Oct. 31, 1950

G. P. HARTZELL

2,527,998

CIGARETTE LIGHTER

Filed Jan. 17, 1947

Fig. 1

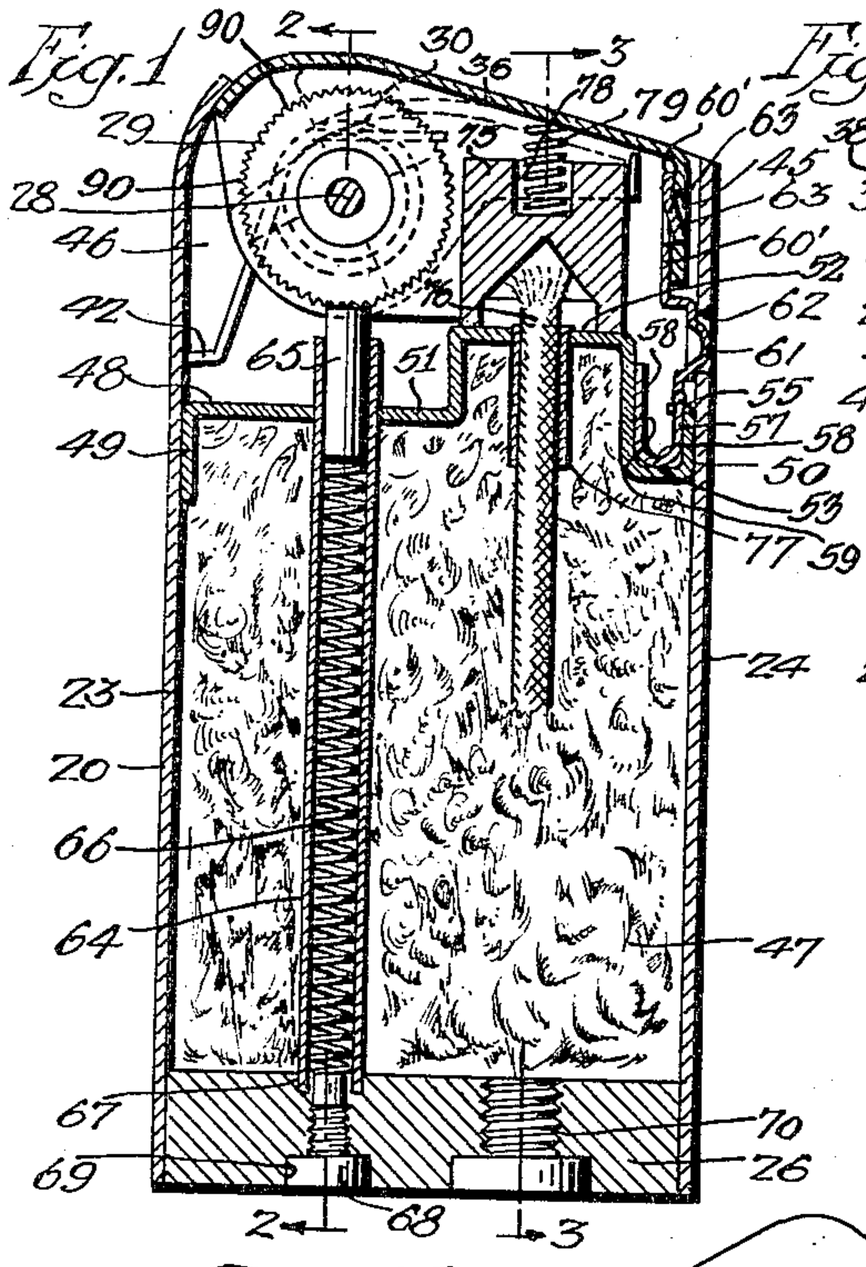


Fig. 2

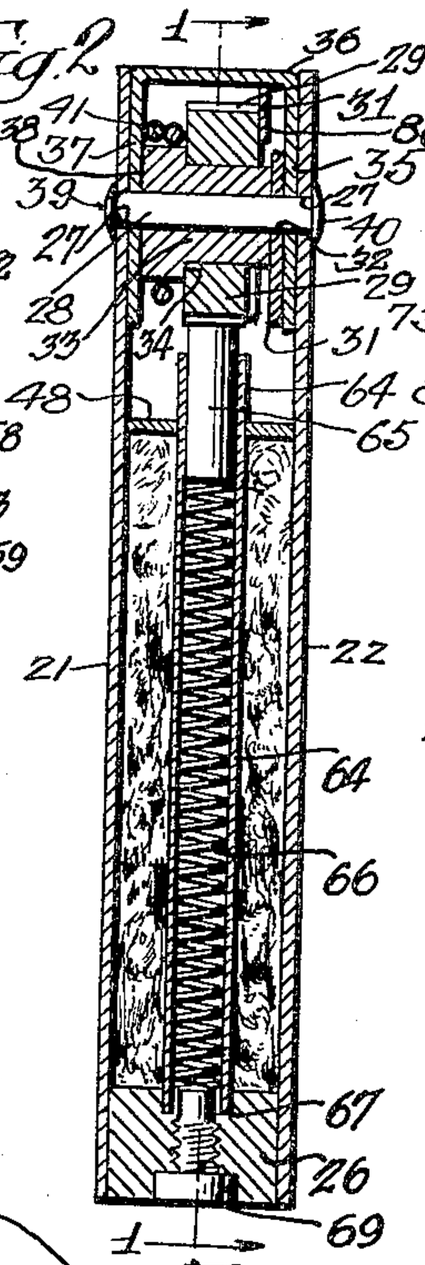


Fig. 3.

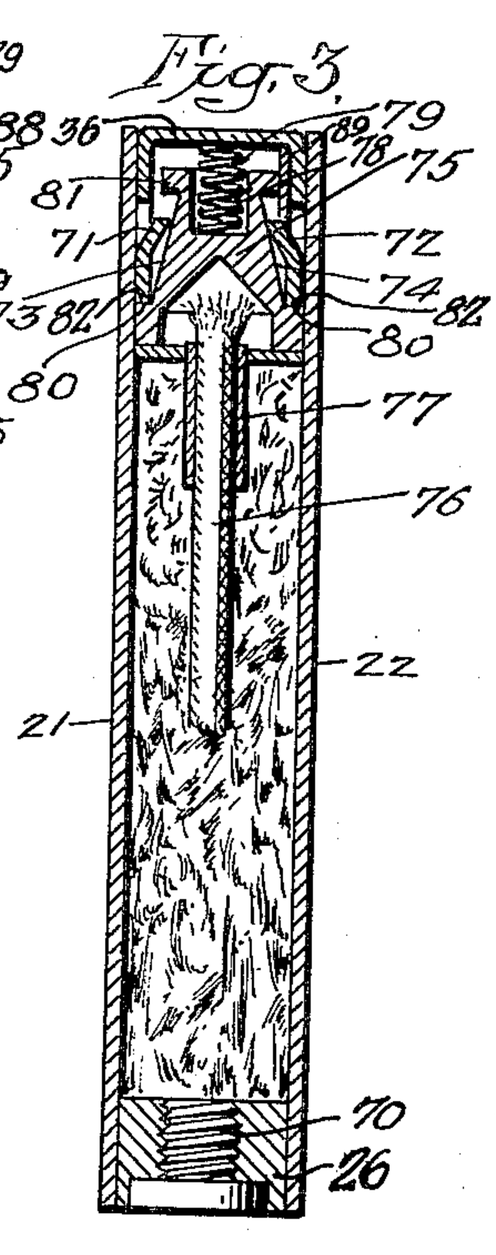


Fig. 4

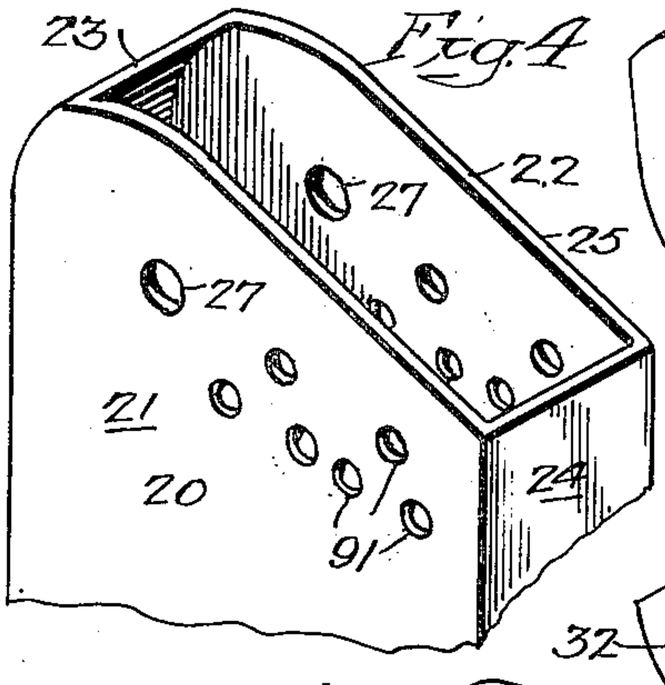


Fig. 5.

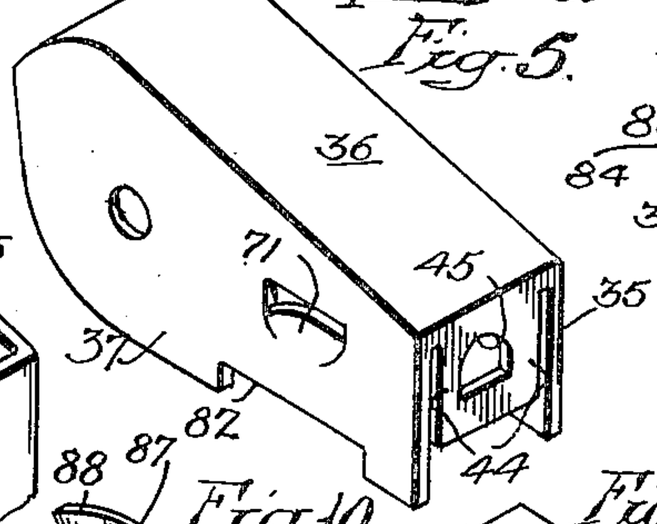


Fig. 6.

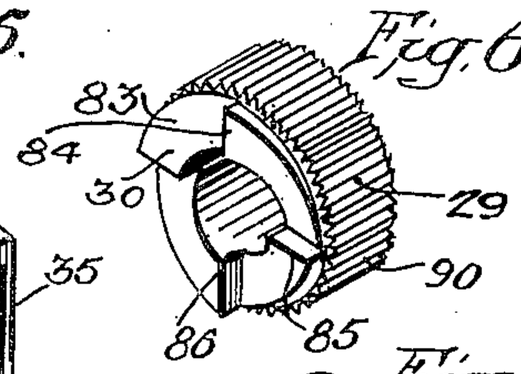


Fig. 9.

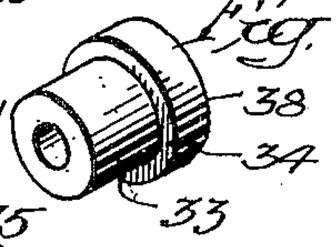


Fig. 10

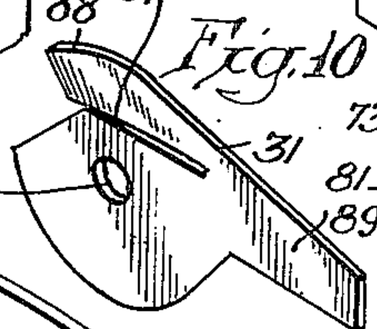


Fig. 11

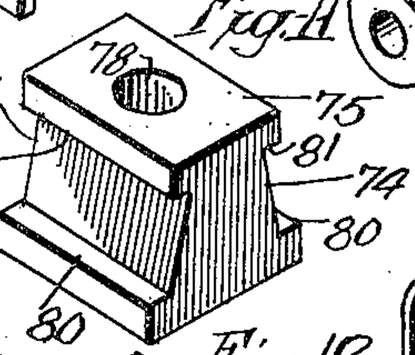


Fig. 13

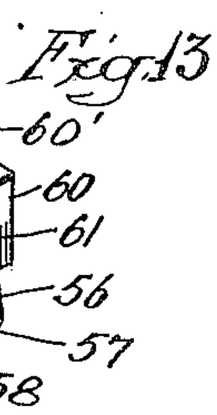


Fig. 8.

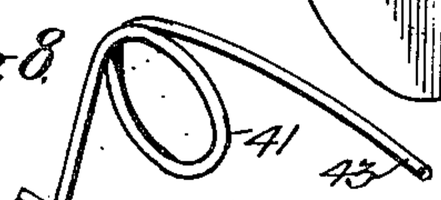


Fig. 12.

Fig. 7

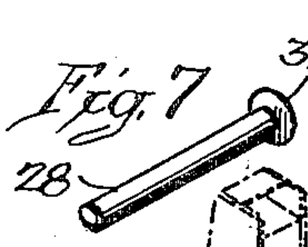
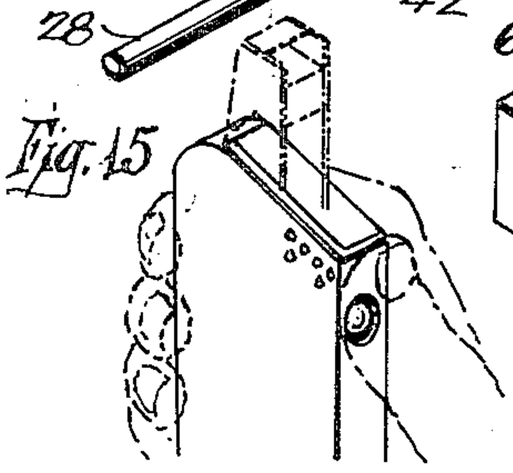


Fig. 14.

Fig. 15



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By

ATTORNEYS

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UNITED STATES PATENT OFFICE

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CIGARETTE LIGHTER

George P. Hartzell, Chester, Pa.

Application January 17, 1947, Serial No. 722,661

1 Claim. (Cl. 67—7.1)

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My invention relates to portable lighters for cigarettes, cigars and the like.

The main purpose of my invention is to control operation of a lighting device by thumb touch engagement with the latch mechanism.

A further purpose is to produce a portable lighter which is of economical manufacture and easy assembly.

A further purpose is to use a spring pressed latch in cooperation with my lighting mechanism.

A further purpose is to simplify the assembly and disassembly.

A further purpose is to provide an opening in a lighter casing into which a latch protrusion is placed in order that thumb touch contact can be made with the protrusion.

Further purposes will appear in the specification and in the claim.

Describing in illustration, but not in limitation and referring to the drawings:

Figure 1 is a vertical sectional view of my improved lighter taken on the line 1—1 of Figure 2.

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary perspective view of the upper portion of the casing used in my device.

Figure 5 is a perspective view of the cover or movable lid in my invention.

Figure 6 is a perspective view of the spark throwing wheel carrying a ratchet mechanism.

Figure 7 is a detail perspective of the shaft used in the before mentioned figures, drawn to a slightly different scale.

Figure 8 is a perspective view of the tension spring used in my invention.

Figure 9 is a perspective view of the bushing used to mount the spark throwing ratchet wheel.

Figure 10 is a perspective view of a pawl which operates the ratchet wheel.

Figure 11 is a perspective view of the snuffer used in my invention.

Figure 12 is a perspective view of a dividing wall used to separate the striking and fluid compartments.

Figure 13 is a perspective view of the improved latch of my device.

Figure 14 is a perspective view of the base plate used in the casing.

Figure 15 is a fragmentary perspective view of my lighter showing a thumb in dot and dash lines against the opening through which the latch is operated and with the cover or lid shown in full

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lines in closed position and in dot and dash lines in open position.

I am familiar with the different push button release lighters which are on the market.

I believe I am the first to provide a lighter in which a spring pressed latch has a protrusion into an opening by which touch contact of a thumb will cause the lighter mechanism to operate.

My improved lighter can be made out of pressed metal parts or die castings which are easily formed, thereby reducing the cost of manufacture. However, I have found it desirable to machine certain parts making up the invention.

In Figure 1, I have shown the lighter in cross section. The casing 20 is tubular and has sides 21, 22 and ends 23, 24. The upper edges of my lighter casing are diagonally formed at 25.

The bottom of the casing 20 contains a base plate 26 (Figure 14). I have found it desirable to use a base plate of considerable strength in order to properly support the casing and provide desirable rigidity to the other structure involved in making up my lighter.

The upper portion of the casing has openings 27, through which a pin or shaft 28 (shown in detail in Figure 7) is inserted. The shaft 28 carries the spark throwing wheel 29 (Figure 6). On one side of the spark throwing wheel I provide a ratchet mechanism 30. The ratchet mechanism is operated by a pawl 31 (Figure 10) which is also pivoted on the shaft 28, passing through an opening 32 in the pawl structure.

Mounted on the shaft 28 and within the spark throwing wheel 29 is a bushing 33 (Figure 9). The bushing 33 carries a shoulder 34 which abuts the side of the spark throwing wheel 29 opposite from the ratchet. The opposite end of the bushing abuts the pawl 31. It will be noted that the abutment of the bushing 33 against the pawl 31 causes the pawl 31 to engage one side 35 of a cover 36 (Figure 5) and the other side 37 of the cover 36 engages the end 38 of the shoulder 34 of the bushing.

The shaft 28 is fastened at one side of the casing 20 and extends through the casing side of the cover 36 through the bushing 33, pawl 31, end 35 and through the side 22 of the casing where it is secured to the casing. The shaft is preferably riveted at its ends 39 and 40.

About the shoulder 34 of the bushing I place a coil spring 41 having one of its ends extended at 42 to make contact with the interior of the casing 20. The other end of the coil spring (Figure 8) is extended at 43 to make engagement with

the interior of the cover **36**. The front of the cover **36** has a downward extension **44** apertured at **45**.

My cigarette lighter is divided into two compartments, **46** for the lighting equipment and **47** for the lighting fluid supply. These compartments are formed by a partition **48** (Figure 12) which is made of pressed metal and soldered into place at **49** on one side and **50** on the other to engage the walls **23** and **24** of the casing **20**. The partition **48** is stepped at **51**, **52** and **53**. The step **53** is extended upwardly at **54** with its end **55** presenting a lug, which when assembled fits into an opening **56**, in the lower part of the latch **57** (Figure 13), which holds the latch, and helps to secure in place the stepped portion of the partition **48**.

The spring latch **57** having its lower U-bent end **58** fitting into the stepped portion **53**, carries an upwardly directed rear portion **58** which abuts a vertical wall **59** of the partition **48** to hold the latch member securely in place in the partition **48**. The upper end of the latch mechanism is stepped at **60** and carries a protrusion **61** which projects into an opening **62** in the casing. It will be noted that the protrusion **61** does not extend beyond the outside line of the casing wall and therefore when the protrusion is in place it will be necessary to have the fiexible part of the user's thumb press into the casing and make the necessary touch engagement to operate the lighting mechanism. This will be described hereinafter.

The upper end **60'** of the latch **60** is provided with an extension **63** preferably pressed or stamped from the latch material. The extension **63** projects outwardly and into the opening at **45** in the front end **44** of the cover **36**. It will be clear that movement of the extension of the spring latch member by touch engagement of the protrusion **61** will move the extension from within the opening **45** to release the cover which is under spring tension, thereby allowing the cover to move upward quickly.

The engagement of the U-shaped end **58** in the partition and at **61** through the casing holds the latch in position and aids in positioning the partition.

The partition **48** on its step **51** supports a tube **64** to form a casing for carrying a sparking insert **65** at one end, with a spring **66** in the casing to press the sparking insert against the spark throwing wheel **29**.

The bottom of the tube **64** is placed in a recess **67** in the base **26**. The spring tension is adjusted by movement of a screw plug **68** inserted in an opening **69** in the base **26**.

A plug **70** is also inserted into the base **26** to provide means for supplying the compartment with lighting fluid, wicking, and cotton or other fluid carrying material.

The lid or cover **35** has inwardly projecting tabs **71**, **72** which make engagement with the tapered sides **73**, **74** of the snuffing element **75** to hold the snuffing element in place within the cover **36** in order that the snuffing element, when the cover on the lighter is in closed position, will snuff out any flame that might be present in the wick **76**, when the snuffing element makes contact with the step **52** of the partition **48**.

It will be noted that the wick **76** is placed within a sleeve **77** with the sleeve almost flush with the step **52** but extending downwardly from the step **52** to within the chamber to support the wick **76** where it extends into the liquid chamber **47** of the lighter.

The snuffer element **75** is recessed at **78**, and in this recess is placed a coil spring **79** which provides spring pressure on the snuffer, the spring being set in the recess with its opposite end against the interior of the cover **36**.

The snuffer element **75** is provided with outwardly extending ledges **80**, **81**. I provide notched portions **82** on the cover to fit about the ledges to position the snuffer when the cover is in closed position. The snuffer thus has slight freedom of movement when the cover closes. In assembly, the snuffer and snuffer spring can simply be forced into place, deflecting the tabs **71** and **72**.

The ratchets **30** upon the spark throwing wheel **29** in the present showing are arranged in quadrants **83**, **84**, **85** and **86**. The pawl **31** which is pivoted upon the shaft **28** is of spring material slitted at **87** to provide for formation of a pawl finger **88**, which when the pawl element **31** is placed in position within the cover, will have the end **88** in engagement with either of the ratchet quadrants **83**, **84**, **85** or **86**. The pawl element **31** is held and guided in place between the sides **35** and **37** of the cover and between one of the ledges **81** of the snuffing element **75**. The forward extension **89** of the pawl element **31** is placed between the snuffing element and the interior top portion of the cover so that it is securely guided at all times.

When the cover is raised by release of the latch member **57** by pressing the protrusion **61**, the cover will swing quickly to raise the cover. When this action takes place the end of the pawl **88** will engage against the sides of one of the ratchets to move the spark throwing wheel in a counter-clockwise position.

It will be noted that the pawl end **88** extends generally radial at its extremity.

The serrations or teeth **90** upon the spark throwing wheel impinge against the flint member **65** to throw the sparks in the direction of the wick **76** and thereby ignite the wick. It will be noted that every time the cover is opened the flint wheel or spark thrower will move a quarter of a turn in counterclockwise direction.

By the use of the pressed metal parts employed in my invention, I have found it possible to cut the cost of manufacture to a considerable extent without weakening the structure and without an inferior lighting device. The reason for this is that by the use of metal parts that can be easily assembled and held in position within the casing I have been able to construct a lighter which is efficient in performance and well meets the needs of service.

At the top of the casing, close to the wick, I provide openings **91**, which will supply a sufficient quantity of air to have the lighter perform well.

It will be evident that many of the metal parts may be made of die castings without departing from the invention.

It will be evident that by the construction shown in Figure 15 the user can grasp the lighter with the fingers, as shown, and there will be no interference with the raising operation of the cover, even if the fingers were above the cover as long as the fingers were holding the rearward part of the casing.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying

the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claim.

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

In a lighter, a casing, wick means positioned within the casing, a cover pivoted to the casing, a rectangular snuffer inside the cover having lateral guiding walls cooperating with the cover, having stops limiting movement too far into the cover and having stops against movement too far out of the cover and having a spring socket on its upper end, projecting tabs on the sides of the cover and integral with the cover extending inwardly, in the inward position of the snuffer engaged by the stops limiting the inward movement, and in the outward position of the snuffer engaged by the stops limiting the outward movement and spiral spring means in the spring socket urging the snuffer away from the top of the cover, the tabs being resilient so that the snuffer can be forced into the cover for assembly purposes after the tabs have been formed.

GEORGE P. HARTZELL.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
569,267	Williams	Oct. 13, 1896
1,060,150	Adamian et al.	Apr. 29, 1913
1,086,175	Hofmann	Feb. 3, 1914
1,975,173	Pennock et al.	Oct. 2, 1934
2,183,706	Bass	Dec. 19, 1939
2,234,298	Bolle	Mar. 11, 1941
2,252,676	Zaken	Aug. 12, 1941
2,461,330	Lanowehr	Feb. 8, 1949

FOREIGN PATENTS

Number	Country	Date
184,944	Switzerland	Sept. 16, 1936
537,397	France	June 14, 1921
879,966	France	Dec. 10, 1942