

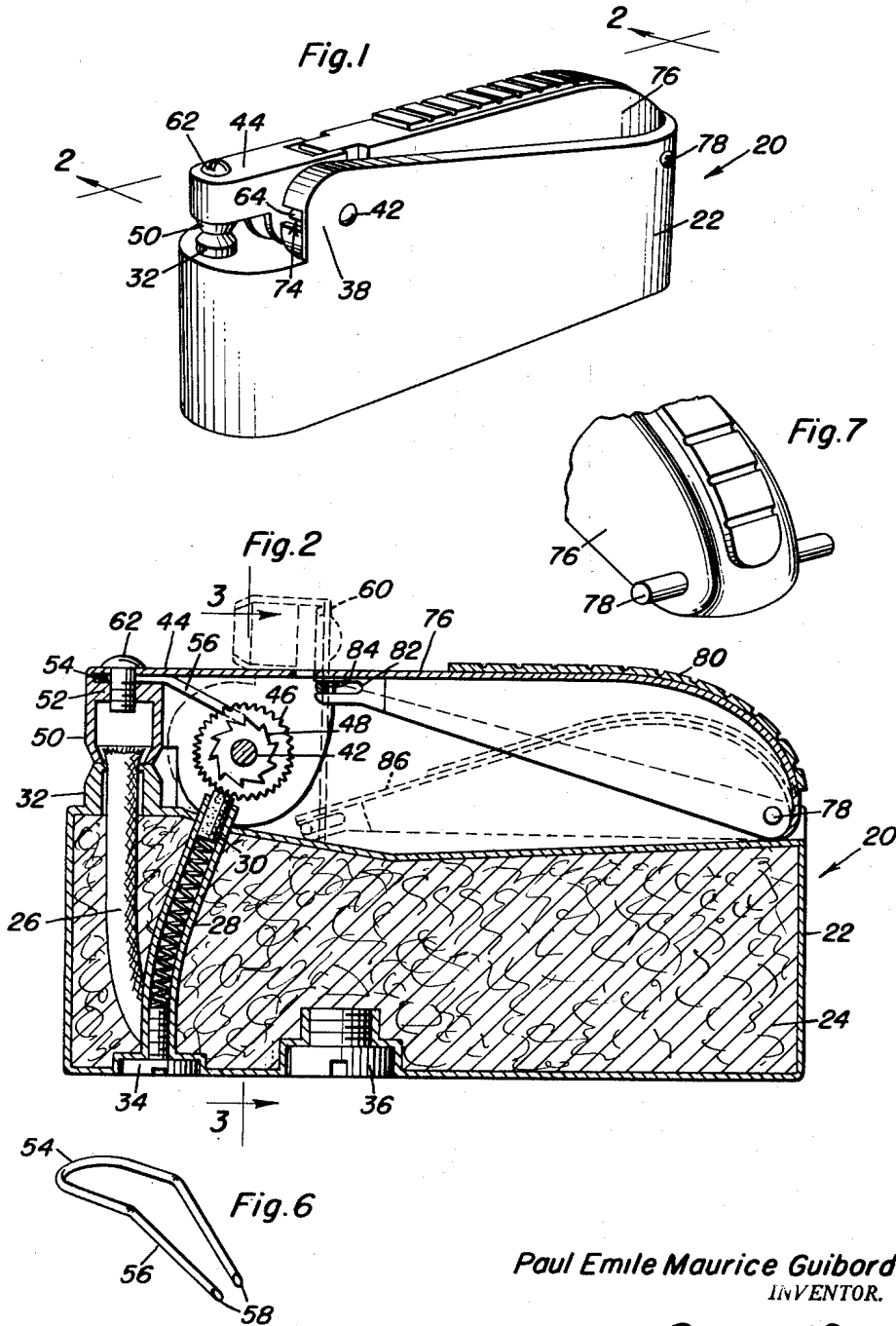
May 13, 1952

P. E. M. GUIBORD  
PYROPHORIC LIGHTER

2,596,548

Filed Nov. 7, 1950

2 SHEETS—SHEET 1



Paul Emile Maurice Guibord  
INVENTOR.

BY *Charles A. Olson*  
*and Harvey B. Jacobson*  
Attorneys

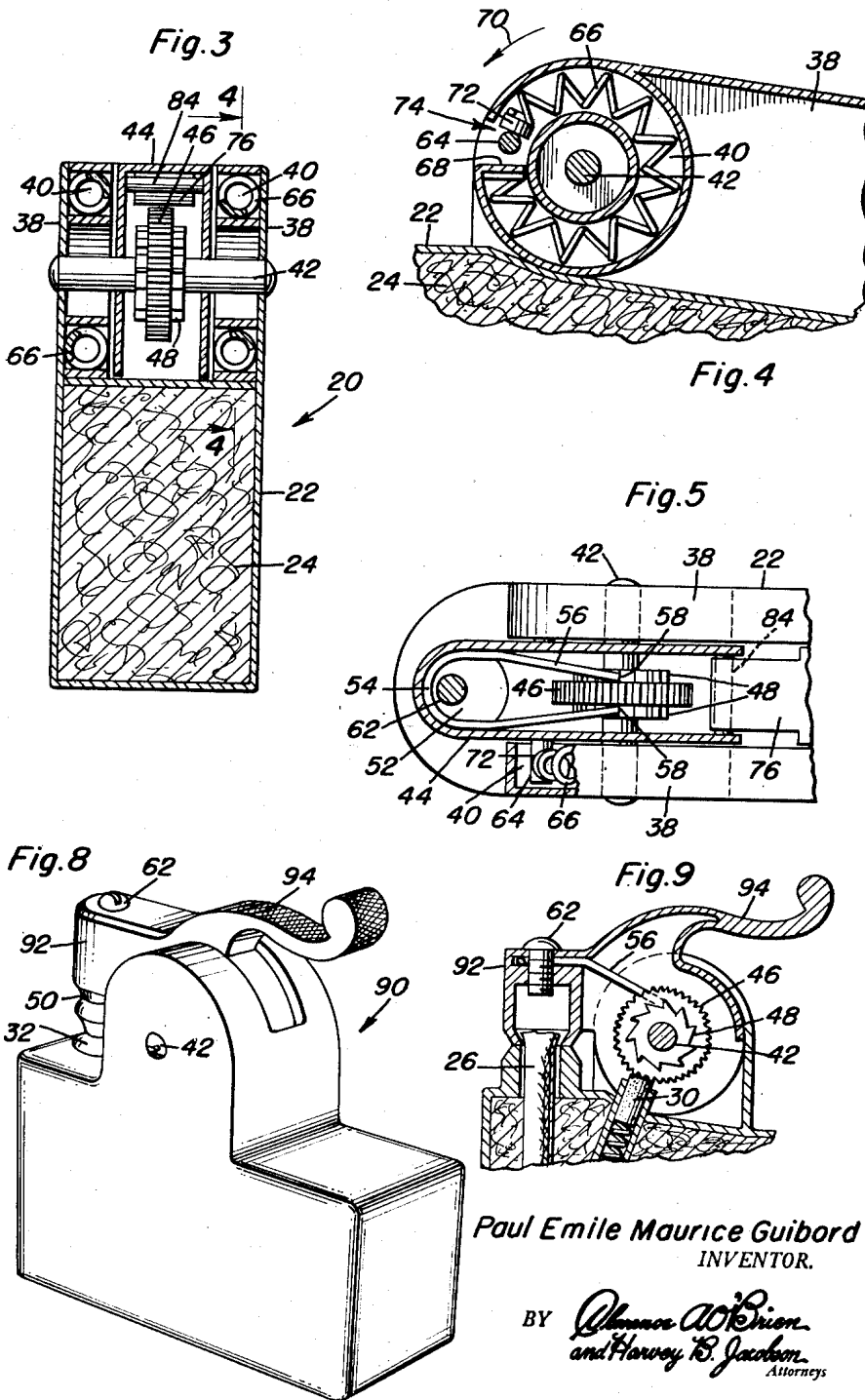
May 13, 1952

P. E. M. GUIBORD  
PYROPHORIC LIGHTER

2,596,548

Filed Nov. 7, 1950

2 SHEETS—SHEET 2



Paul Emile Maurice Guibord  
INVENTOR.

BY *Almon W. Prion*  
*and Harvey B. Jacobson*  
Attorneys

# UNITED STATES PATENT OFFICE

2,596,548

## PYROPHORIC LIGHTER

Paul Emile Maurice Guibord, Montreal, Quebec,  
Canada, assignor of fifty per cent to Leo H.  
Riddell, Ottawa, Ontario, Canada.

Application November 7, 1950, Serial No. 194,527

1 Claim. (Cl. 67-7.1)

1

This invention relates to new and useful improvements and structural refinements in pyrophoric lighters, and the principal object of the invention is to provide a lighter with igniting mechanism of novel construction, which is substantially durable and thereby is capable of withstanding hard usage for considerable periods of time, without sustaining injury or damage.

Some of the advantages of the invention reside in its simplicity of construction, in its efficient and dependable operation, in its adaptability for use in pyrophoric lighters of different sizes and types and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially in the construction and arrangement of parts as shown in the accompanying drawings, in which:

Figure 1 is a perspective view of the invention;

Figure 2 is a vertical sectional view thereof, taken substantially in the plane of the line 2-2 in Figure 1;

Figure 3 is a transverse sectional view, taken substantially in the plane of the line 3-3 in Figure 2;

Figure 4 is a fragmentary sectional detail, taken substantially in the plane of the line 4-4 in Figure 3;

Figure 5 is a fragmentary detail, partially broken away, showing the arrangement of the spark wheel and ratchet unit with the associated pawl;

Figure 6 is a perspective view of the pawl per se;

Figure 7 is a fragmentary perspective view of an actuating element used in the invention;

Figure 8 is a perspective view of a modified embodiment of the invention; and

Figure 9 is a fragmentary sectional view taken substantially in the plane of the line 9-9 in Figure 8.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, more particularly to Figures 1-7, inclusive, the invention is embodied in a pyrophoric lighter which is designated generally by the reference character 20 and includes the usual housing 22 which affords a fuel chamber 24 in which is disposed a wick 25 and a tube 28 containing a spring-pressed flint 30, all arranged in the conventional manner. The wick 26 protrudes outwardly from the chamber 24 through a guide 32

2

provided on the top wall of the housing, while the flint replacing screw in the tube 28 is designated by the numeral 34 and the fuel filler screw for the chamber 24 is indicated by the numeral 36.

The essence of novelty in the invention resides in the construction of the igniter mechanism, this involving the provision of a pair of transversely spaced members 38 at the top of the housing 22, the members 38 being provided with a pair of coaxial, annular chambers 40 which have open opposing inner sides in communication with the space between the members 38, as is best illustrated in Figure 3.

A transverse fulcrum pin 42 is secured in the housing members 38 coaxially with the chambers 40, and a hollow cap 44 is swingably mounted on this pin between the members 38, as shown.

The hollow cap 44 accommodates what may be called a combined spark wheel and ratchet unit including a spark wheel 46 and a pair of ratchet wheels 48 which are disposed at the opposite sides of the spark wheel and are rotatable therewith on the pin 42 independently of the movement of the cap 44.

The spark wheel 46 frictionally engages the aforementioned flint 30, and the cap 44 also embodies an inverted snuffer cup 50 which is adapted to abut the aforementioned guide 32 and cover the wick 26 when the cap 44 is in its closed position, so as to extinguish a flame on the wick in the conventional manner.

It is to be noted that the closed upper end 52 (see Figure 2) of the cup 50 is spaced downwardly from the top wall of the cap 44, whereby to accommodate therebetween the bight portion 54 of a substantially U-shaped rod which is designated generally by the reference numeral 56 and functions as a pawl, having free ends 58 thereof in operative engagement with the respective ratchets 48. It will be apparent from the foregoing that when the cap 44 is swung to its open position, as indicated by the dotted lines 60 in Figure 2, the ratchets 48 will be rotated so as to strike the spark wheel 46 against the flint 30, but when the cap 60 is subsequently returned to its closed position, the spark wheel and ratchet unit will remain stationary.

A keeper screw 62 extends downwardly through the upper wall of the cap 44 and through the top wall 52 of the cup 50, this screw being disposed within the bight portion 54 of the pawl 56 whereby to sustain the latter in position. Needless to say, by simply removing this screw, the pawl 55 may be conveniently replaced, when necessary.

3

Means are provided for automatically returning the cap 44 to its closed position, these means involving the provision of a pair of pins or fingers 64 which project to opposite sides from the cap 44 into the respective chambers 40 and abut the ends of arcuate, helical springs 66 which these chambers accommodate. Stationary abutment members 68 are also provided in the chambers 40 at the opposite ends of the springs 66, so that the springs urge the cap 44 to its closed position, as indicated by the arrow 70 in Figure 4.

The springs 66 may be provided at one end thereof with suitable plugs 72 to abut the fingers 64 as shown in Figure 4, and the abutment members 68 may be formed integrally with the housing members 38, if so desired. However, it is to be noted that the housing members 38 are formed with openings 74 communicating with the respective chambers 40, so as to afford passages for the fingers 64 when the cap 44 is being removed from its position between the housing members after removal of the fulcrum pin 42.

The lighter is actuated by the depression of an elongated actuating member 76 which is pivotally mounted at one end thereof by a pin 78 on the housing 22, the member or element 76 being equipped with a suitable finger grip 80 while its other end portion is provided with a slot 82 to accommodate a transversely extending bar or rod 84 in the cap 44. It will be apparent from the foregoing that when the element 76 is depressed to the position shown by the dotted lines 86 in Figure 2 the cap 44 will be swung upwardly, as indicated at 60, and when downward pressure on the element 76 is released, the springs 66 will automatically return the cap as well as the actuating element 76 to their initial position.

Referring now to the modified embodiment of the invention which is illustrated in the accompanying Figures 8 and 9 and is designated generally by the reference character 90, the arrangement of the igniter mechanism herein is similar to that in the embodiment already described, with the exception that the cap 92, corresponding to the aforementioned cap 44, is provided with a simple finger piece 94 whereby the cap may be swung to its open position, as will be clearly apparent.

4

It is believed that the advantages and use of the invention will be readily understood from the foregoing disclosure, and accordingly further description thereof at this point is deemed unnecessary.

Having described the invention, what is claimed as new is:

In a pyrophoric lighter, the combination of a pair of transversely spaced housing members provided with a pair of coaxial annular chambers having open opposing inner sides in communication with the space between said members, a transverse fulcrum pin secured in the housing members axially of said chambers, a hollow cap swingably mounted on said pin between said members, a combined spark wheel and ratchet unit rotatable on said pin within said cap and independently of the latter, a resilient pawl provided in said cap and operatively engaging the ratchet portion of said unit, a pair of fingers provided on opposite sides of said unit and projecting laterally into the respective chambers, a pair of stationary abutment members provided in the chambers of the respective housing members, a pair of arcuate helical springs positioned in the respective chambers between the respective housing members and the respective fingers whereby to swing said cap in one direction, and means for swinging said cap in a direction opposing the action of said springs.

PAUL EMILE MAURICE GUIBORD.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
1,725,901	Douglass -----	Aug. 27, 1929
1,762,123	Aronson -----	June 3, 1930
1,859,908	Aronson -----	May 24, 1932
2,051,934	Aronson -----	Aug. 25, 1935
2,111,523	Aronson -----	Mar. 15, 1938
2,417,630	Campos -----	Mar. 18, 1947

#### FOREIGN PATENTS

Number	Country	Date
599,271	Great Britain -----	Mar. 9, 1948