127,765

PATENT SPECIFICATION

Application Date, Aug. 3, 1918. No. 12,688/18.
Complete Left, Feb. 3, 1919.
Complete Accepted, June 12, 1919.

PROVISIONAL SPECIFICATION.

An Improved Gas-lighter.

We, FRANK WILLIAM GUNTON, of 16, Rosefield Road, Staines, in the County of Middlesex, Mechanical Engineer, and MAURICE SHEARER, of 809, Old Kent Road, in the County of Kent, Model Maker, do hereby declare the nature of this invention to be as follows:—

The invention consists of an improved construction of pyrophoric lighter for igniting ordinary gas burners and the burners of gas cookers, gas stoves, gas fires, and incandescent gas lamps and lanterns.

The main feature of the improved lighter is that the serrated wheel of the lighter is secured to a spindle which is rotated through the action of a coiled spring, adapted to be wound up from time to time, and that this spindle is released, so as to allow it to be rotated through parts of a revolution, by means of a trigger.

The improved lighter may be constructed as follows:

The lighter comprises a tube and a barrel, forming the handle of the lighter, which is closed at its front end and is fixed to the rear end of said tube. A rod is placed in said tube and on the front end of this rod is screwed the serrated wheel of the lighter, formed on its lower face with radially disposed serrations or teeth. A shaft of greater diameter than said rod and terminating in a stud is fixed to the rear end of said rod and is housed in the barrel or handle of the lighter. A boss formed with a suitable number of radially projecting pins, say three pins, is secured to the rear end of said rod immediately in front of said shaft. A closely wound coiled spring is secured at one of its ends to said shaft and is attached at its other end to a plug. This plug, which closes the outer end of the barrel or handle of the lighter, is loosely mounted on the stud provided on the rear end of said shaft, and is formed with milled teeth so that it can be readily rotated for the purpose of winding up the coiled spring. The plug is further provided with a clutch consisting of a suitable length of coiled wire of the necessary diameter secured at its rear end to the plug. The barrel or handle of the lighter is provided at its front end with a slot and at the sides of said slot with lugs. A spring-controlled trigger formed on its front end with a nose having staggered projections is mounted in said lugs. Said nose projects through the slot formed in the barrel or handle of the lighter and co-operates with the radially projecting pins on the boss located at the front of the shaft housed in said handle. The piece of ceric iron or pyrophoric material is contained in a supplementary tube secured to one side of the tube forming the front part of the lighter, and is constantly pressed against the lower

[*Price* 6*d.*]

face of the serrated wheel by means of a spiral spring housed in said supplementary tube. The necessary degree of compression is imparted to said spring by means of a rod located in the rear of the tube and secured in position in the tube by any suitable means, such as a suitably formed sleeve rotatably mounted on the tube forming the front part of the lighter.

The improved lighter is used as follows:—

The plug closing the outer end of the barrel or handle of the lighter is rotated so as to wind up the coiled spring secured to said plug and the shaft housed in said handle. If a burner has to be lighted the lighter is held with the serrated wheel over the burner, and the trigger mounted on the outside of the handle of the lighter is depressed and released. This will cause the spindle carrying the serrated wheel of the lighter to be rotated through, say, a third of a revolution, and a spark to be produced.

If desired, the teeth on the serrated wheel of the lighter may be formed on the periphery of the wheel, in which case the above referred to supplementary tube would be dispensed with, the piece of ceric iron or pyrophoric material being housed in a tube arranged at one side of the serrated wheel.

Dated the 3rd day of August, 1918.

C. F. ENNIS,
Registered Patent Agent,
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For the Applicants.

COMPLETE SPECIFICATION.

An Improved Gas-lighter.

We, FRANK WILLIAM GUNTON, of 16, Rosefield Road, Staines, in the County of Middlesex, Mechanical Engineer, and MAURICE SHEARER, of 809, Old Kent Road, in the County of Kent, Model Maker, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:

The invention relates to pyrophoric lighters for igniting ordinary gas burners and the burners of gas cookers, gas stoves, gas fires and incandescent gas lamps and lanterns, and consists of an improved construction of gas-lighter of the kind in which the serrated wheel of the lighter is secured to a spindle which is rotated through the medium of a coiled spring, adapted to be wound up from time to time, and is released, so as to allow it to be rotated through part of a revolution, by means of a spring-controlled trigger.

The accompanying drawings illustrate two lighters constructed in accordance with the invention.

Fig. 1 is a side view and Fig. 2 is a longitudinal section of one construction of the improved lighter. Figs. 3 and 4 are side and front views, drawn to an enlarged scale, of the trigger used in this construction of lighter. Fig. 5 is a plan of the serrated wheel of the lighter, looking on its lower or serrated face. Fig. 6 is a longitudinal section of a slightly modified construction of lighter. Figs. 7 and 8 are a side view and a plan, drawn to an enlarged scale, of the escapement wheel used in the modified construction of lighter.

Referring first to Figs. 1 to 5, 1 is a tube and 2 is a barrel, forming the handle of the lighter, which is closed at its front end and is fixed to the rear end of the tube 1. 3 is a rod housed in the tube 1 and passing through the handle 2. 4 is the serrated wheel of the lighter, screwed on the upper end of

the rod 3 and preferably formed, as shown most clearly in Fig. 5, with radially disposed serrations or teeth. 5 is a boss which is secured to the front end of the part of the rod 3 located in the handle 2 and is provided with a suitable number of radially projecting pins 6, say three pins. 7 is a plug, closing the outer end of the handle, which is loosely mounted on the outer end of the rod 3, and is secured in position by means of a nut 8 or the like. 9 is a tube interposed between the boss or wheel 5 and the plug 7. 10 is a closely wound coiled spring surrounding the tube 8 and secured at its ends to the boss or wheel 5 and the plug 7. 11 is a one-way clutch consisting of a suitable length of coiled wire secured to the plug 7 and made of such diameter that it will bear against and frictionally grip the interior of the handle 2. 12 is a slot formed in the front part of the handle 2, and 13 is a spring-controlled trigger, which is mounted in lugs 14 located at the sides of the slot and is provided with a nose 15. The nose 15 of the trigger 13 projects through the slot 12 and is formed with two staggered lugs 16 adapted to co-operate with the pins 6 fixed to the boss or wheel 5. 17 is a piece of ceric iron or other pyrophoric material which is contained in a supplementary tube 18 secured to the tube 1 and is constantly pressed against the lower surface of the serrated wheel 4 by means of a spiral spring 19 housed in the tube 18. The spring 19 is retained in the tube 18 and the necessary degree of compression imparted to the spring by any suitable device, such as by means of a length of stout wire 20 which bears at its front end against the rear end of the spring 19 and is supported at its rear end in a pocket 21 secured to the tube 1. The wire 20 is provided with a horn or projecting part 22, so that it may be readily removed from and replaced in the position shown in Figs. 1 and 2. The horn or projection 22 may be formed by doubling the lower part of the wire 20 and bending outwards the end of said doubled part, or by bending the wire to the shape shown in the modified construction of lighter.

The improved lighter is used as follows:—

The plug closing the outer end of the handle 2 is rotated so as to wind up the coiled spring 10. If a burner has to be ignited the lighter is held with the serrated wheel 4 over the burner, and the trigger 13 is depressed and released. This will cause the rod or spindle 3 to be rotated through, say, a third of a revolution, and a spark to be produced.

The modified construction of lighter illustrated by Figs. 6 to 8 is substantially the same as that shown in the other figures. In this case however the nose of the spring-controlled trrigger 13 is formed with a single lug 16, which takes the form of a pin, and the boss or wheel 5 is formed with two sets of teeth or projections 6 arranged in staggered relation to one another. Further the plug 7 at the rear end of the handle 2 is secured to a cap 23 which snugly fits the rear end of the handle 2, while the spring 19, instead of bearing against the rear end of the piece of ceric iron or the like 17, presses against the end of a length of stout wire 20 interposed between said spring and piece of pyrophoric material and provided intermediate between its ends with a projecting part 22 to enable it to be drawn and held back when the lighter has to be provided with a fresh piece of pyrophoric material.

The lighter when required to be used for igniting burners placed in an elevated position may be secured to the end of a rod or pole of the necessary length. In this case the lighter may be constructed in the manner illustrated by Fig. 6, that is to say the plug closing the outer end of the handle of the lighter may be fixed to a cap and the lighter be secured to the rod or pole by a sleeve formed with an inwardly projecting lip adapted to take over the flange of the cap.

If desired, the teeth on the periphery of the serrated wheel of the lighter may be formed on the periphery of the wheel, in which case the above referred to supplementary tube would be dispensed with, the piece of ceric iron or pyrophoric material being housed in a tube arranged at one side of the serrated wheel. A supplementary tube disposed parallel to the tube containing the

spindle of the lighter is however preferable as with this arrangement the front part of the lighter is of small dimensions and a long piece of ceric iron can be used.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. A pyrophoric gas-lighter of the kind herein referred to in which the spring-actuated spindle carrying the serrated wheel of the lighter is released, so as to allow of its rotation through part of a revolution, by means of a wheel secured to said spindle and a spring-controlled trigger co-operating with said wheel, substantially as described.

2. A pyrophoric gas-lighter according to Claim 1 in which the wheel secured to the spring-actuated spindle of the lighter consists of a boss provided with a row of pins and the nose of the spring-controlled trigger is formed with two lugs arranged in staggered relation to one another, substantially as described.

3. A pyrophoric gas-lighter according to Claim 1 in which the wheel secured to the spring-actuated spindle of the lighter consists of a boss provided with two sets of teeth arranged in staggered relationship to one another and the nose of the spring-controlled trigger is formed with a single lug or pin, substantially as described.

4. A pyrophoric gas-lighter according to Claims 1 to 3, in which the spring for rotating the spindle of the lighter is secured at its ends to said wheel and to a plug closing the outer end of the handle of the lighter or to a plug carried by a cap rotatably mounted on the outer end of the handle of the lighter, substantially as described.

5. A pyrophoric gas-lighter according to Claim 4, in which the spring actuating the spindle carrying the serrated wheel of the lighter is retained as it is wound up by means of a coil of wire which is secured to the plug closing the outer end of the handle of the lighter or to the plug carried by the cap closing the outer end of the handle of the lighter and is made of a diameter corresponding to the interior of said handle, substantially as described.

6. Pyrophoric gas-lighters constructed substantially as described herein and illustrated by the accompanying drawings.

Dated this 3rd day of February, 1919.

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For the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1919.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

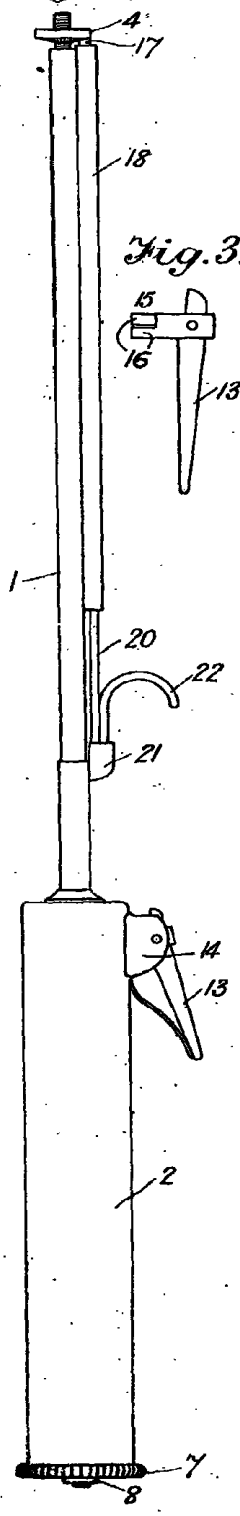


Fig. 2.

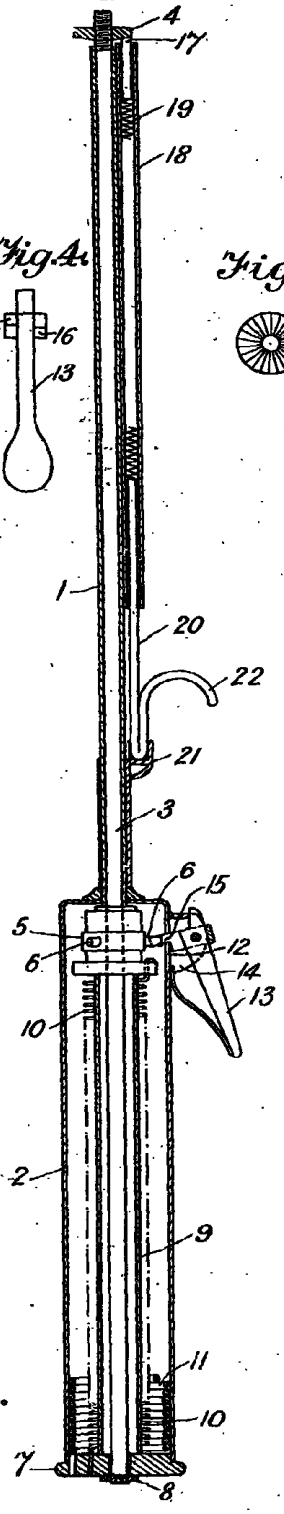


Fig. 6.

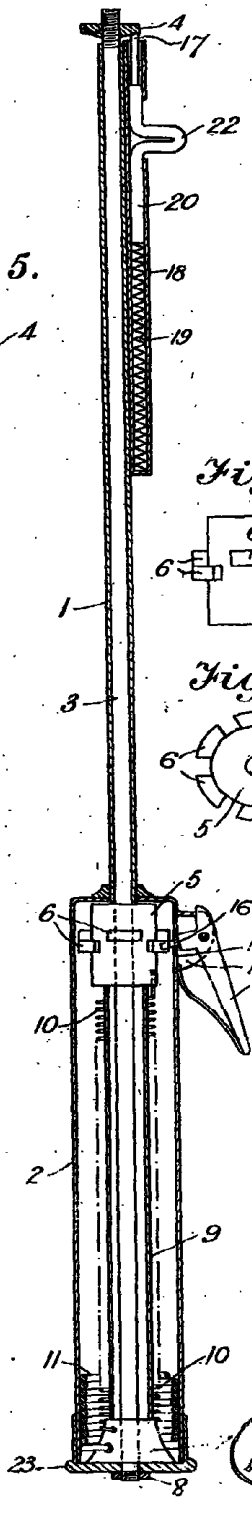


Fig. 3.

Fig. 4.

Fig. 5.

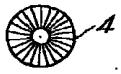


Fig. 7.

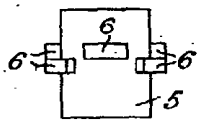
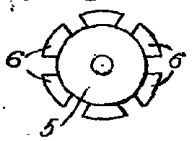


Fig. 8.



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