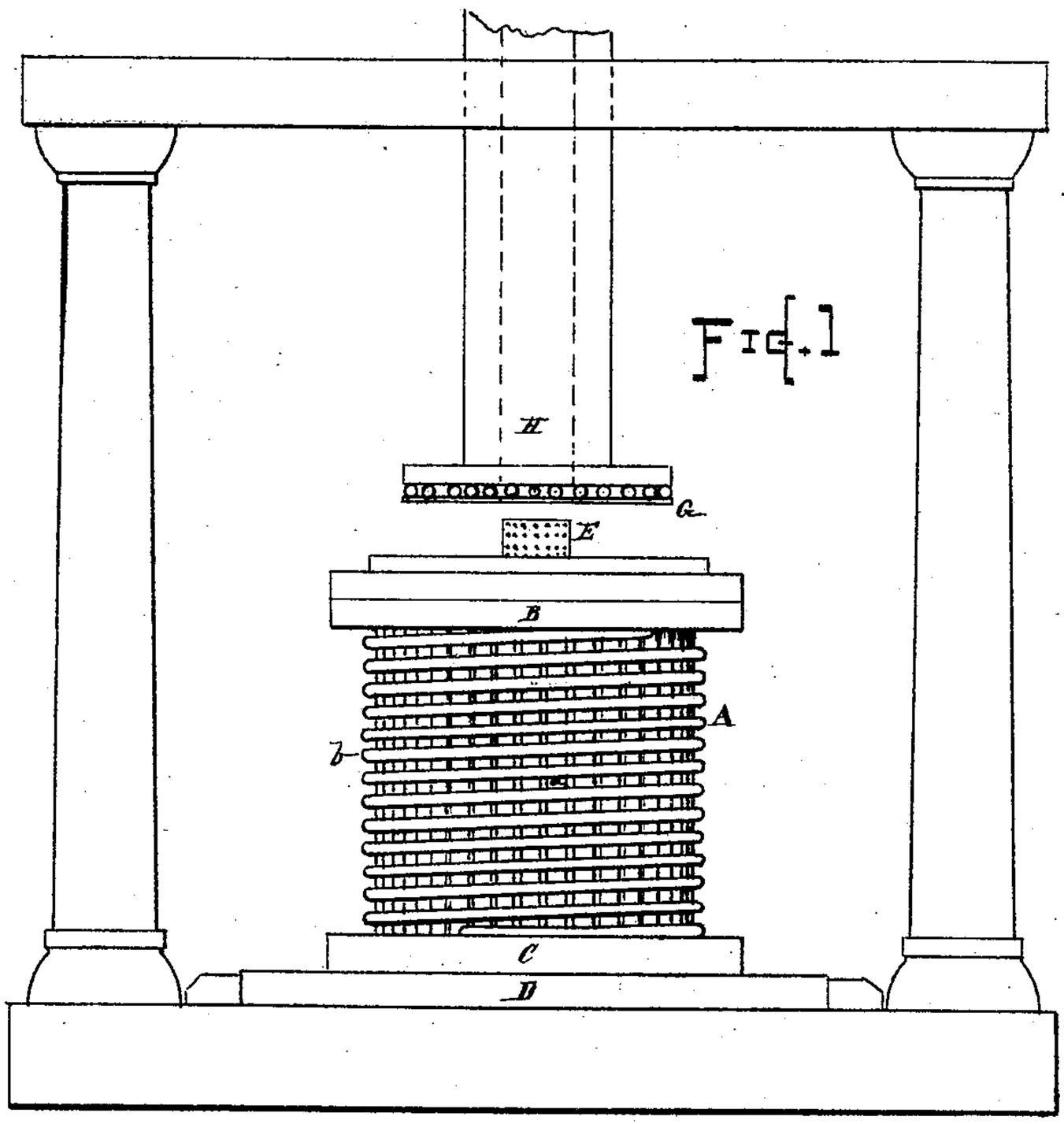

FIG. 1

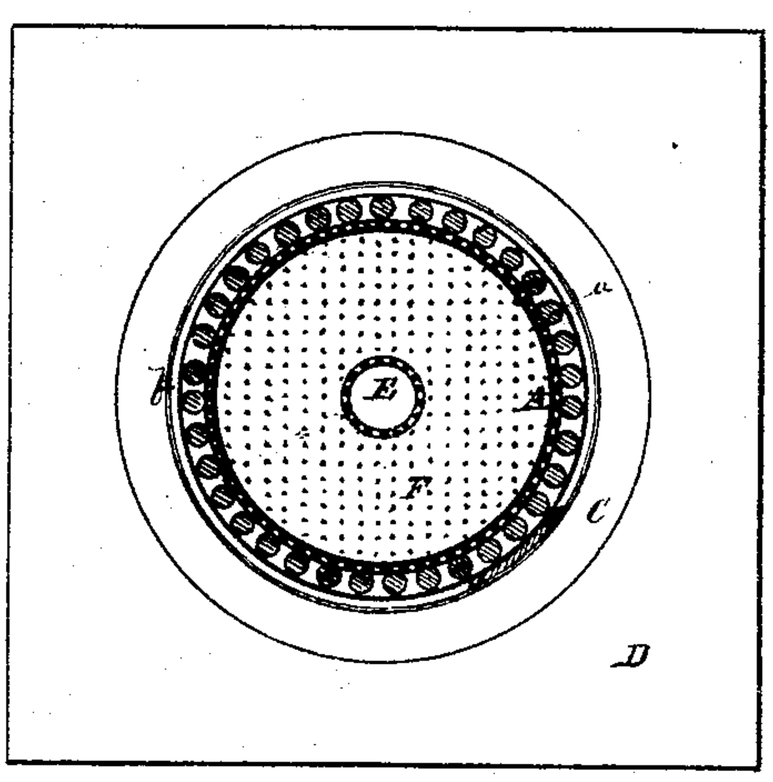

FIG. 2

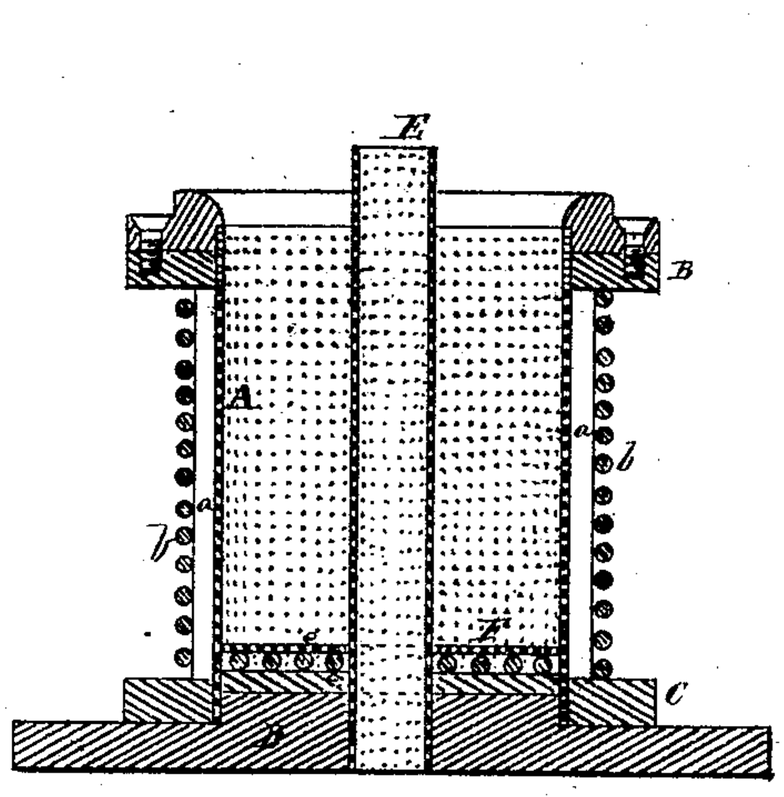

FIG. 3

Witnesses

Chas. H. Burleigh

S. P. Fris-ett

Inventor

Jehiel C. Coburn

AM. PHOTO-LITHOGRAPHIC Co. N. Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

JEHIEL C. COBURN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO LEMUEL COBURN AND JOHN K. JAMES, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR MOLDING SPOOL-HEADS FROM PAPER-PULP.

Specification forming part of Letters Patent No. **151,757**, dated June 9, 1874; application filed December 10, 1873.

CASE A.

To all whom it may concern:

Be it known that I, JEHIEL C. COBURN, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Mechanism for Forming Spool-Heads from Pulp; 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, which form a part of this specification, and in which—

Figure 1 represents a front view of such parts of my improved spool-head mechanism as are necessary to illustrate my invention. Fig. 2 represents a horizontal section of the forming-cylinders, and Fig. 3 represents a central vertical section of the same.

The nature of my invention consists in improved mechanism for forming spool-heads directly from pulp, as hereinafter described.

In my improved mechanism I employ an outer cylinder, marked A in the drawings, formed of perforated sheet metal, supported and braced on the exterior by vertical wire bars *a*, extending from end to end of the cylinder, and having their extremities fixed in the upper annular rim B and lower rim C, which rims embrace the upper and lower ends of the cylinder, while a helical winding, or hoops, of wire, *b*, envelops the bars *a* between the rims B C, as illustrated. The cylinder A is supported upon a suitable bed-plate, D, having a circular disk raised at its center, which disk fits into the lower end of the cylinder, and retains it in position on the bed. Within the cylinder A, concentric therewith and projecting up from the center of disk on the bed D, I arrange a second smaller cylinder, E, which I also make of perforated metal, and of a diameter equal to the required diameter for the eye of the spool-head or opening, into which the spindle or barrel of the spool fits. The outer cylinder A equals the outer diameter of the spool-head. I arrange a bottom plate, F, in the annular space between the two cylinders A E, which plate F is of perforated metal, with lateral bars or pieces of wire *e* soldered to its under side, as indicated. A similar plate, G, is also arranged between the face of the pressure-plunger H and the spool-head material. The plunger H is formed hollow to receive the cylinder E within it as it descends into the cylinder A when the mechanism is in operation. The cylinders are arranged in a suitable frame, and the plunger H is to be combined with a screw, lever, or other device for imparting pressure thereto, which device may be of any suitable well-known construction, and is not, therefore, shown herein.

The operation is as follows: The pulp from which the spool-heads are to be formed is placed within the annular space between the outer and inner cylinders. Pressure is then applied to the plunger H, which is forced down upon the mass to condense it to the proper thickness, the moisture from the pulp passing out through perforations of the inner and outer cylinders and plates F G. When the water has been expelled from the pulp and the material properly condensed, the plunger H is raised and the spool-head removed by raising the outer cylinder A from the bed D, and then slipping the spool-head off from the inner cylinder E.

The spool-heads may be further condensed in a suitable swaging-die, to give the required uniformity of size and smoothness of surface, or they may be subjected to other modes of finish.

By the use of the central perforated cylinder the substance of the heads is caused to condense uniformly around the eye, so that the heads are not liable to be soft and weak at their junction with the barrel of the spool.

Having described my improved mechanism for forming spool-heads, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

The within-described mechanism for forming spool-heads from pulp, consisting of the concentric perforated cylinders A E, annular plates F G, and pressure-plunger H, all constructed and arranged for operation substantially as set forth.

JEHIEL C. COBURN.

Witnesses:

CHAS. H. BURLEIGH,

B. JAMES.