Aug. 14, 1962 KYOZO MATOBA 3,049,117

POCKET HAND WARMER AND BURNER UNIT THEREFOR

Filed May 5, 1961

Fig. 1

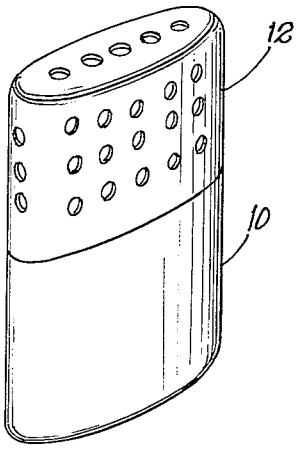


Fig. 2

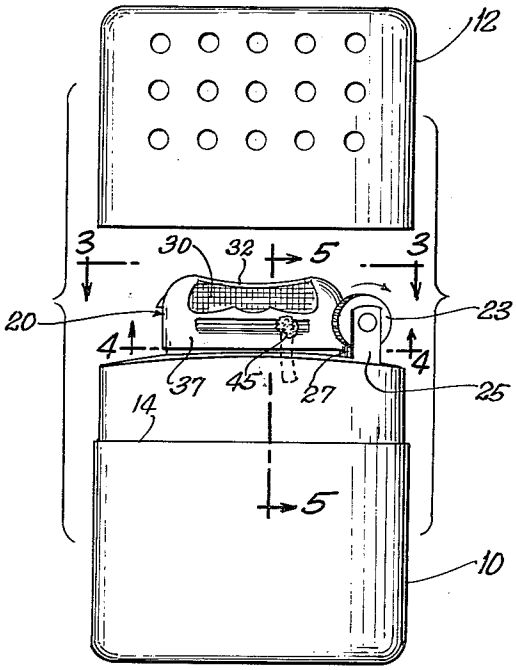


Fig. 5

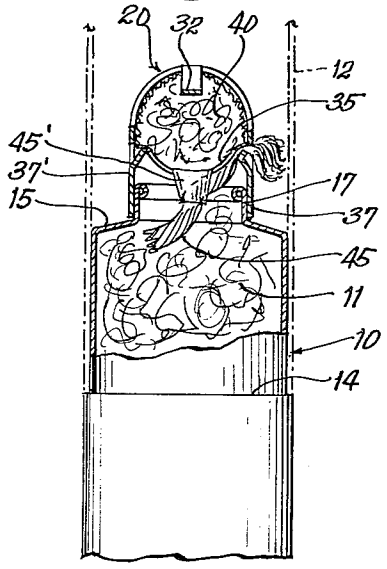
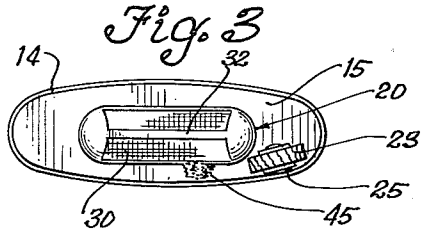


Fig. 3



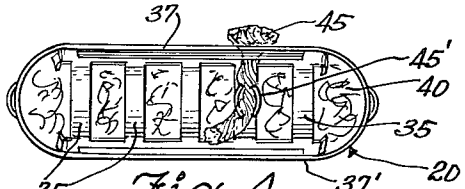


Fig. 4

INVENTOR.
Kyozo Matoba

BY
Frank H. Marks
Nathan N. Kraus,
Att'ys

United States Patent Office 3,049,117 Patented Aug. 14, 1962

3,049,117
POCKET HAND WARMER AND BURNER UNIT THEREFOR

Kyozo Matoba, Nishinomiya, Japan, assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York

Filed May 5, 1961, Ser. No. 108,176
4 Claims. (Cl. 126—208)

My invention relates to pocket hand warmers of a type which is generally well known in the art, as illustrated for example in Kanazawa Patent No. 1,502,251, dated July 22, 1924. In general, such a device comprises a reservoir or container for volatile fuel, an absorbent material such as cotton wool or the like usually being employed in said reservoir as an absorber for such fuel. Mounted above the reservoir is a catalytic burner, and a removable apertured cover is usually disposed over the burner. In use, after the burner has been ignited, combustion will continue at a relatively slow rate until the fuel is exhausted.

In Wilcox Patent No. 2,914,060, dated November 24, 1959, is disclosed a pocket hand warmer of this general type embodying an igniting device similar in character to the usual form of cigarette lighter, i.e., a rotary striker (flint and steel) being mounted on the top wall of the fuel reservoir together with a wick mounted adjacent the striker and extending down into the fuel.

My invention may be considered an improvement on the last described arrangement. My invention contemplates a pocket hand warmer generally similar in character to those described above, together wtih an igniter, but according to my invention the igniting wick is carried by the burner housing as a unit. This arrangement has certain important advantages over the above-mentioned Wilcox construction, as will hereinafter appear.

Referring now to the drawings forming a part of this application and illustrating a preferred embodiment of my invention,

FIG. 1 is a perspective view of a pocket hand warmer embodying my invention, with the cover cap in place;

FIG. 2 is a side elevation of the same, the cover cap being shown displaced or in "exploded" relation to the main body portion of the hand warmer;

FIG. 3 is a top plan view taken substantially along the line 3—3 of FIG. 2;

FIG. 4 is a bottom plan view of the burner portion of the hand warmer, taken substantially along the line 4—4 of FIG. 2, and

FIG. 5 is a fragmentary sectional view taken substantially along the line 5—5 of FIG. 2.

A hand warmer as illustrated in the drawings comprises a main body portion or reservoir **10** which serves as a container for volatile fuel, an absorbent material such as cotton wool **11** or the like usually being employed in the reservoir **10** to absorb and retain such fuel. A perforated cover cap **12** is normally mounted on top of the reservoir **10**, a shoulder **14** being provided on the latter for seating said cover.

The reservoir **10** is provided with a top wall **15** the central portion of which is provided with an upstanding collar or flange **17** for retaining a burner unit indicated generally by the numeral **20**.

Igniting means for the burner is provided and comprises a striker wheel **23** rotatably mounted in a bracket **25** secured to the top wall **15** of the reservoir **10**, said wheel being usually of flint or like material capable of producing a spark when it reacts against a stud **27** of steel or the like mounted in the wall **15** below the wheel **23**.

The burner unit **20** comprises a shell-like housing having substantially vertical walls adapted to engage snugly over the flange or collar **17** of the reservoir **10**, said burner housing defining an open bottom and having an opening

30 at the top thereof except for an integral strap **32**. A plurality of spaced, downwardly arcuate metal straps **35** connect the front and rear walls **37**, **37'** of the burner **20**. It will be understood, of course, that the burner may take a wide variety of forms.

It will be seen that in the embodiment here shown the burner body **20** defines a receptacle, the straps **35** defining a foraminous bottom wall thereof and the top thereof being open as defined by the opening **30**, said receptacle housing fibrous material **40** impregnated with a catalytic substance capable of inducing continued combustion of the fuel.

As described up to this point, the general character of the burner is substantially in accordance with known art.

The front wall **37** of the burner body **20** is perforated to permit passage of a wick **45**. As seen best in FIG. 5, the wick **45** has one end thereof disposed outside the burner and closely accessible to a spark produced by the striker wheel **23**, the wick extending below one of the straps **35** of the burner body and retained by a clip **45'** (FIGS. 4–5) which is formed integrally with said strap **35**; the wick extends through said clip and down into, or in contact with, the fuel contents of the reservoir **10**. As seen in FIG. 5, the wick may be relatively short, as it is only necessary for it to contact the fibrous filling **11** of the reservoir in order to conduct fuel therefrom by capilarity to the outer extremity of the wick.

It is believed that the operation of the device will be readily apparent. The reservoir may be filled with fuel from the top by removal of the burner body **20**. When the burner is restored to its normal position, fuel will be conducted by capilarity through the wick to the outer extremity thereof and operation of the striker will, of course, feed sparks onto the wick which will become ignited and will, in turn, ignite the burner, which will have received fuel from the interior of the reservoir. The cover cap **12** will then be restored to its normal position, as seen in FIG. 1. This operation will normally extinguish the flame at the extremity of the wick while combustion within the burner will continue until the fuel is exhausted.

One important advantage of my invention is that the burner and wick, principal parts subject to wear and deterioration, may be sold as a unit at a moderate price for replacement purposes. Furthermore, placement of the wick directly on the burner makes firing more quick and certain than in other constructions, the wick being not only adjacent the sparker but also serving to conduct fuel into the burner.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art; hence, I do not wish to be limited to the specific embodiments shown and described or uses mentioned, but intend the same to be merely exemplary, the scope of my invention being limited only by the appended claims.

I claim:

1. A pocket hand warmer comprising a hollow container serving as a fuel reservoir with an opening at the top thereof, an upstanding collar surrounding said opening, a burner unit fitting on said collar comprising a shell-like housing with catalytic material disposed therein adapted to overlie said opening, said housing having a substantially continuous wall open at its top and with an open bottom surrounded by a depending flange for frictionally embracing said upstanding collar, a wick extending transversely through said wall with a portion exposed on the outside thereof, a sparker mounted on said container in proximity to the exposed end of said wick on the outside of said housing so as to be ignitable thereby, another portion of said wick being mounted in said housing adjacent to said catalytic material with the free end of said wick extending into the fuel reservoir of said hollow container.

2. A pocket hand warmer as set forth in claim 1 wherein the fuel reservoir of the hollow container is provided with an absorbent filler, and wherein the shell-like housing of the burner unit is of sheet metal, said sheet metal being formed to support the intermediate portion of said wick so that the internal end thereof extends into contact with said absorbent filler material.

3. A burner unit for a pocket hand warmer containing a fuel reservoir terminating in an outlet opening with an upstanding collar, said unit comprising a shell-like housing with catalytic material disposed therein adapted to overlie said outlet opening, said housing having a substantially continuous wall open at its top and bottom with means bordering the open bottom and extending downwardly for engaging the collar of a reservoir, and a wick extending transversely through said wall, said wick having

a portion exposed on the outside of said wall and a portion on the inside thereof extending in contact with the catalytic material and below the lower limits of said means bordering the open bottom of said housing.

4. A burner unit as set forth in claim 3 wherein said housing is of sheet metal with means so supporting the inside portion of said wick that the latter is adapted to extend from a point in a fuel reservoir to a point adjacent the catalytic material.

References Cited in the file of this patent

UNITED STATES PATENTS

2,227,899	Grubb	Jan. 7, 1941
2,914,060	Wilcox	Nov. 24, 1959