

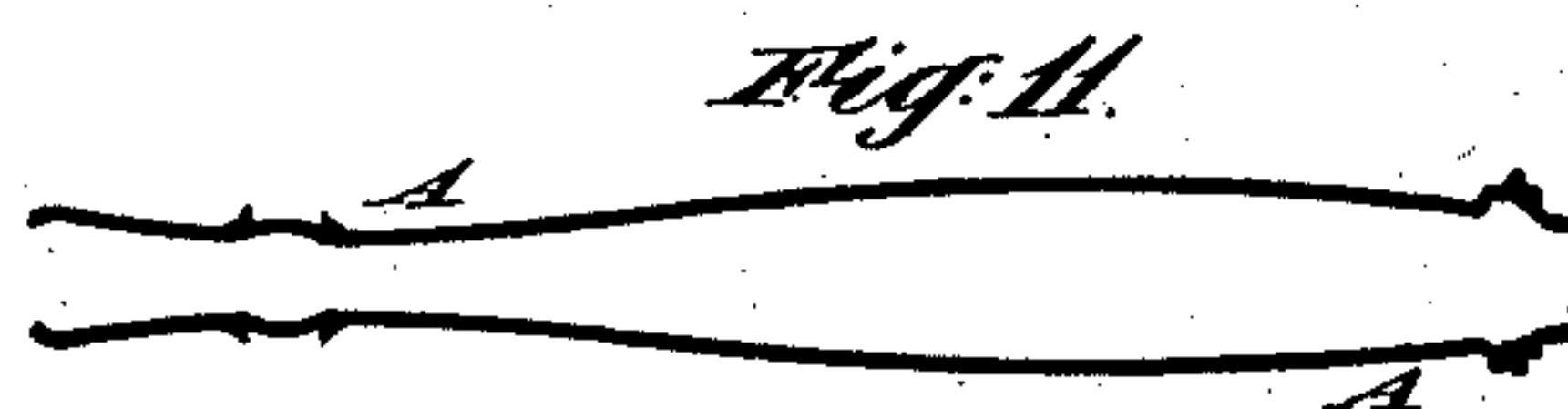
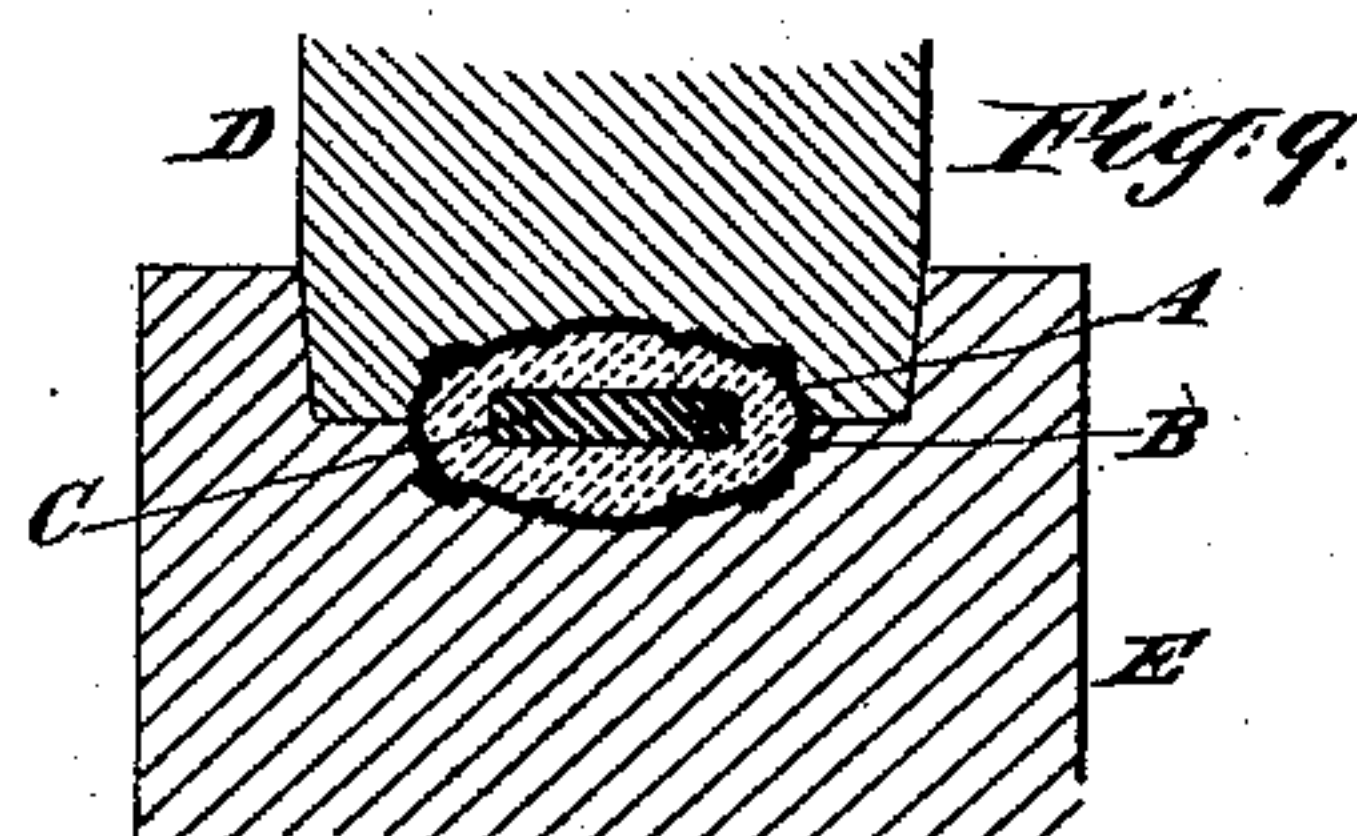
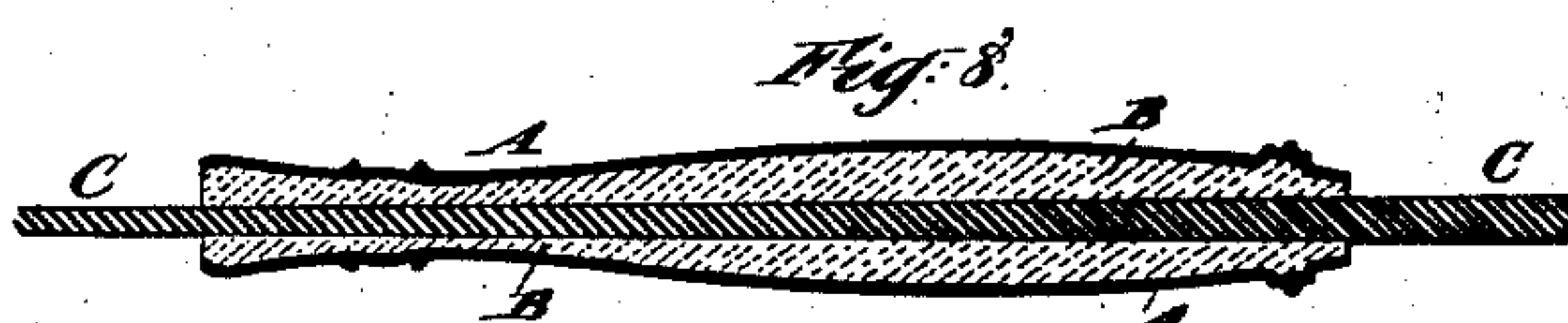
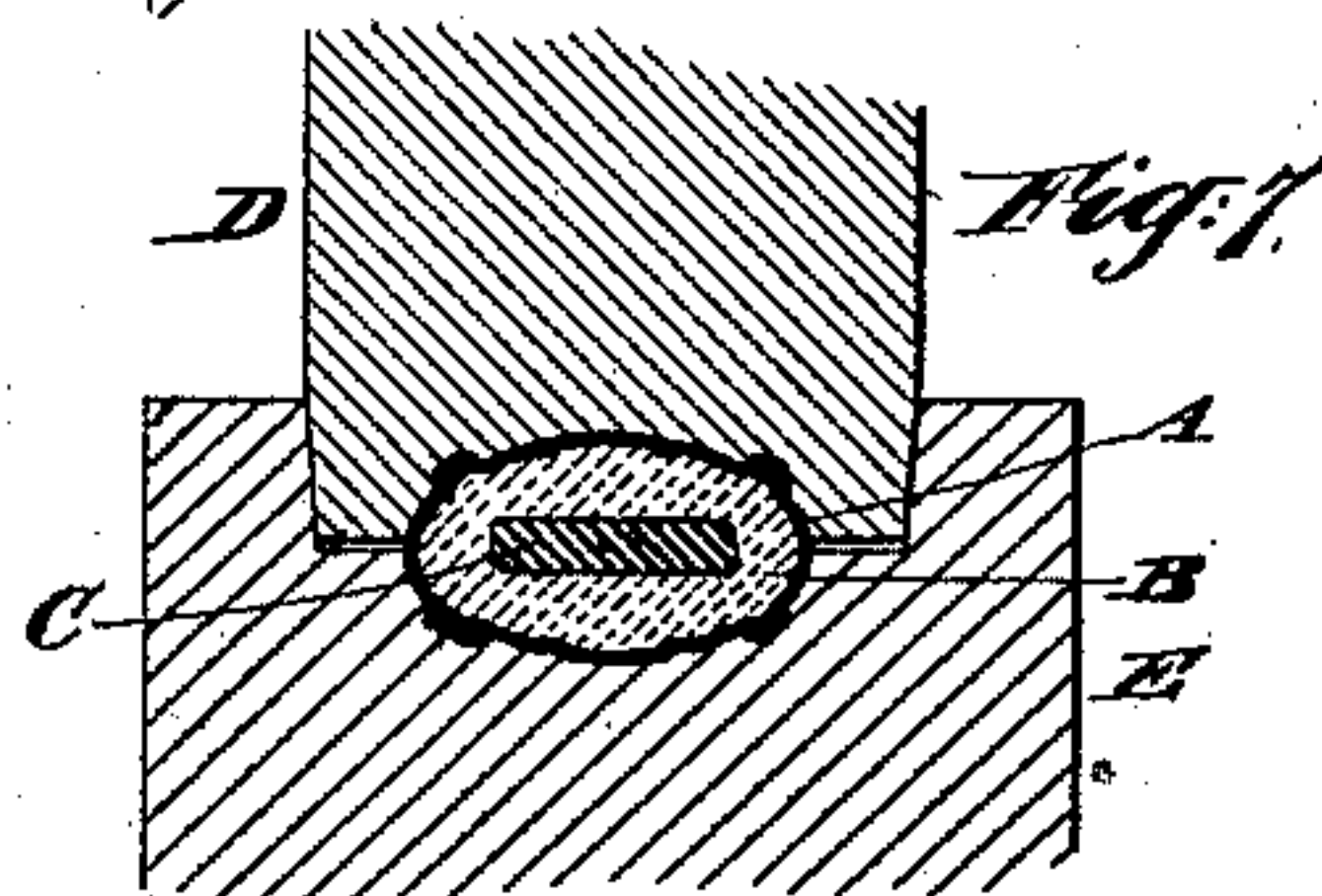
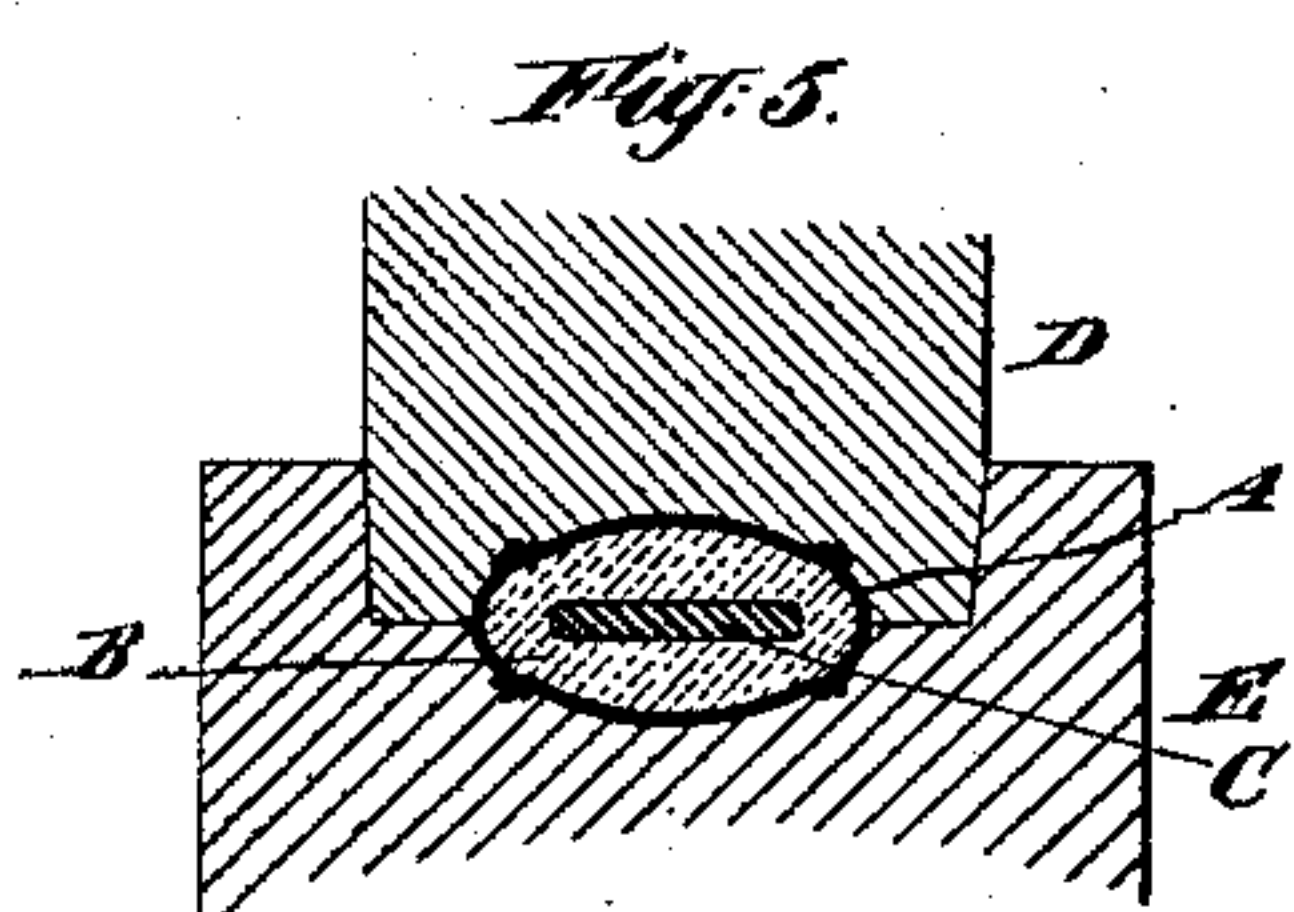
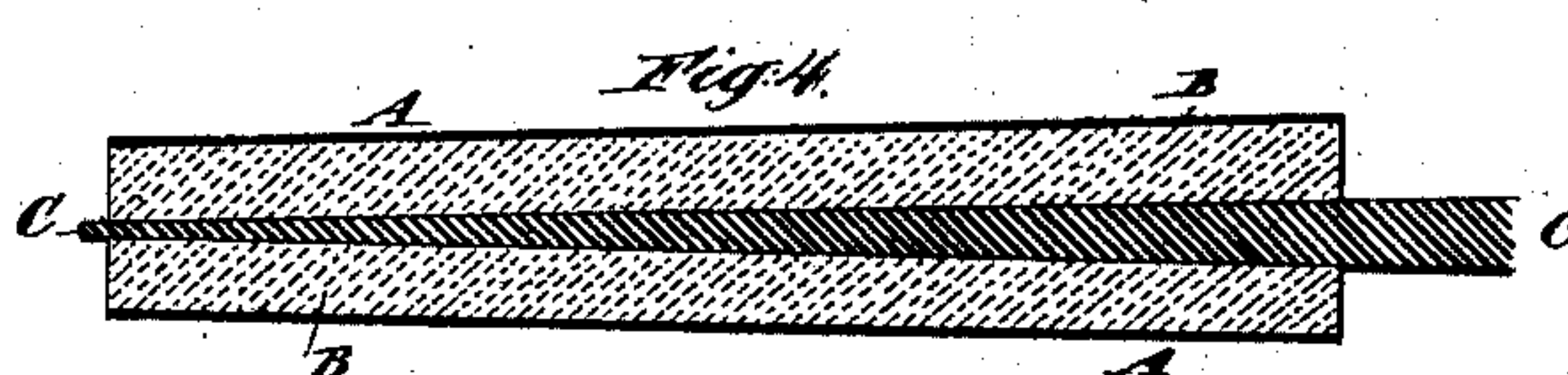
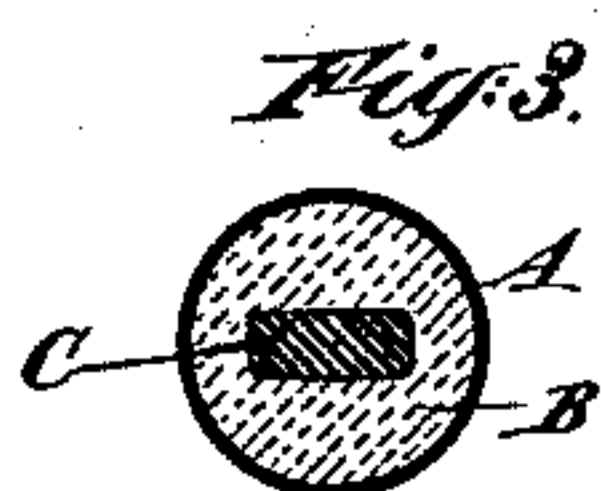
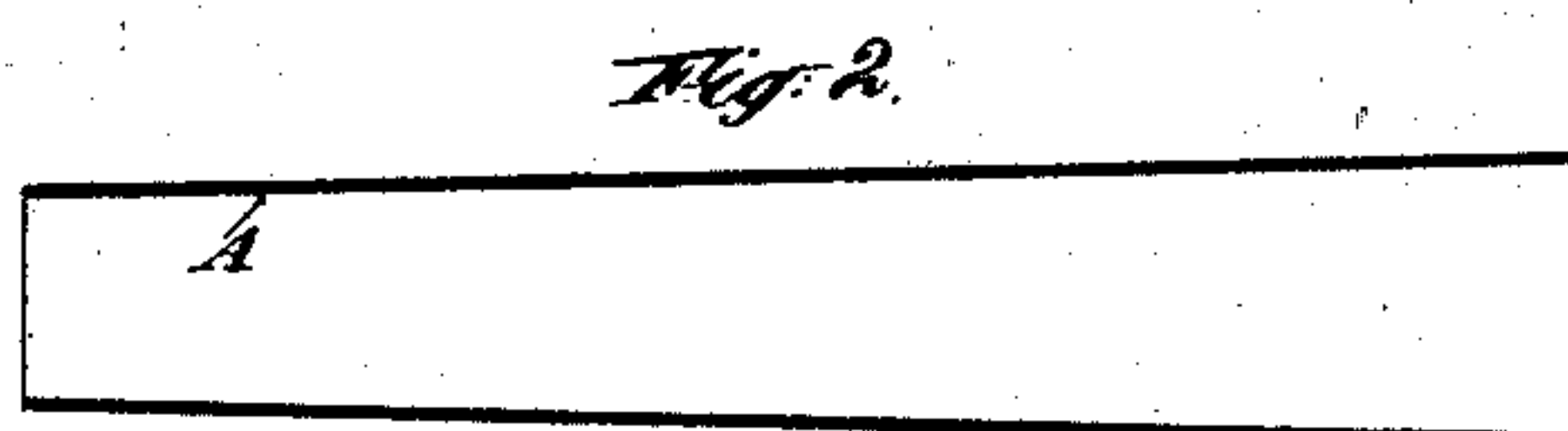
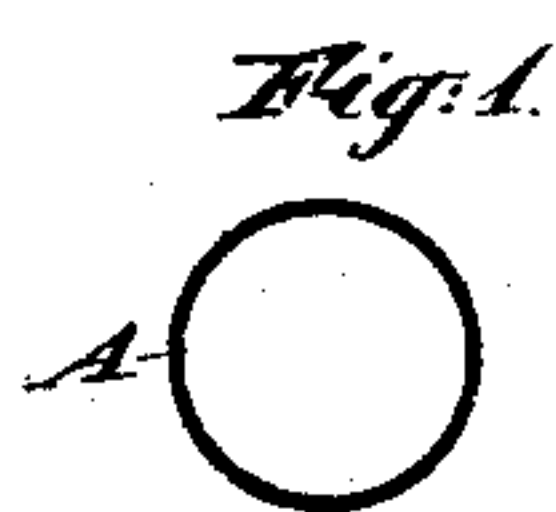
(No Model.)

W. LORENZ.

METHOD OF FORMING HANDLES FOR CUTLERY.

No. 317,393.

Patented May 5, 1885.



Witnesses:
Charles R. Seale.
M. F. Boyle.

Inventor:
Wilhelm Lorenz
by his attorney
Thomas D. Peterson.

UNITED STATES PATENT OFFICE.

WILHELM LORENZ, OF CARLSRUHE, BADEN, GERMANY.

METHOD OF FORMING HANDLES FOR CUTLERY.

SPECIFICATION forming part of Letters Patent No. 317,393, dated May 5, 1885.

Application filed December 21, 1883. (No model.) Patented in Germany April 8, 1883, No. 26,564; in England June 8, 1883, No. 2,853; in Belgium June 16, 1883, No. 61,727; in France August 14, 1883, No. 155,097, and in Austria-Hungary August 22, 1883, No. 4,534.

To all whom it may concern:

Be it known that I, WILHELM LORENZ, of Carlsruhe, in the Grand Duchy of Baden, in the Empire of Germany, have invented certain new and useful Improvements in the Method of Forming Metal Handles for Knives, Forks, &c.; and I do hereby declare that the following is a full and exact description thereof.

The present handles are formed in one piece in the following way: Disks of the required metal—such as brass, alfenide, German silver, christofle, nickel, or the like—are first drawn into tubes, of which the diameters and lengths correspond to the dimensions of the handles to be produced. These tubes may be cylindrical, or, preferably, tapered to conform to the taper of the handles; and annealed, if annealing is necessary. Then they are filled with lead or any other suitable ductile material of a low melting-point, which remains therein and hardens. Thereupon these tubes, with the dense but soft filling material within, are placed between stamping molds or dies having a configuration which corresponds exactly to the exterior form and engraving of the handles to be made, and strongly pressed, receiving by this pressure their shape and ornamentation.

For the more effectual reproduction upon the surface of the handle of all the finely-cut ornamentations on the mold, a tapering plug or wedge is driven through the filling between the mold halves or dies into the interior of the handle, by which the lead or analogous filling material will be strongly compressed from the interior outward. By this means, either at one operation or by again compressing the dies, the metal of the handle is forced into even the finest engravings of the molds. The handles thus stamped are then in a suitable furnace subjected to a sufficiently high temperature for the filling material to melt and run out. The handles are then ready for receiving the blades, polishing, burnishing, &c. In stamping handles made of a soft metal—as block-tin, britannia, queen's metal, pewter, &c.—the filling may be of resin, wax, or the like. In producing handles of a very complicated configuration they may be pre-

pared for their ultimate shape by pressing them beforehand on divided molding pieces or dies having an approximate shape, by which operation the last pressing, and therewith the obtaining of the exact shape and ornamentation, will be facilitated. The blades may be introduced and secured therein in any convenient way.

The accompanying drawings represent what I consider the best means of carrying out the invention.

Figure 1 is a cross-section, and Fig. 2 a longitudinal section, showing the tube or shell before it is filled. Fig. 3 is a cross-section, and Fig. 4 is a longitudinal section, showing the tube with a tapering core of steel driven into the filling. Fig. 5 is a cross-section of a handle after a steel wedge has been inserted in the tapering cavity and the mass strongly compressed between dies. Fig. 6 is a longitudinal section of the same. Fig. 7 is a cross-section showing the dies moved a little distance apart and the wedge farther driven in. Fig. 8 is a corresponding longitudinal section. Fig. 9 is a section showing the dies again powerfully compressed, to complete the impression of the dies by acting a second time on the handle after it has been expanded by the driving in of the wedge. Fig. 10 is a corresponding section. Fig. 11 is a longitudinal section showing the handles after the soft filling and wedge have been removed. Fig. 12 shows the handle with the shank of a blade soldered in place ready for use.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is the tube or shell, of brass or other sufficiently-yielding metal to allow of being drawn and stamped, as described. B is the filling, of lead or other material adapted to yield easily to allow change of form and yet to offer a reliable internal pressure to force up the material of the shell A, to assume the exact form of the interior of the dies. C is a taper wedge, of steel or the like, slightly smoked or otherwise prepared to avoid adhesion of the metal B. D is the upper die, and E the lower die. M, Fig. 12, is the blade and shank.

I claim as my invention—

The described method of forming ornamented handles for cutlery, consisting in filling properly-drawn tapering tubes with melted
5 lead or other material fusible at a low temperature, then subjecting the tubes to pressure between proper dies to partially give the desired impression, then driving a wedge into the filling while in the dies, and then subject-
10 ing to heat to remove the filling, as set forth.

In testimony whereof I have hereunto set my hand, at Berlin, this 24th day of August, 1883, in the presence of two subscribing witnesses.

WILHELM LORENZ.

Witnesses:

B. ROE,

C. GRONERT.