

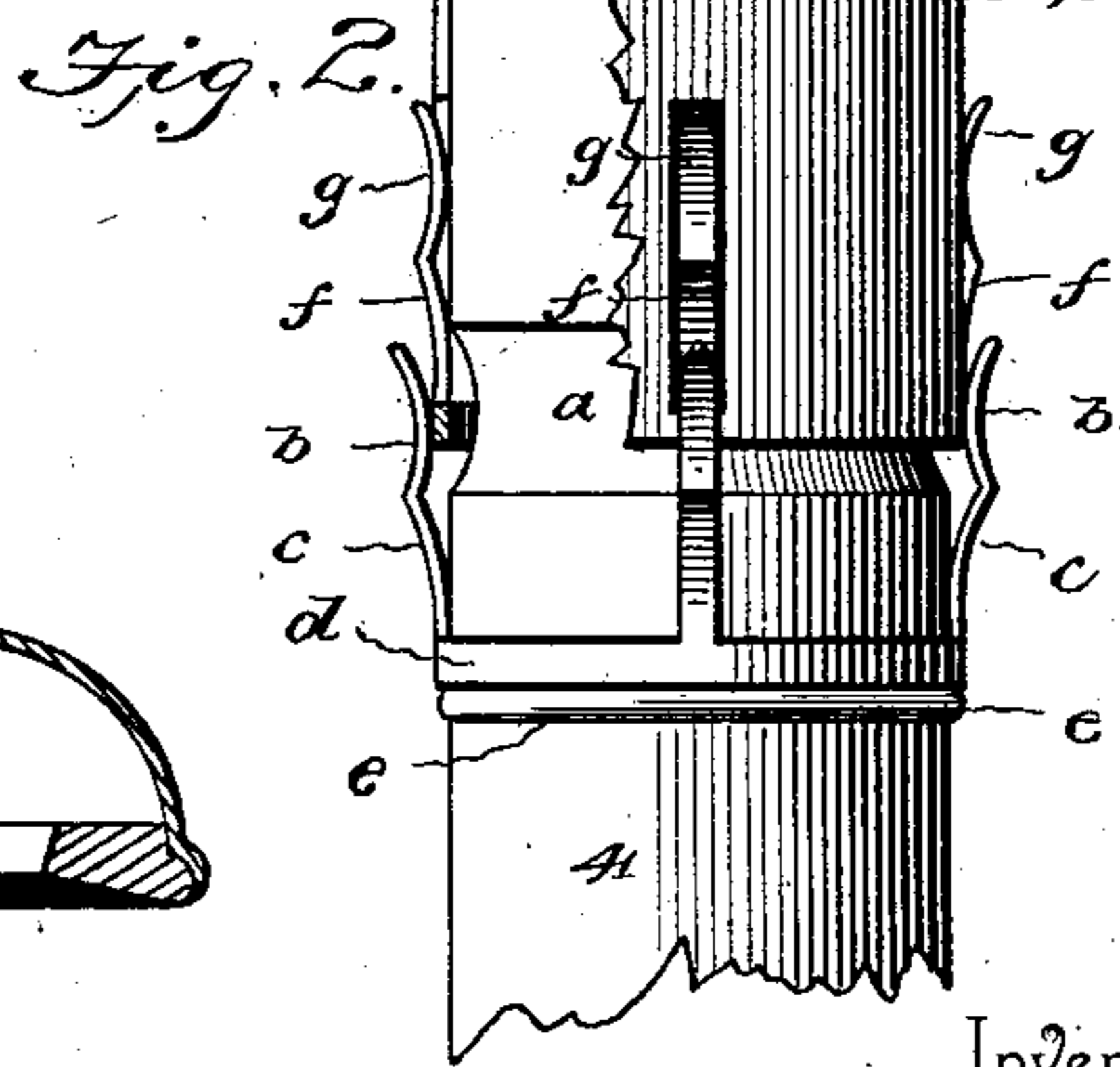
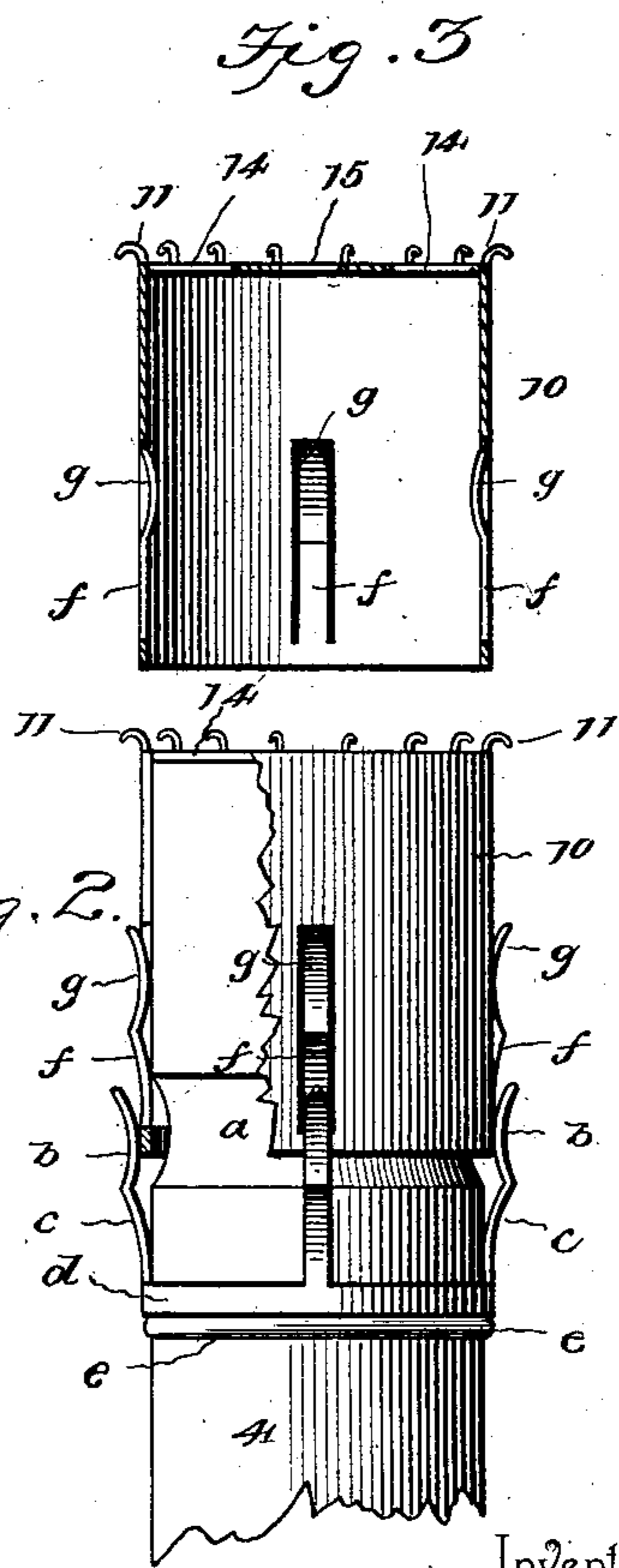
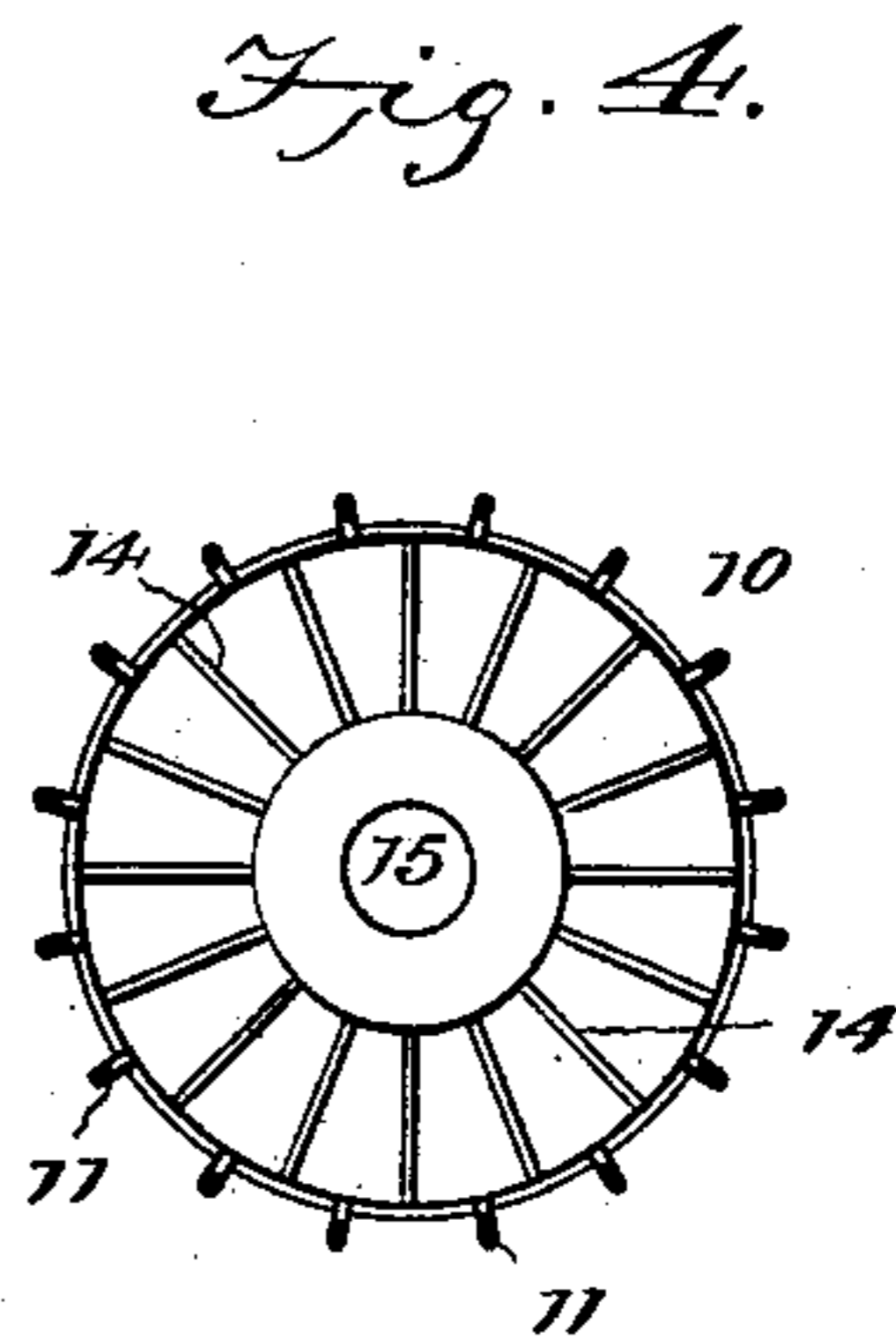
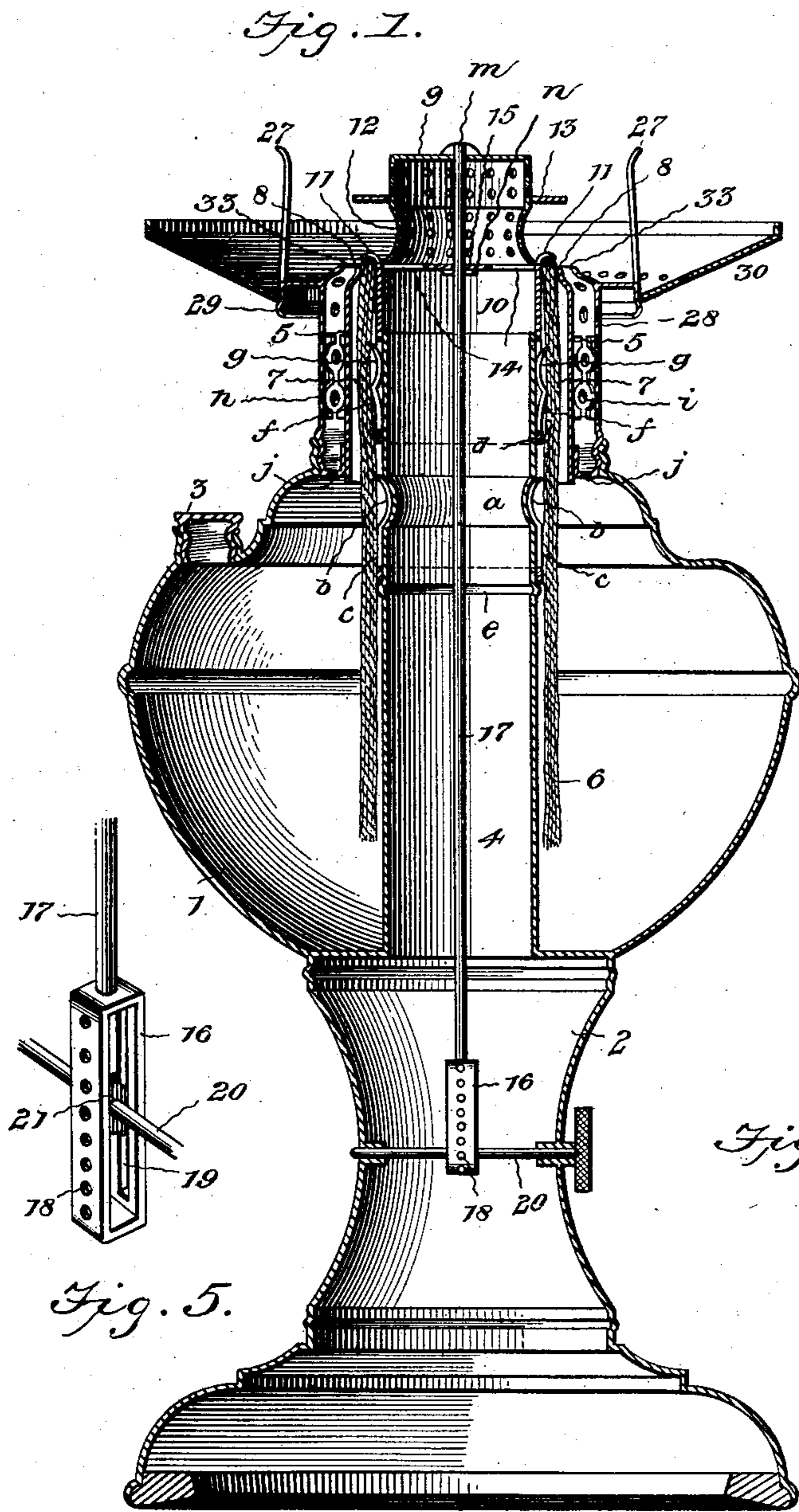
No. 608,284.

Patented Aug. 2, 1898.

J. GREGORY.  
LAMP BURNER.

(Application filed May 29, 1897.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOSEPH GREGORY, OF NEW YORK, N. Y.

## LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 608,284, dated August 2, 1898.

Application filed May 29, 1897. Serial No. 638,752. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH GREGORY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Lamp-Burner, of which the following is a specification.

A general complaint against the use of lamps and heaters using oil and a wick is the escape into a room of unconsumed carbon and noxious odors and gases, especially when the flame is turned low and at the instant of extinguishing the light. These objections also apply upon turning the wick too high, as in this event the supply of oil is greater than can be consumed by the limited current of air. Another objectionable feature met with is the frequent requirement of snuffing and trimming the wick to keep it in good condition and the adjustment thereof to allow for consumption and trimming.

By this invention the foregoing enumerated objections and others are obviated, a soft white light attained, the burner rendered practically inodorous, a nearly perfect combustion secured, the wick kept cool and the air fed to the flame heated in its passage thereto and enriched with gaseous vapor, the wick controlled in its movements and prevented from overfeeding and trimming not rendered necessary, and the general construction simplified, whereby a better and clearer light results and the oil is consumed more economically.

Other objects and advantages are contemplated and will appear and suggest themselves as the invention in its details is fully comprehended. Hence to this and such other ends as pertain to the nature of the invention the latter consists of the novel features, details, and combination of parts, which hereinafter will be more fully set forth, illustrated, and finally embodied in the claims hereto appended.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical central section of a lamp having the improvements in operative relation. Fig. 2 is a detail view in elevation, parts being broken away, of the inner wick-casing and lower section of the spreader and wick-lifter. Fig. 3 is a vertical central section of the lower section of the spreader and wick-lifter. Fig. 4 is a top plan view of the part shown in Fig. 3. Fig. 5 is a detail view in perspective of the wick adjusting or elevating and lowering mechanism, and which also serves to limit the upward movement of the wick.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference characters.

While the invention is shown applied to a lamp, it is to be understood that it is to be used in connection with lamp-stoves for heating purposes and in other situations where oil is the primary agent for producing light or heat and is fed to the point of combustion by means of a wick.

The lamp body or fount 1 is mounted upon a stand 2 in the usual manner and may be of any pattern and is supplied with a burner having a central air-draft. The opening in the top portion of the lamp-body to one side of the burner for filling is closed by a cap 3 in the ordinary manner.

The wick-tube comprises an inner casing 4, which passes through the lamp-body, and an outer casing 5, the upper end of the inner casing terminating a short distance from the upper end of the outer casing to give ample clearance for the movement of the spreader and wick-lifter and having a hollow or annular depression *a* a short distance from its upper end to receive the curved ends *b* of spring-arresters *c*, attached to a band *d*, mounted upon the inner casing 4 and held in place by a bead *e*. The wick-space between the inner and outer casings is larger than the thickness of the wick 6, whereby a space 7 is provided between the outer casing and the wick for the passage of the air, whereby the wick is kept cool. The outer casing is contracted at its upper end at 8 to engage with the wick 6 and retain it in place, the contracted portion extending over and closing the space 7

and serving to direct the air to the end of the wick.

The spreader 9 is formed with or has applied thereto a wick-lifter 10, the latter embracing the upper portion of the inner casing 4 and forming a continuation thereof. The lower portion of the spreader is contracted or made hollow, as shown at 12, to secure the best results in the distribution of the air to the flame, and this spreader above the hollow or contracted portion 12 has an extinguisher 13. The wick-lifter has hooks 11 at its upper end, radial bars 14, and a ring 15, the latter and the bars 14 extending horizontally and the hooks 11 projecting vertically and having their bent ends extending outwardly to engage with the top edge of the wick 6 to cause the latter to descend when lowering the spreader and lifter. Teeth *f* are provided at the sides of the wick-lifter and have their upper ends *g* curved inward to extend across the path of the extremity of the wick-casing 4 to ride thereon and be projected outward into the space occupied by the wick, so as to engage with the latter and elevate it upon moving the spreader and wick-lifter upward. These teeth are integral with the wick-lifter and are formed by cutting portions therefrom and operate in the slots resulting from providing the teeth. The spreader rests upon the outer ends of the bars 14 and is held in place by the hooks 11. The lower end of the wick-lifter is adapted to wedge between the casing 4 and the wick-arresting teeth *c* and is limited in its downward movement thereby.

The upward movement of the wick-lifter and spreader is limited by means of a loop 16, applied to the lower end of a rod 17, which is connected at its upper end with the spreader in any convenient way and secures the spreader and wick-lifter together. One side of the loop 16 has a series of openings 18, and the other side is formed with a vertical slot 19, and the wick-raising shaft 20 has its pinion 21 operating in the slot 19 and the teeth of the pinion cooperating with the openings 18, so that upon turning the shaft 20 the rod 17 and the parts connected therewith are correspondingly moved up or down, according to the direction of turning the shaft. The lower end of the loop 16 is so constructed and proportioned as to engage with the shaft 20, thereby limiting the upward movement of the wick-lifter in the manner set forth through the connections between it and the wick-controlling mechanism. After the wick 6 has once been properly adjusted upon the wick-lifter, so as not to smoke when raised to the limit of its upward movement, it can never be raised too high and is limited in its upward movement by the loop 16 engaging with the shaft 20 in the manner set forth.

The chimney-holders 27 are secured to the gallery 28 in the ordinary manner, and this gallery has an outer flange or bead 29, which

forms a support for a reflector 30, which is an annulus and may be of glass backed in the usual manner, whereby a reflecting-surface is attained, or may be of highly-polished metal, and this reflector may extend horizontally or in any direction desired, so as to secure the objects in view, and may form a holder for the shade.

The upper portion of the shell *h* of the gallery is contracted and terminates about on a level with the outer casing 5 and forms therewith a narrow space 33, whereby the air is directed upon the flame close to the upper end of the wick. The sides of the spreader are perforated from the top to the plane of the ends of the parts 5 and *h*, and inasmuch as the relation of the spreader and wick remains fixed the air entering the inner casing is directed toward the edge of the wick, whether the flame is high or low, thereby preserving an uninterrupted supply of air to a perfect combustion, which is essential to prevent the burner from throwing off carbon or noxious vapors. The casing 5 and shell *h* inclose a space *i*, and the connecting portion *j* is perforate, and the sides of the shell *h* have openings for the entrance of air, which enters the fount and, with the air coming in through the cap 3, passes into the space 7, formed between the wick and the outer casing 5, and rising in said space cools the wick, and at the same time is heated and becomes impregnated with gaseous vapor, and discharging upon the flame promotes and increases the combustion and materially assists in producing the soft white light peculiar to a burner constructed in accordance with this invention. When it is required to extinguish the light, the spreader is lowered and carries with it the wick-lifter and wick, and when the extinguisher rests upon or engages with the upper end of the outer casing 5 the gases and vapors confined in the space closed by the extinguisher are condensed by the cool air entering through the body of the lamp and passing to said space through the annular passage 7, whereby no odor, carbon, or vapor is given off. The inner and outer drafts have been found sufficient in practice to carry off the ashes resulting from a consumption of the wick, thereby rendering trimming thereof unnecessary, and the ascending current of air through the space 7 keeps the wick sufficiently cool to prevent its charring to the extent common in lamp-burners as generally constructed, thereby resulting in prolonging the usefulness of the wick. As the wick is consumed it is automatically fed by reason of the limited movement of the wick-lifter. Upon lowering the spreader the hooks, teeth, or spurs 11 engage with the top edge of the wick and cause it to descend. When the lower edge of the wick-lifter engages with the teeth *b*, they are thrown outward and engage with the wick and arrest its further descent. The teeth *f* move in-

ward when the top edge of the casing 4 is cleared and are forced outward when riding upon the casing 4.

The combined wick-lifter and spreader is formed of two parts which are connected together by the rod 17, the latter having lateral wings *m* at its upper end and a shoulder or stop *n* a short distance from the said upper end, the wings *m* extending over the top of the spreader and the stop *n* engaging with the lower side of the part 15, projecting across the space of the wick-lifter.

A spreader and wick-lifter formed of separable parts and connected to move together and operate in the wick-space, an operating-rod for the wick-lifter and spreader having a loop, a shaft having a pinion to cooperate with the said loop, and a wick-lifter having teeth to automatically release and engage with the wick are features set forth and claimed in an application for a like invention filed by me December 11, 1896, Serial No. 615,342, and formally allowed May 7, 1897.

Having thus described the invention, what is claimed as new is—

1. In a lamp-burner, the combination of an inner and an outer casing forming between them a wick-space, the inner casing terminating below the outer casing, and a spreader and wick-lifter working together, the wick-lifter operating in the wick-space and the spreader having its sides perforated to the line of separation between the spreader and wick-lifter to supply an equal amount of air to the burning end of the wick at all adjusted positions, substantially as set forth.

2. In a lamp-burner, the combination of an inner and an outer casing inclosing a wick-space, the upper end of the inner casing terminating a distance below the plane of the upper end of the outer casing, and a spreader and wick-lifter moving together, the wick-lifter operating in the wick-space and embracing the inner casing and forming a continuation thereof and the spreader being perforated from its upper end down to the end of the wick, substantially as set forth for the purpose described.

3. In a lamp-burner, the combination of an inner and an outer casing forming a wick-space, the inner casing having its upper end terminating a distance from the plane of the upper end of the outer casing, and the casings being of such relative proportions as to provide a passage between the outer casing and the wick, and a spreader and wick-lifter constructed to move together, the wick-lifter

operating in the wick-space and forming a continuation of the inner casing, substantially as set forth for the purpose described.

4. In a lamp-burner, the combination with a wick-tube, and means for raising and lowering the wick, of an arrester normally held out of engagement with the wick and constructed to engage therewith and limit its downward movement when lowered to a predetermined point, substantially as set forth.

5. In a central-draft burner, the combination of a wick-lifter provided at its upper edge with vertically-disposed hooks having deflected ends extending outwardly across the wick-space to engage with the wick, a spreader having its lower end fitting within the space inclosed by the said hooks, and means for holding the spreader and wick-lifter together, substantially as set forth.

6. In a central-draft burner, the combination of the wick-tube having its inner casing terminating below the upper end of the outer casing, a wick-lifter slidably mounted upon the inner casing within the wick-space and having its upper end forming a continuation thereof, and having portions cut from its lower portion, forming teeth, and having the upper parts of the teeth curving inwardly and adapted to be projected by engaging with the inner casing of the wick-tube, and means for raising and lowering the wick-lifter, substantially as set forth.

7. In a central-draft burner, the combination with the wick-tube, and a wick-lifter operating in the wick-space, of an arrester located in the wick-space and having teeth curving at their upper ends and normally held out of the path of the wick, and caused to engage with the latter by the wick-lifter coming in contact with the curved ends of the said teeth, substantially as set forth.

8. In a central-draft burner, the combination with the wick-tube having an annular depression, and a wick-lifter operating in the wick-space, of a wick-arrester having spring-teeth formed with curved ends normally resting within the annular depression and projected by contact therewith of the wick-lifter, substantially in the manner set forth for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH GREGORY.

Witnesses:

FRANK SHORT,  
MARGARET F. WUNDER.