

June 2, 1953

T. H. BATT
CIGARETTE LIGHTER

2,640,340

Filed Nov. 13, 1950

2 Sheets-Sheet 1

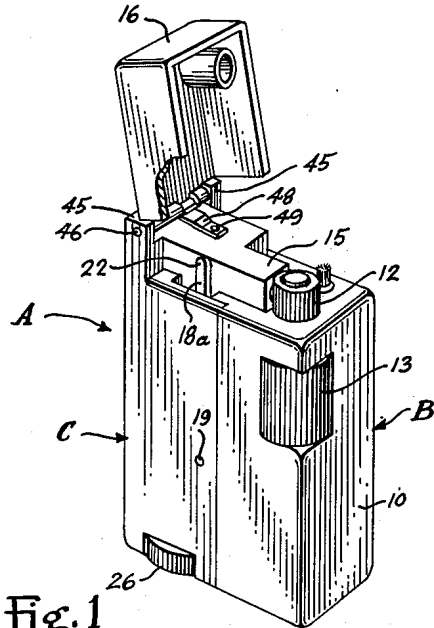


Fig. 1

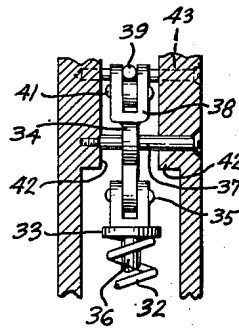


Fig. 6

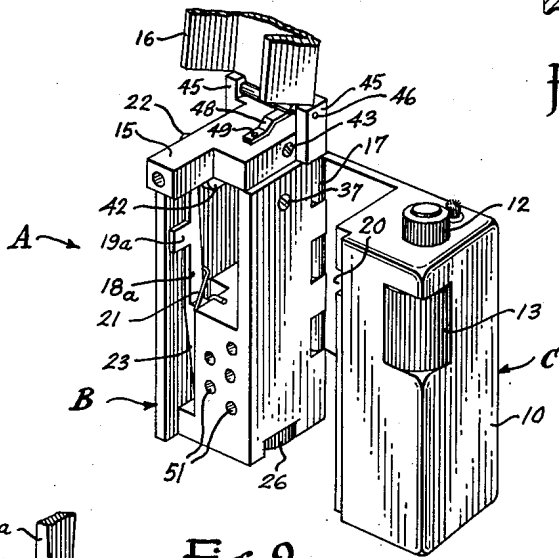


Fig. 2

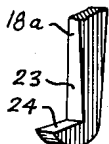


Fig. 8

Inventor
THOMAS H. BATT
by: Featherstonhaugh & Co.
Attys

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2 Sheets-Sheet 2

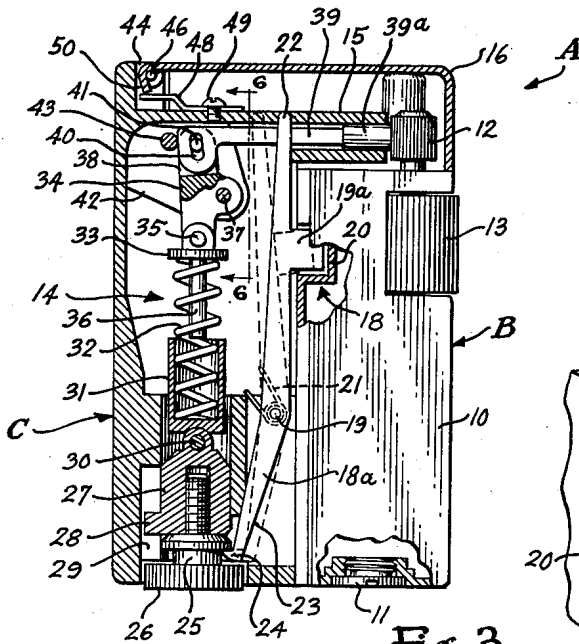


Fig. 3

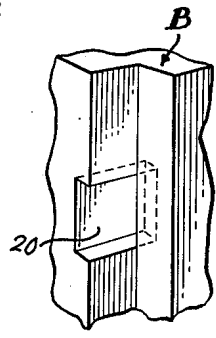


Fig. 7

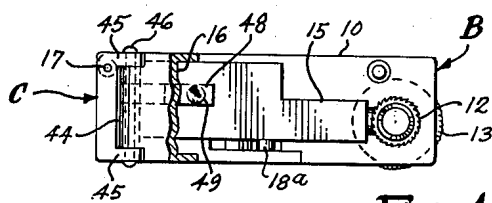


Fig. 4

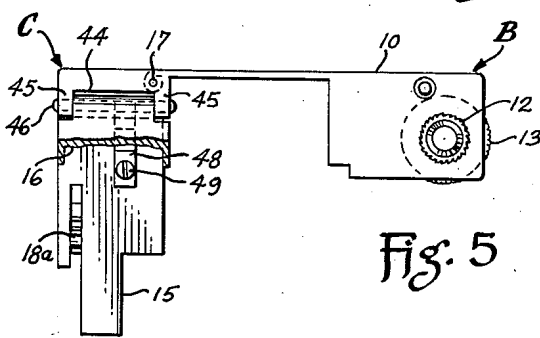


Fig. 5

Inventor
THOMAS H. BATT
by: Featherstonhaugh & Co.
Att'ys

UNITED STATES PATENT OFFICE

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CIGARETTE LIGHTER

Thomas Hallworth Batt, Toronto, Ontario,
Canada

Application November 13, 1950, Serial No. 195,347

4 Claims. (Cl. 67-7.1)

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This invention relates to improvements in flint loading and flint pressure mechanisms for pocket cigarette lighters.

It is an object of this invention to provide a lighter which has a body comprised of two halves hinged together so that when new flints are needed, the main body need only be opened, and a new flint inserted into that opening of the flint tube adjacent the flint wheel.

Another object of the present invention is to provide a lighter with a compensated spring pressure for the flint pressure mechanism.

A further object of this invention is to provide a manual adjustment of the flint spring compression by means of a knurled thumb screw in conjunction with a non-turning spring seat, for adjusting spring pressure for flints of different hardness.

A still further object of this invention is to provide a means in the flint pressure mechanism whereby the pressure on the flint is maintained as the flint spring is extended due to the flint being worn down.

With these and other objects in view, the invention generally comprises a substantially rectangular lighter body comprised of two separable components, a flint wheel on one component, a flint pressure mechanism including a flint tube for carrying a flint in the other component and positioned to cause a flint in the flint tube to engage the flint wheel when the components are assembled. A latch is provided for maintaining the components in assembled relationship, the latch being operatively related to the flint pressure mechanism, to cause release of the latter when the latch is actuated for separation of the two components.

These and other features will be apparent by reference to the following detailed specification taken in conjunction with the accompanying drawings.

Referring to the drawings:

Figure 1 is a perspective view of the lighter with the cover opened;

Figure 2 is a perspective view of the lighter, showing the main body opened ready for the insertion of a new flint and particularly illustrating the two main components of the body;

Figure 3 is a side view of the lighter with part of the outer wall removed, showing the flint pressure mechanism;

Figure 4 is a top view of the lighter with part of the cover removed;

Figure 5 is a top view of the lighter with the two main parts open;

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Figure 6 is a fragmentary sectional view taken along the line 6-6 of Figure 3;

Figure 7 is a fragmentary perspective view of a recess which accommodates the latch which keeps the two parts of the lighter body together;

Figure 8 is a fragmentary perspective view of the lower end of the latching lever.

Referring to the drawings, A indicates a lighter body comprised of two main components, B and C. Component B comprises a conventional fuel tank 10, fillable by unscrewing the slotted screw 11. On the top portion of component B is a conventional flint wheel 12, co-axially mounted with the knurled wheel 13, which protrudes slightly from the corner of the lighter, and may be easily rotated by the thumb of the user.

Component C comprises a hollow body, which holds the flint pressure mechanism 14, a flint tube 15, and a hinged cover 16.

Components B and C are hingedly connected to each other along one edge of the body as at 17, and are held in a closed position by latch means 18 operatively related by lever 18a to flint pressure mechanism 14. Thus latching lever 18a is pivotally connected to component C as at 19 and has a lug 19a that enters a recess 20 located in component B (see also Figure 7). This lever is normally held in the locked position by means of the coil spring 21. Lever 18a extends upwardly so that its extreme end 22 which lies adjacent the flint tube 15 can be pushed rearwardly by the user's finger, causing lug 19a to be free of the recess 20, thus allowing the two main components B and C to be opened. The lever 18a is so constructed that the lower end 23 embodies releasable means in the form of a finger 24 (see Figure 8) which extends into an annular groove 25 in the screw 26 for maintaining the latter flint pressure adjusting means and thus the flint pressure mechanism in a position of adjustment within the component C. It will be noted that when the top end 22 of the lever 18a is moved rearwardly, the finger 24 at the lower end will disengage from the screw 26 before the lug 19a has completely moved away from the recess 20. This will allow the pressure to be released from the flint pressure mechanism 14. The lever 18a can then be moved further in the same direction so that the lug will be fully disengaged, allowing the two components B and C to be opened.

Referring now to the flint pressure mechanism 14, the pressure adjusting means comprise, the screw 26 disposed in threaded engagement with the actuating sleeve 27, which latter is formed with a laterally projecting lug 28 entering the ver-

tical slot 29 formed in the component C. It will be obvious therefore that when the screw 26 is rotated, the actuating sleeve will be caused to rise or fall depending on whether an increase or decrease of pressure on the flint is required. The upper end of the actuating sleeve has a pin 30 that pivotally mounts a cup 31, which receives a suitable coil spring 32. The upper end of this coil spring presses against a collar 33 which is pivotally mounted to the force translating member or rocker bar 34 by means of the pin 35. The collar 33 has at its centre a rigidly mounted bayonet pin 36, which helps to maintain the coil spring 32 in a straight line. The rocker bar 34 is pivotally mounted as at 37 and has a bifurcated end 38 which pivotally receives a flint pressure member or bar 39. The upper bifurcated end 38 and the flint pressure member or bar 39 are held in substantially a straight line by the shoulders 42 formed inside the walls of the component C. This bar has a slot 40 which allows movement of the pin 41, while the bifurcated end of the rocker arm travels in an arcuate path.

Due to the fact that the pivotal pin 37 is located to one side of a centre line which passes through the pins 35 and 41, it will be evident that as the flint wears and decreases in length, the rocker bar will rotate in a clockwise direction, causing an increase of leverage between pins 37 and 35, which is consequently transferred at right angles by means of the flint pressure member or bar 39 to the flint 39a. Thus, it will be seen that as the compressed spring is slowly released due to the wear on the flint, the arcuate path of the rocker bar compensates for this decrease and maintains a constant predetermined pressure on the flint.

A stop 43 in the form of a pin inserted transversely of the component C is provided to prevent the flint pressure member or bar 39 from being fully retarded from the flint tube 15.

Referring now to Figures 3, 4 and 5, the upper portion of component C has a recess 44 with shoulders 45 that accommodate the pin 46 which in turn hingedly mounts a cover 16 for the lighter. This cover is held in the open and closed position by means of a leaf spring 48 which is mounted to the top surface of component C by the screw 49. The leaf spring 48 presses upwardly against a portion 50 on the barrel of the hinge, which projects from the pin 46 at substantially right angles to the top surface of the cover. This is a known type of spring loaded cover having a snuffer and needs no further description.

It will be apparent that I have provided a particularly simple lighter, which achieves the objects outlined. This lighter requires a minimum of attention in the event that the old flint requires removal. A new flint may be inserted which may be taken from a reservoir of flints as shown by the numeral 51.

It will be appreciated that many modifications will be apparent to skilled persons, not only in the arrangement of the parts, but also in the particular components chosen for carrying out the desired functions. It is not intended therefore that the illustrations herein should be interpreted in any sense which would limit the arrangement of the structure, other than that indicated by the scope of the following claims.

What I claim as my invention is:

1. The combination in a pocket lighter of a lighter body formed of two main separable components, a flint wheel on one component, a flint

pressure mechanism including a flint tube for carrying a flint in the other component and positioned to cause a flint in the flint tube to engage the flint wheel when the components are assembled, latch mechanism for maintaining the components in assembled relationship, and flint pressure release means forming a part of said latch mechanism for releasing said flint pressure mechanism prior to the separation of said separable components when said latch is actuated to separate said components, a force translating member, a pin pivotally mounting said member and disposed adjacent an extended line of the loaded axis of said spring, means connecting said member and the flint pressure member to cause the latter to move when said member is rotated about said pin by said spring, said spring being disposable on expansion and movement of said pressure member such that its axis is substantially displaced from a position adjacent said pin whereby the moment arm of action of said spring is increasable as said pressure moves during wear of the flint.

2. The combination in a pocket lighter of a lighter body formed of two main separable components, a flint wheel on one component, a flint pressure mechanism including a flint tube for carrying a flint in the other component and positioned to cause a flint in the flint tube to engage the flint wheel when the components are assembled, latch mechanism for maintaining the components in assembled relationship, and flint pressure release means forming a part of said latch mechanism for releasing said flint pressure mechanism prior to the separation of said separable components when said latch is actuated to separate said components, said flint pressure mechanism comprising a flint pressure member, a spring, means at one end of spring for applying the spring pressure thereof to said pressure member, a spring supporting member supporting the other end of said spring, an adjusting screw threaded into said support member, said flint pressure release means engaging with said screw to retain it against axial movement but allowing rotational movement thereof to adjust the compression of said spring.

3. The combination in a pocket lighter of a lighter body formed of two main separable components, a flint wheel on one component, a flint pressure mechanism including a flint tube for carrying a flint in the other component and positioned to cause a flint in the flint tube to engage the flint wheel when the components are assembled, latch mechanism for maintaining the components in assembled relationship, and flint pressure release means forming a part of said latch mechanism for releasing said flint pressure mechanism prior to the separation of said separable components when said latch is actuated to separate said components, said flint pressure mechanism comprising a flint pressure mechanism passage in the flint pressure mechanism compartment, a spring in said passage, means at one end of said spring for transmitting the pressure thereof to the flint, means slidable in said passage for supporting the other end of said spring and including a lug for retaining the same against rotation, and an adjusting screw engaging said slidable means, said flint pressure release means retaining said screw against axial movement but allowing rotational movement thereof.

4. The combination in a pocket lighter of a lighter body formed of two main separable components, a flint wheel on one component, a flint

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pressure mechanism including a flint tube for carrying a flint in the other component and positioned to cause a flint in the flint tube to engage the flint wheel when the components are assembled, latch mechanism for maintaining the components in assembled relationship, and flint pressure release means forming a part of said latch mechanism for releasing said flint pressure mechanism prior to the separation of said separable components when said latch is actuated to separate said components, said flint pressure mechanism comprising a flint pressure member, a spring, means in the form of a pivotal rocker bar having a pair of arms, one of which is connected to one end of said spring, the other of which is connected to the flint pressure member, a spring supporting member supporting the other end of said spring, and an adjusting screw

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threaded into said support member, said flint pressure release means retaining said screw against axial movement but allowing rotational movement thereof to adjust the compression of said spring.

THOMAS HALLWORTH BATT.

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