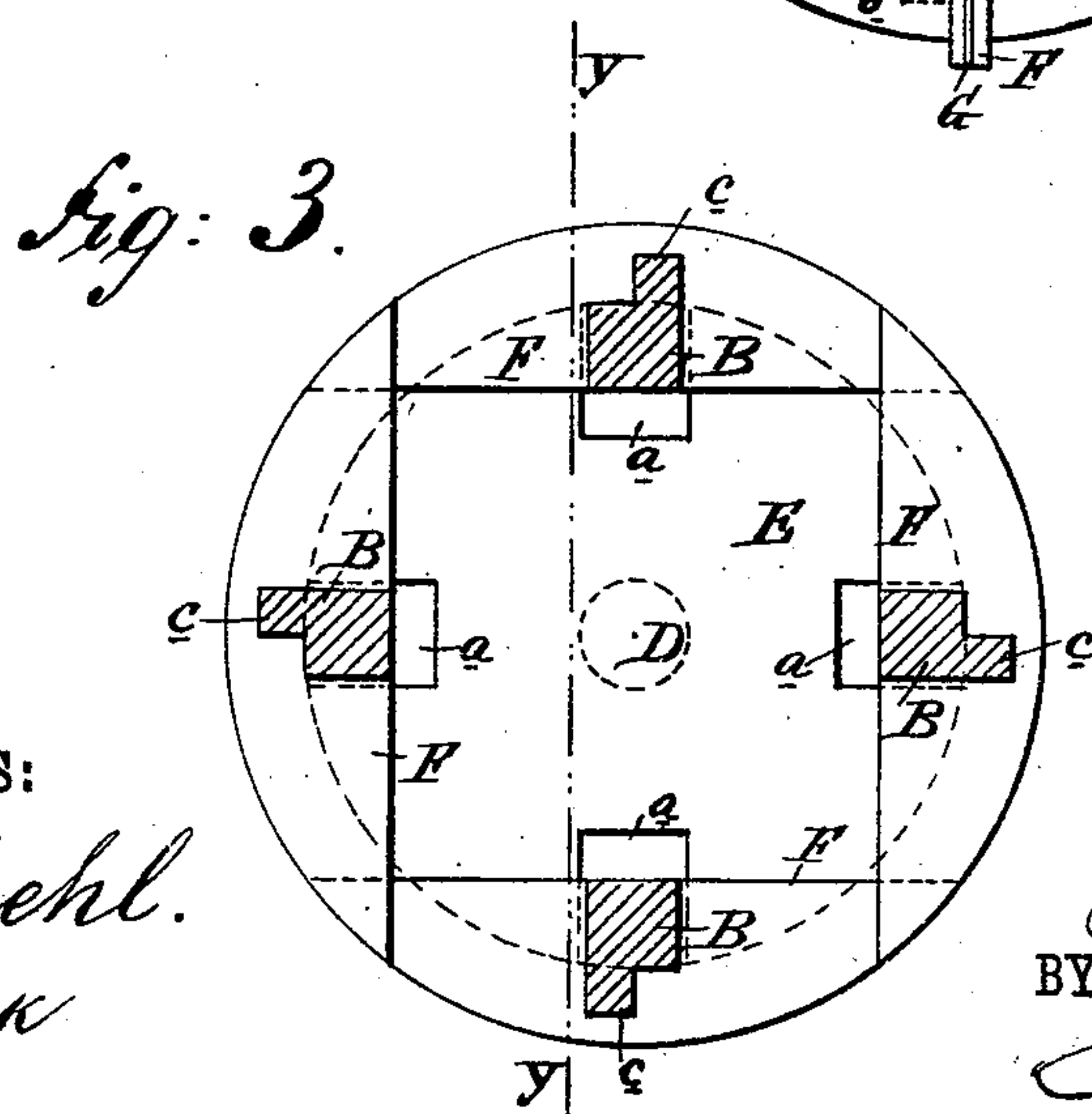
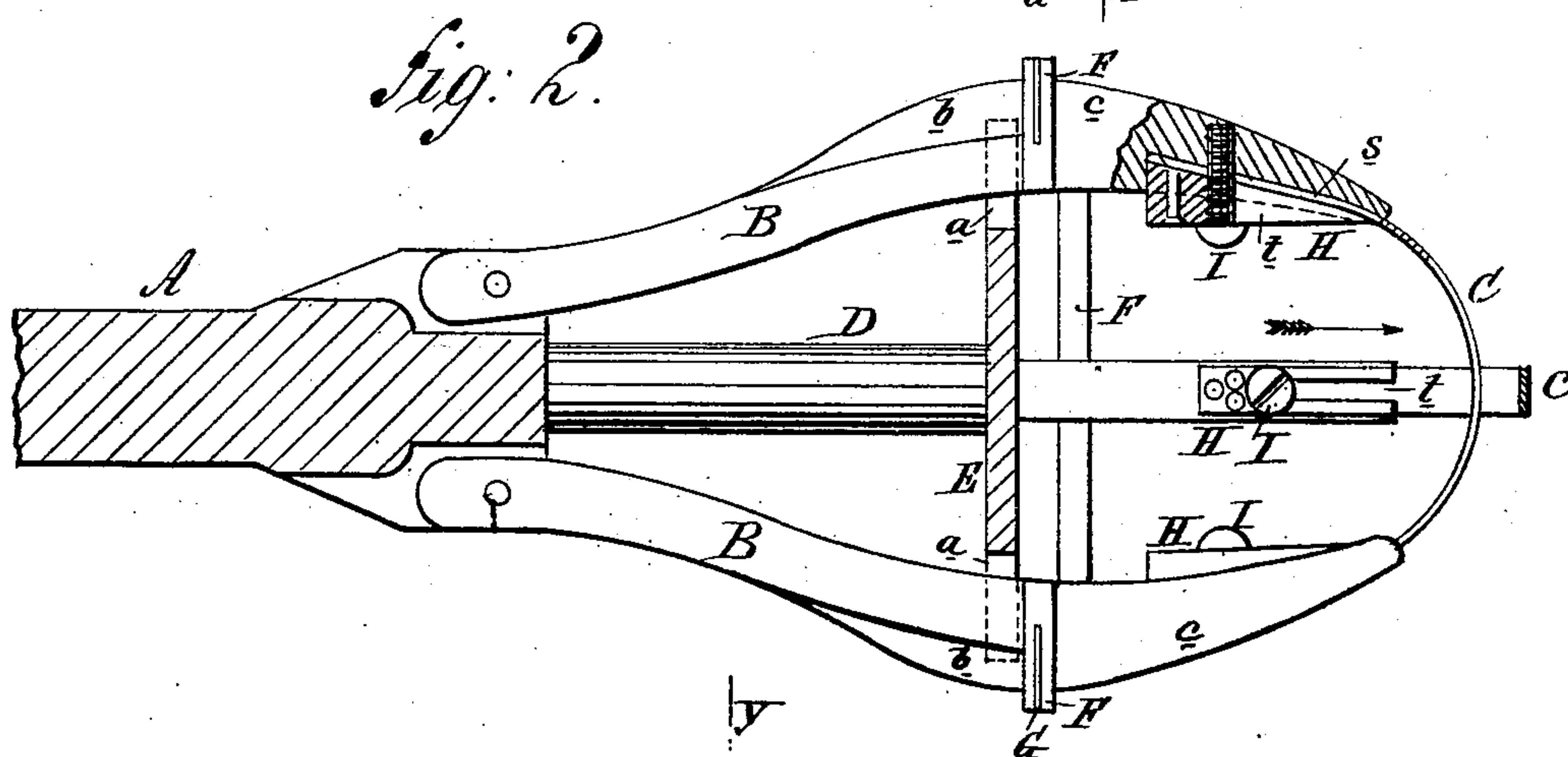
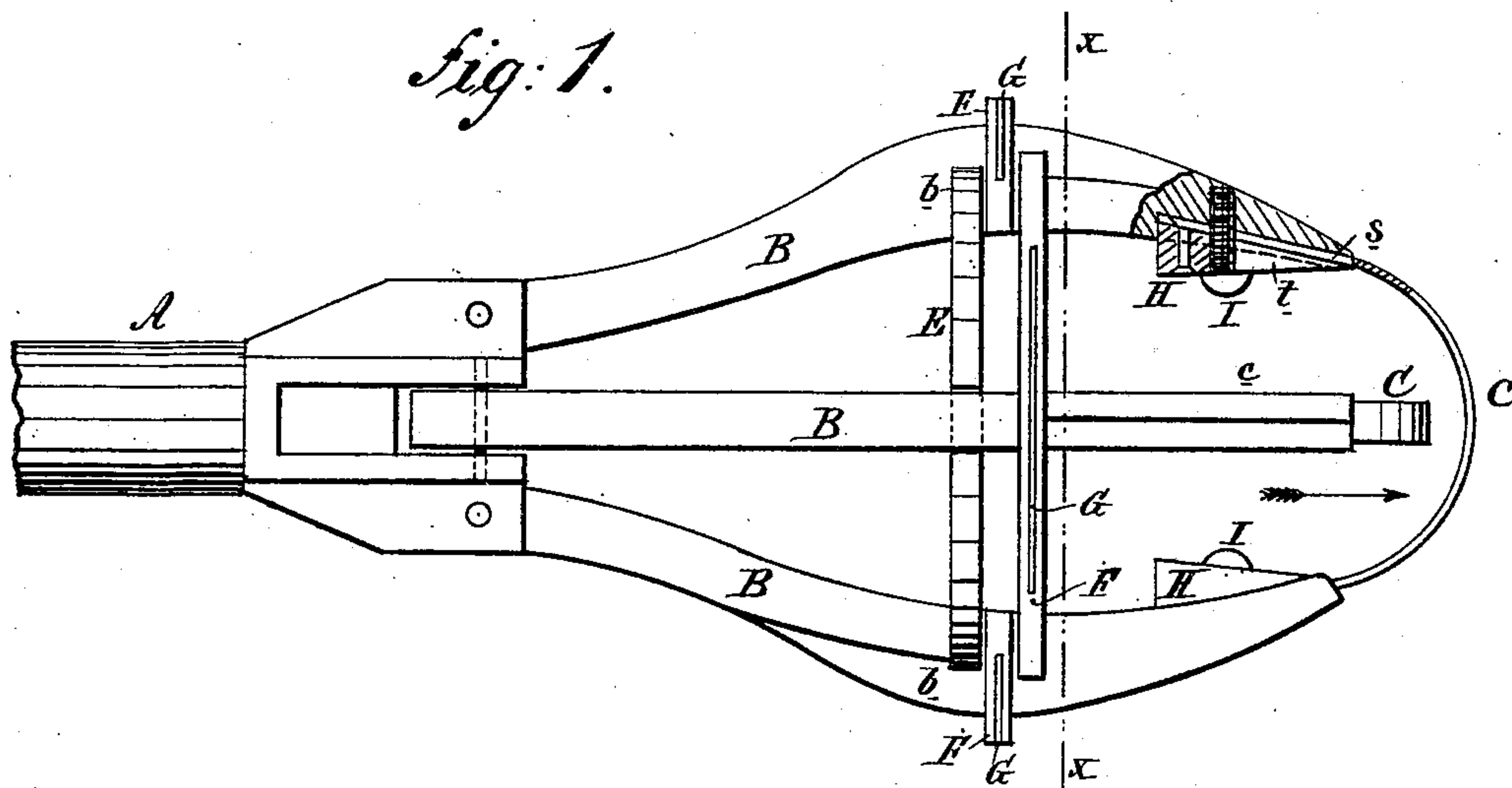


(Model.)

J. L. KELLEY.
Boiler Flue Scraper.

No. 243,574.

Patented June 28, 1881.



WITNESSES:

A. Schehl.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN L. KELLEY, OF ERIE, PENNSYLVANIA.

BOILER-FLUE SCRAPER.

SPECIFICATION forming part of Letters Patent No. 243,574, dated June 28, 1881.

Application filed April 23, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOHN L. KELLEY, of Erie, in the county of Erie and State of Pennsylvania, have invented a new and Improved Boiler-Flue Scraper, of which the following is a full, clear, and exact description.

The object of this invention is to construct a simple, durable, and more effective device for scraping and removing soot, &c., from boiler-flues.

Figure 1 is a longitudinal elevation of the scraper with parts broken away to exhibit other parts. Fig. 2 is a longitudinal sectional elevation of the same on line *y y*, Fig. 3, with parts broken away to exhibit other parts. Fig. 3 is a cross-section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a handle, to which are pivoted at opposite points the arms B B, that are curved outward at about midway of their lengths, and are connected at their opposite ends, in pairs, by the bent crossed springs C C, having wedges H riveted or otherwise fixed on their ends, that serve also to force said arms B B apart, and thereby adjust the scraper to flues of any diameter. A spindle, D, projecting from the handle A in the line of its axis, extends centrally between the arms B B to about midway of their length, and has secured upon its end at right angles thereto a disk, E, provided with peripheral mortises *a*, in which the arms B B are entered, and thereby firmly held against torsional strain when the scraper is rotated in a flue. These arms B B are, on their outer convex faces, provided with flanges or ribs *b c*, the flanges *b* extending from near the pivoted ends of said arms B, and on one edge of the said arms B to the upper face of the disk E, while the flanges or ribs *c* extend downward on the opposite edges of said arms B, from near their points to within a short distance of the disk E, and serve as guides, on entering the flues, for the arms B and scraping-plates F. These ribs *b c* conform with the curve of the arms B, deepening as they approach the disk E.

F F represent the segmental scraping-plates that are formed upon the arms B B at right angles thereto, between the opposite ends of

the ribs *b c*, that serve to give them additional strength and rigidity. The convex outer edges of these plates F together form a circle that is designed to fit the boiler-flues. In the outer edges of these plates F are cast in corresponding sockets steel wearing-plates G, that are designed to take the wear of the scraper as it is used.

It is intended that the arms B and plates F shall be of cast or malleable iron, and that arm and plate shall be in one piece, and that the wearing-plates G shall be of steel, so that the durability of the scraper may be increased. The inner and concave faces of the arms B are mortised or channeled near their extremities, as shown at *s*, and in these mortises *s* are held wedges H, that are rigidly fixed on the ends of the springs C by set-screws I, which are entered through the slots *t* of the said wedges H into the arms B. The said mortises *s* prevent the lateral movement of the wedges H.

When it is desired to set out the plates F G the set-screws I are loosened, and the springs C, with their wedges H, are drawn outward in the direction of the arrow, Fig. 1, whereby the wedges H, moving on the inclined surface of the mortises *s* on the inner faces of the arms B, force said arms B B apart, to compensate for the wear on the said plates G, or to set them out for a larger flue. When the arms B are suitably adjusted the set-screws I are turned again to hold the springs and wedges C H in place. The scraper, being introduced into a boiler-flue, is moved back and forth with a rotary motion, whereby the soot, &c., is scraped off by the arms B and plates F G, while the disk E serves, in combination with the plates F, to push or pull the loosened soot, &c., from the said flue.

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

1. In a boiler-flue cleaner, the arms B, hinged at the rear end to handle A, and connected at the front end by a spring, C, as and for the purpose described.

2. In a boiler-flue cleaner, the combination, with the arms B, having ribs *b c*, of the scraping-plates F, formed on said arms and between said ribs, as and for the purpose set forth.

3. The combination, with the arms B, carry-
ing scrapers, of the disk E, arranged on the
end of a central spindle, D, between said arms,
and having peripheral mortises *a*, whereby
5 said disk prevents torsional strain upon the
arms, and also serves to push or pull the loos-
ened soot from the flue, as described.

4. In a boiler-flue scraper, the combination,

with the segmental scraping-plates F, of the
wearing-plates G, substantially as herein shown 10
and described, whereby the durability of the
scraper is increased, as set forth.

JOHN L. KELLEY.

Witnesses:

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