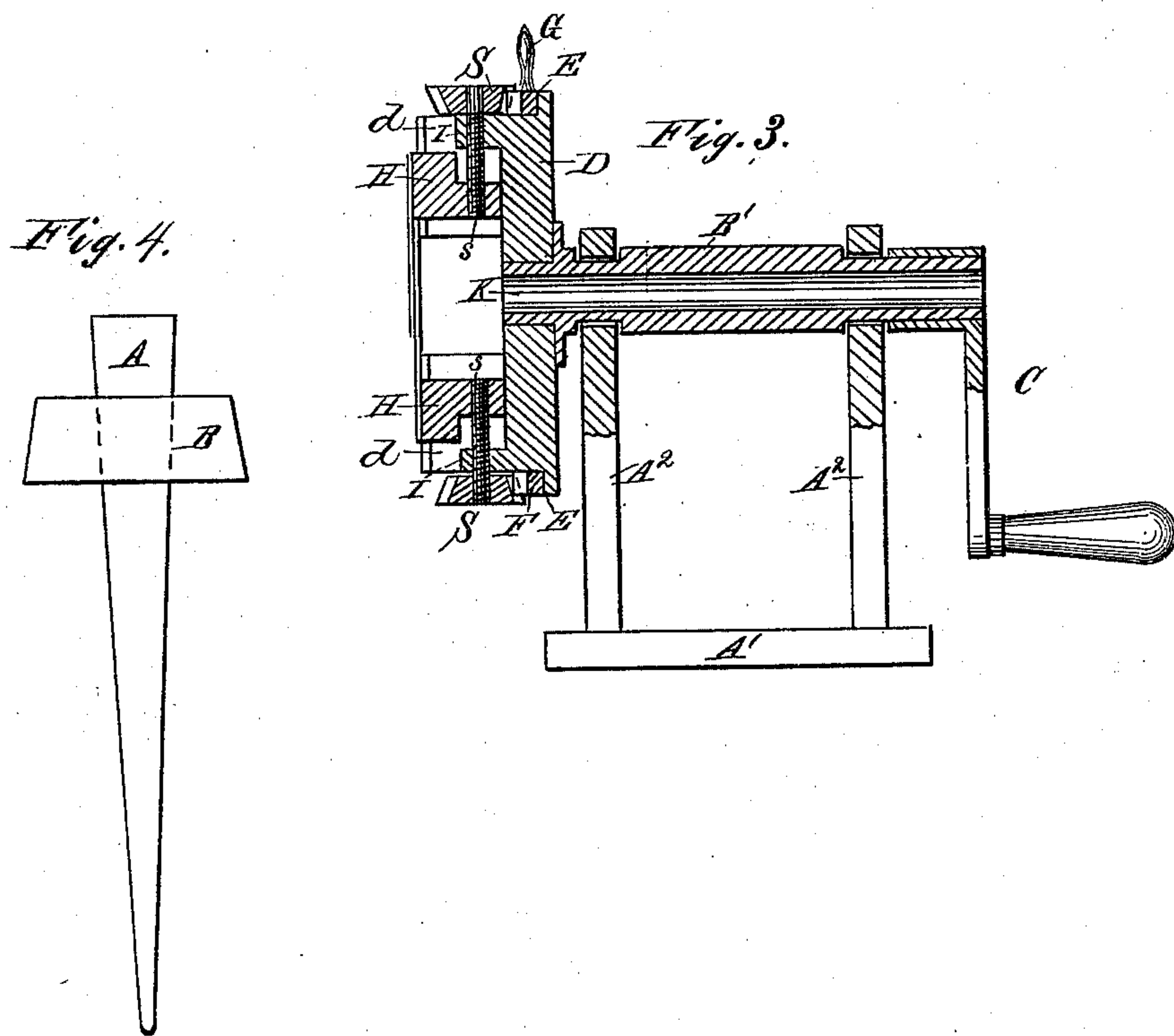
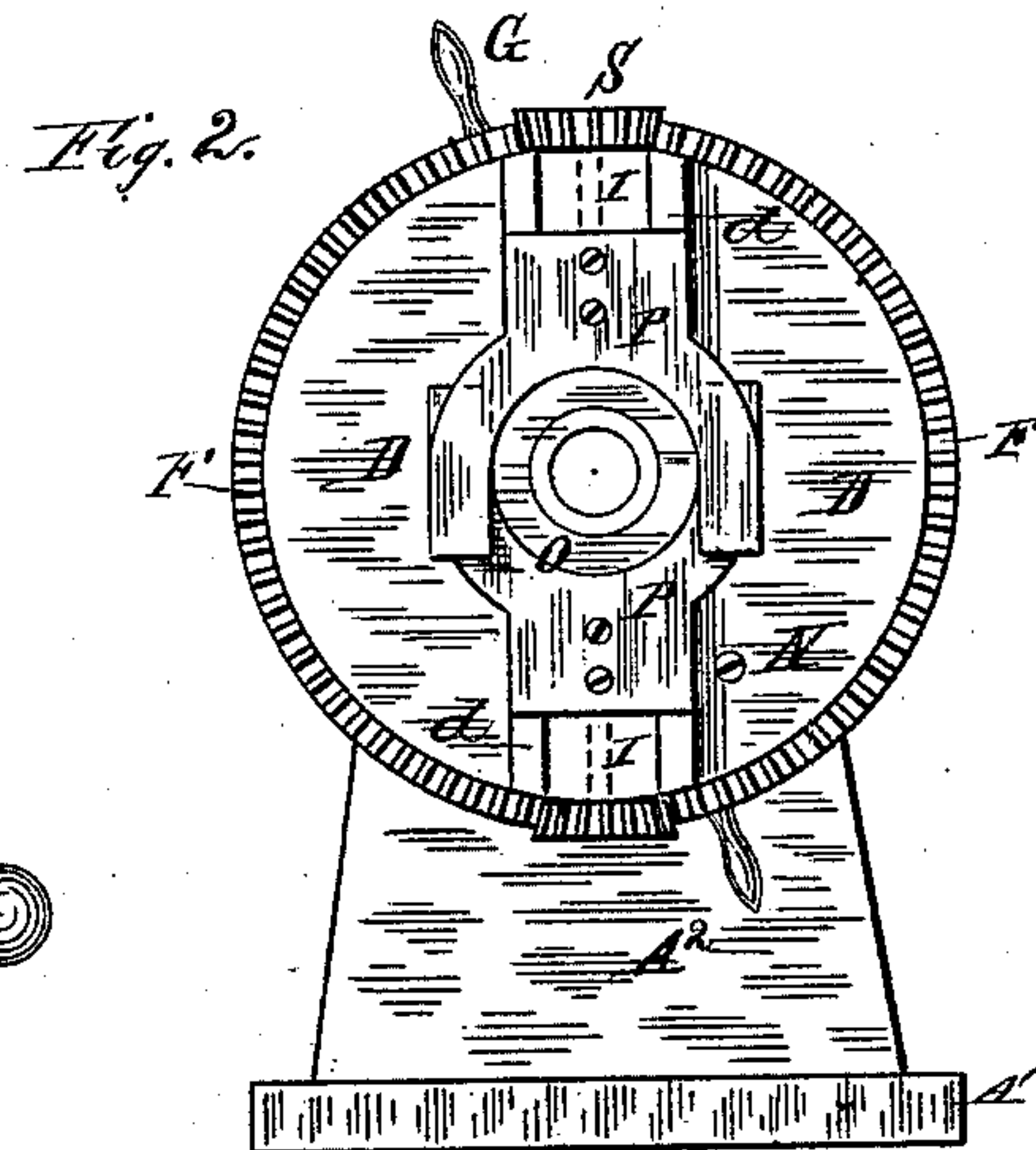
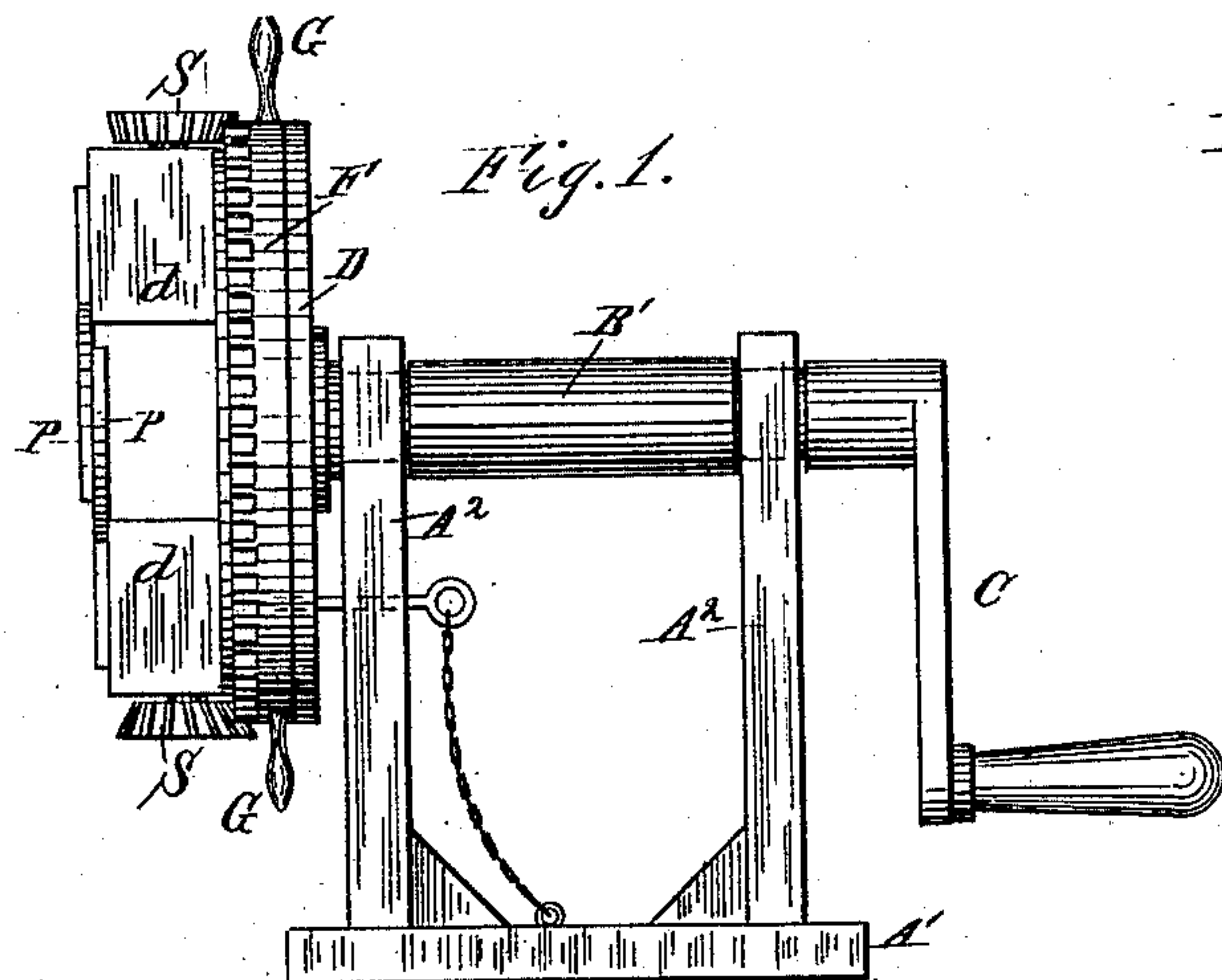


C. A. WATKINS.
Brush Machine.

No. 232,576.

Patented Sept. 21, 1880.



Attest:
Charles R. Searle
L. Fargo.

C. A. Watkins,
Inventor:
By North Osgood,
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES A. WATKINS, OF GREEK STREET, SOHO SQUARE, ENGLAND.

BRUSH-MACHINE.

SPECIFICATION forming part of Letters Patent No. 232,576, dated September 21, 1880.

Application filed December 18, 1879. Patented in England June 19, 1879.

To all whom it may concern:

Be it known that I, CHARLES ADOLPHUS WATKINS, of the firm of Hamilton & Co., brush manufacturers, of Greek street, Soho Square, in the county of Middlesex, England, have made certain new and useful Improvements in Brush-Machines, of which the following is a full, clear, and exact description; reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a side elevation, Fig. 2 a front elevation, and Fig. 3 a vertical section, through the revolving axis of my improved machine. Fig. 4 is a plan view of the brush-handle upon which it is desired to bind the bristles by use of my improved apparatus.

Like letters of reference wherever they occur indicate corresponding parts in all the figures. The object of my invention is primarily to produce a simple, cheap, and convenient apparatus for binding the bristles upon a new and peculiar construction of brush, which forms the subject of a separate application for Letters Patent filed herewith; but the improvements are alike applicable for winding other forms of brushes.

The invention involves certain new and useful combinations or arrangements of parts and peculiarities of construction, all of which will be hereinafter first fully described and then pointed out in the claim.

A' is the bed-plate, and A² A² the standards supporting the hollow revolving mandrel B'. C is a crank or handle fixed at one end of the mandrel and serving as a medium through which said mandrel may be revolved at the pleasure of the operator. This crank may obviously be replaced by a pulley of any ordinary form, and the usual appliances for arresting or reversing the motion may be adopted, such as the shifting-belt or the well-known forms of clutches.

Upon the opposite end of the mandrel is the face-plate or disk D, centrally perforated to correspond with the cavity in the mandrel, and carrying the lugs or projections *d d*, cast thereon or otherwise affixed thereto. The rim of disk D is rabbeted, as at E, forming a seat for the toothed band F, made like the rim of

a crown-wheel; and G G are handles attached to the band F for convenience in turning it upon its seat.

The vise for holding the brush consists of two jaws or plates, P P, overlapping each other, and so shaped that when placed in the position shown in the drawings they leave an opening, O, concentric with the opening or cavity in the mandrel and conforming to the size and shape of the brush to be wound. The plates P P are attached to the blocks H H, which slide in suitable grooves formed in the projecting pieces or blocks *d d*, and are moved by the screws *s s* working in them. These screws *s s* turn in fixed bearings at I I, and are keyed to the pinions S S, which gear into the toothed ring or band F. By turning the band F in one direction—say to the left—by means of the handles G G, the plates P P are caused to slide away from each other and increase the size of the opening O. When this is sufficiently large the brush-handle is inserted into the hole in the mandrel at K, the block B, Fig. 4, resting on its end, which is adjusted to allow the peg A to project about one-half an inch beyond the plates P P. The bristles are then inserted in the opening O, around the peg A. The handles G G are then moved back, sliding the toothed band F in the opposite direction—say to the right—which, by revolving the pinions S S and corresponding screws, forces the jaws P P together until the bristles are firmly held between them, when the binding-wire, which has been attached to the pin N, is wound on the brush by turning the handle C, and is finally secured by tying or soldering, or by any known method. String or cord may be used for the binding instead of wire.

In the winding of the bristles, or binding them upon the particular form of handle shown in Fig. 4, after which they are to be protected by a socket or ring, it is important that the plates P P be made thin in order to occupy but little space upon the bristles, and it is also important that these plates be sufficiently removed from the face-plate of the machine to accommodate the block B in the rear of them, which block is secured to the handle of which the pin A is but an extension.

By making the plates thin and overlapping

each other the opening K has a continuous or unbroken wall, without which the bristles could not be properly located upon the peg A.

5 The machine constructed and arranged in accordance with the foregoing description is simple, convenient, and efficient for the purposes intended, and by its use the bristles may be more firmly bound than by the usual hand processes, and the winding accomplished in a
10 more uniform and rapid manner.

Instead of the base shown in the drawings, it is proposed, also, to use one which will at the same time accommodate a screw-press for the purpose of adjusting the ferrules upon the
15 brushes after being wound, thus making the two machines in one; but the screw-press is not herein illustrated, and forms no essential part of the present invention. It is, however, made the subject of a separate application for
20 Letters Patent.

I am fully aware of the existence of many forms of screw-clamps affording an extended

bearing upon the material or object to be held in place, and not applicable to the uses and purposes of my improved machine. To these
25 old forms I desire it understood that I make no claim; but,

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—
30

In a machine for making brushes, the combination of two or more sliding plates or jaws adapted to hold the brush when being tied and a rotating mandrel, the jaws being made of thin metal and forming the complete walls
35 of the brush-opening, all operating substantially in the manner set forth.

In testimony that I claim the foregoing I have hereunto set my hand and affixed my seal in the presence of two witnesses.

CHAS. A. WATKINS. [L. S.]

Witnesses:

THOMAS EDWARDS,
HERBERT REES.