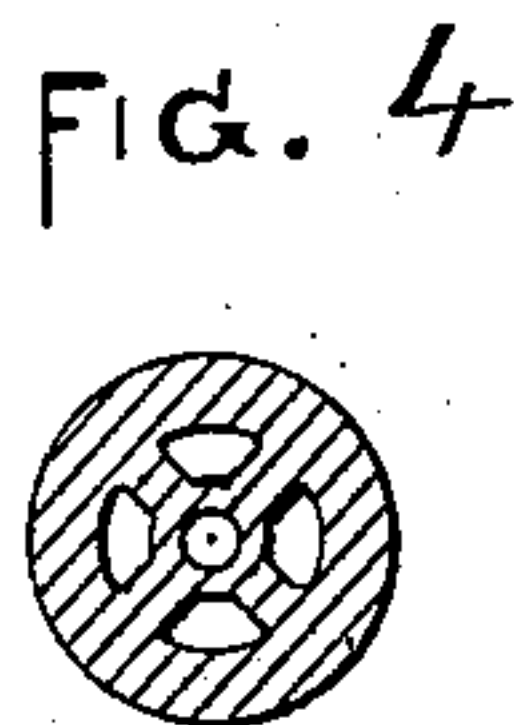
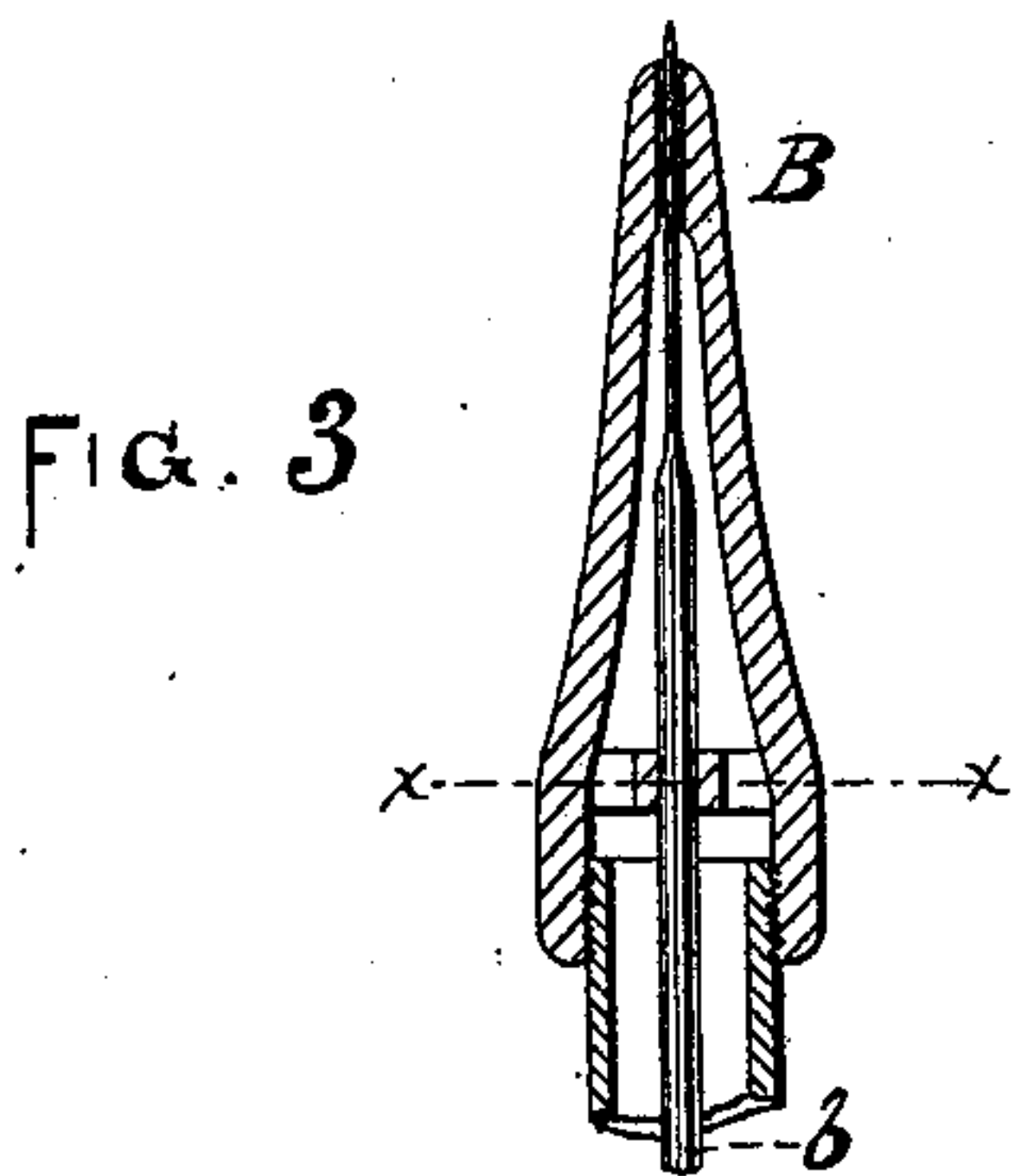
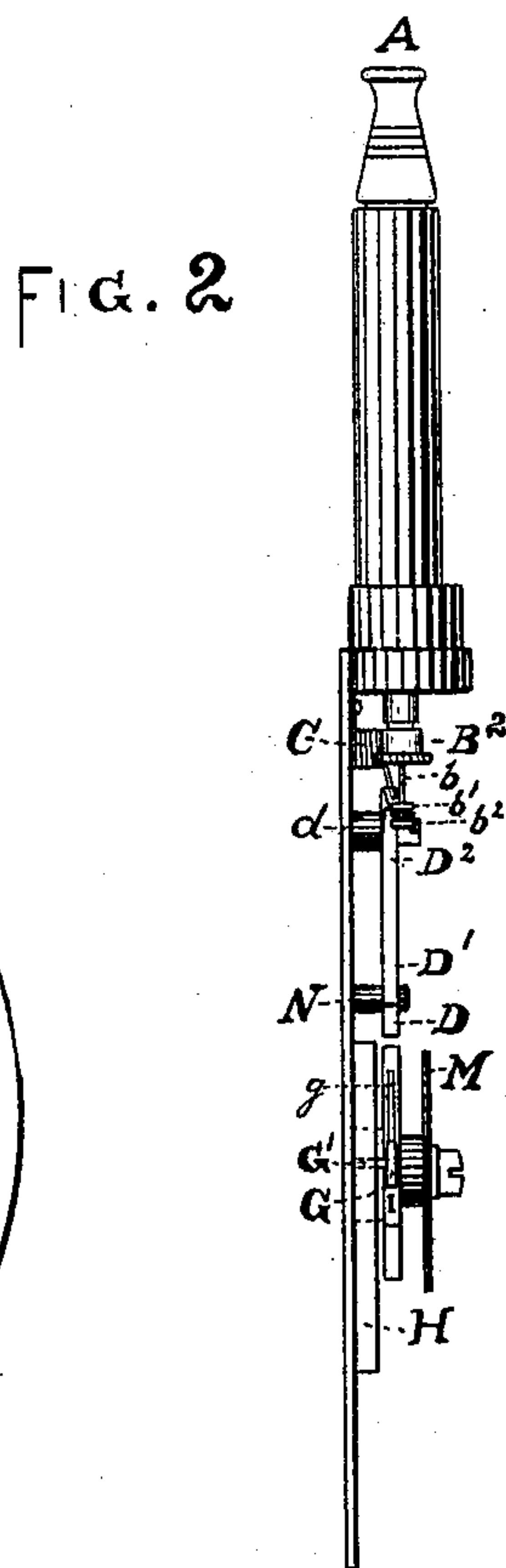
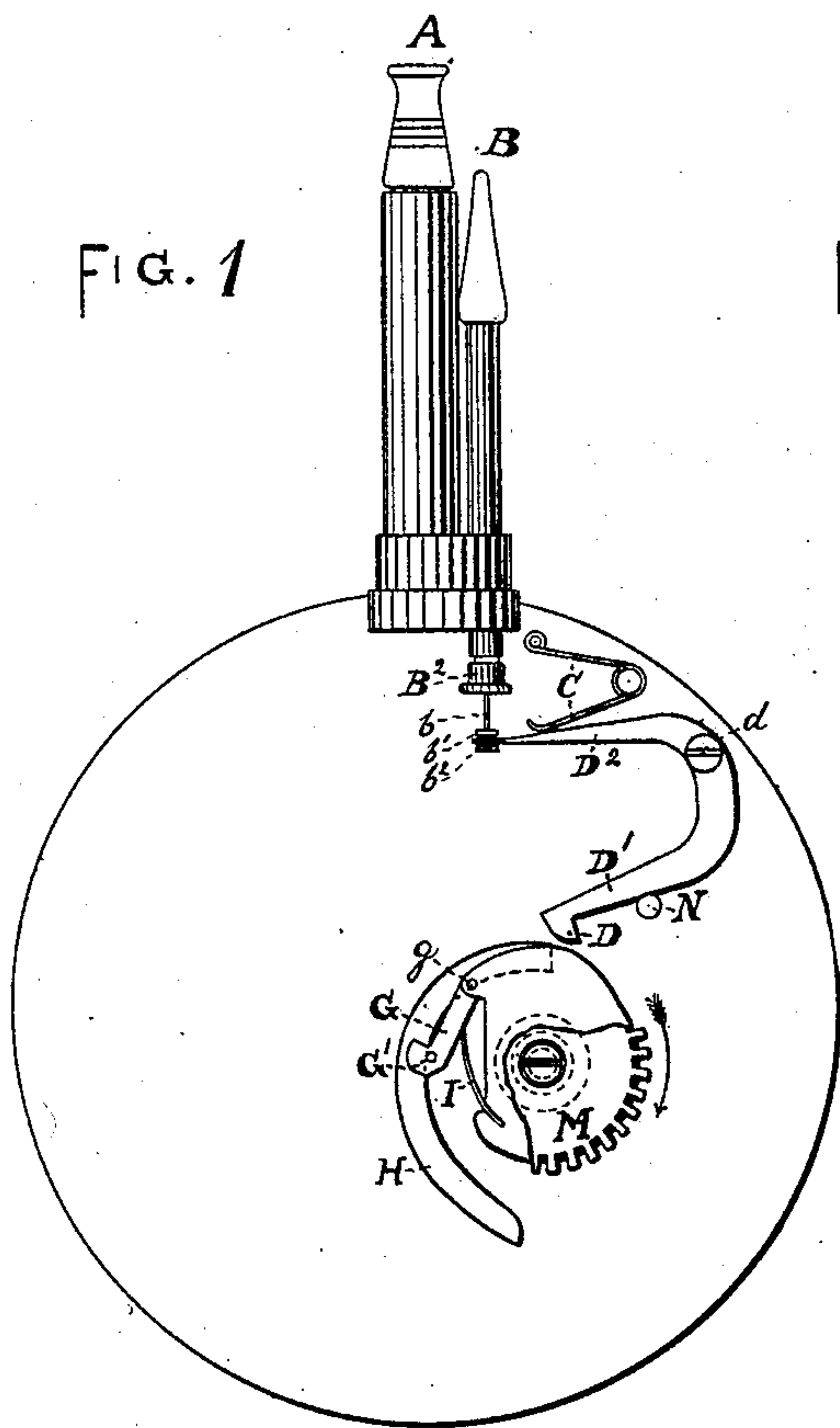


G. P. GANSTER.
Gas-Burner.

No. 211,504.

Patented Jan. 21, 1879.



— WITNESSES: —

W. C. Brookes

Otto Müller

— INVENTOR: —

Geo P. Ganster
by his attorney
Thomas S. Stetson

UNITED STATES PATENT OFFICE.

GEORGE P. GANSTER, OF READING, PENNSYLVANIA.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **211,504**, dated January 21, 1879; application filed August 27, 1878.

To all whom it may concern:

Be it known that I, GEORGE P. GANSTER, of Reading, county of Berks, in the State of Pennsylvania, have invented certain new and useful Improvements relating to Gas-Burners, of which the following is a specification:

The object of my invention is to keep a small burner from clogging.

It has many years been practiced in various situations that a small jet of gas has been kept constantly burning closely under a large jet, which latter is let on at intervals when required to give light. In such case the small flame is insignificant as a light-giver, and consumes only an insignificant quantity of gas. It is important only as a lighter, constantly ready to instantly ignite the large jet as soon as it is turned on. Such a device could be used in many situations with great economy if it were practicable to use a sufficiently small flame. A very small flame is liable to extinguishment from two sources: first, currents of air, and, second, a liability of the very small orifice to become clogged by tarry or other deposits, or by a corrosion of the material of the burner.

I wish to employ such a jet in connection with devices for turning on and off the main jet automatically, and have given much time and attention to the perfection of the details. I have in a patent dated August 20, 1872, No. 130,632, described a shield which greatly lessens the liability of a small flame to be blown out. I have now discovered and practically applied means for avoiding the other evil. I have devised an automatic clearer in the form of a slender wire or probe, adapted to be thrust up from below, and to reopen the small orifice to its full extent at regular intervals. I work the probe or clearer by the same mechanism which shuts off and lets on the gas.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a face view, and Fig. 2 an edge view. Fig. 3 is a section through a portion on a larger scale. Fig. 4 is a cross-section on the line *x x* in Fig. 3.

Similar letters of reference indicate like parts in all the figures.

A is the main burner, equipped with provisions (not represented) for supplying a strong flow of gas to furnish light during the hours required. B is a small burner, placed in such relation thereto that a small jet from the burner B will be under, and in position to ignite, the strong current of gas when it is let on. The small burner B is supplied with gas continuously through a small pipe. M is a wheel connected with the clock-work, (not represented,) and making one complete revolution in twenty-four hours. It revolves in the direction indicated by the arrow. The lower end of the burner-tube B is equipped with a stuffing-box, B², which forms a tight joint around the wire or probe *b*. This wire is moved endwise by a crooked lever, D¹ D², turning on a center, *d*, and taking hold of the wire *b* by means of the forked end of the arm D², which engages between two knobs or nuts, *b*¹ *b*², on the wire *b*. The other arm, D¹, of the lever is formed with an offset near its end, constituting a head, D, as shown, and rests against a fixed stop, N. The lever D¹ D² is pressed against the stop N by the force of a spring, C. The wheel M carries an arm, G, hinged to the wheel at the point *g*, and having a beveled head at its outer end. The wheel M is partially inclosed by a hand-course or curving piece, H, which stands in such position and is so curved that at each revolution of the wheel M it engages with a side arm, G', carried on the lever G, and compels the latter to move inward toward the center of the wheel against the force of the spring I, which drives it outward. Care is taken to so form and arrange these parts that a sharp and strong outward motion of the spring-lever G occurs at the moment that its arm G' passes the end of the piece H. This motion causes it to touch and pass the head D with a quick strong motion, and compel a corresponding quick movement of the lever D¹ D², and consequently of the wire *b*. The wire *b* is moved upward sufficiently to protrude its upper end through the small orifice of the burner B. It is instantly returned by the force of the spring C. This movement of the wire *b* occurs at in-

tervals of twenty-four hours. I find the movement is so rapid that it will not extinguish the small flow of gas; but as a safeguard I so time the action that it shall occur while a strong jet of gas is burning from the main burner A, so as to be again ignited.

Fig. 3 shows, on a larger scale, the means which I have provided for efficiently guiding the probe *b*. It moves through a hole which is only a little bigger than itself, while ample holes are provided alongside to allow an unobstructed flow of the gas.

I prefer that the wire *b* is stouter below than is necessary at the point where it passes through the orifice. The main length of the wire may be No. 24, while the small part, which is pushed up through the orifice to keep it clear, may be No. 80.

Many modifications may be made in the details by any good mechanic. The peculiar form of the lever $D^1 D^2$ is not essential.

I claim as my invention—

1. The clearing-probe *b*, having an endwise movement in the small burner B, in combination with suitable operating mechanism, and with the main burner A, as and for the purposes herein specified.

2. The clearer or probe *b*, automatically moved at intervals, as specified, in combination with a gas-burner, B, having a small orifice adapted to maintain a continuous flame for the ignition of gas in a larger burner, as and for the purposes herein specified.

3. In combination with the probe *b* and suitable connections to a withdrawing-spring, C, the quick-moving piece G, actuated as specified, and adapted to communicate its blow to the probe *b* and induce a quick reciprocation, as herein specified.

4. The wheel M, arm G, and operating-spring I, in combination with the probe *b* and its spring C, and actuating-lever $D^1 D^2$, adapted for operation in connection with the burners B A and a suitable motive power, as herein specified.

In testimony whereof I have hereunto set my hand this 21st day of August, 1878, in the presence of two subscribing witnesses.

GEO. P. GANSTER.

Witnesses:

J. G. KALBACH,
W. COLBORNE BROOKS.