Nov. 17, 1964 H. NIERHAUS 3,157,421

HASP SEAL

Filed May 22, 1961 2 Sheets-Sheet 1

FIG. 1

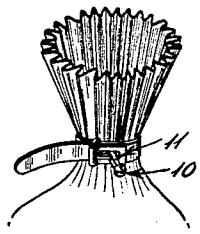


FIG. 2

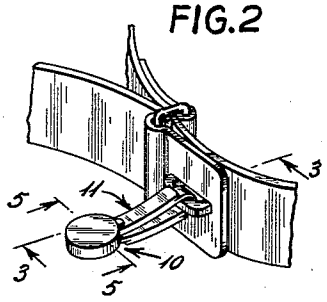


FIG. 4

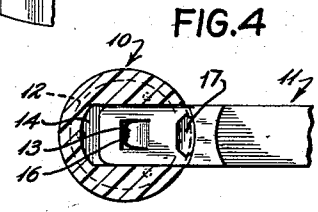


FIG. 3

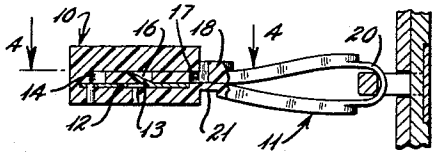


FIG. 5

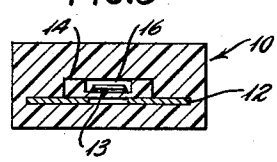


FIG. 6

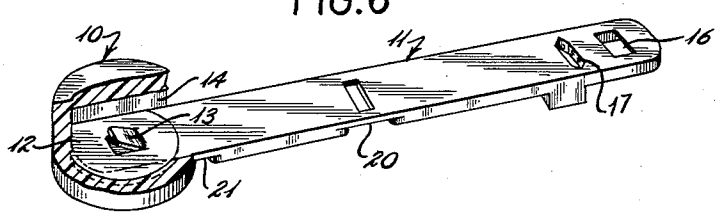


FIG. 7

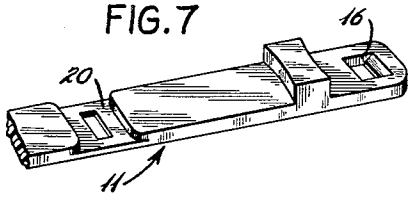
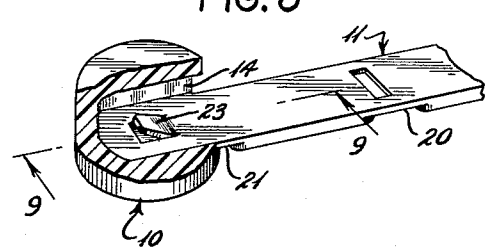


FIG. 8



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Nov. 17, 1964 H. NIERHAUS 3,157,421

HASP SEAL

Filed May 22, 1961 2 Sheets-Sheet 2

FIG.9

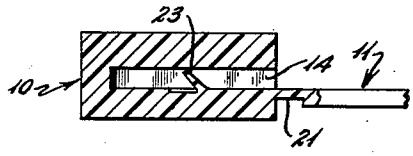
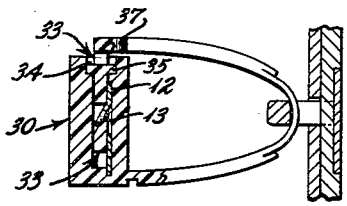


FIG.12



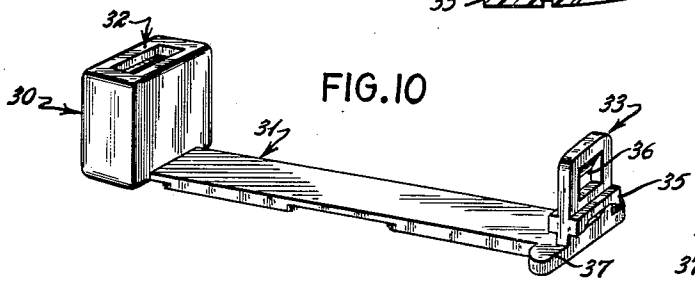


FIG.10

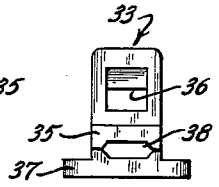


FIG.11

FIG.13

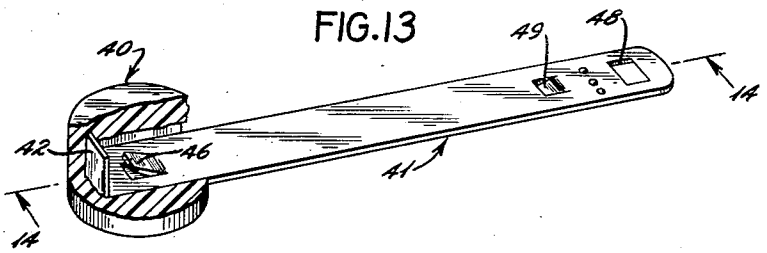


FIG.14

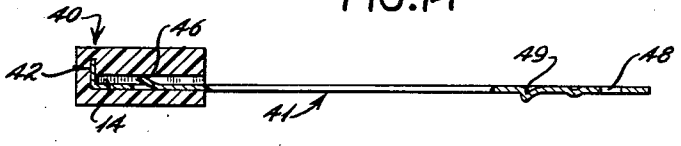


FIG.15

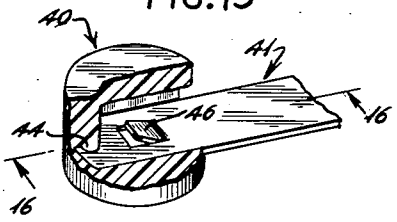
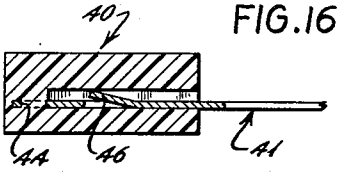


FIG.16



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3,157,421

HASP SEAL

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Filed May 22, 1961, Ser. No. 111,795
1 Claim. (Cl. 292—322)

This invention relates to security and more particularly to the sealing of hasps and locks of various types against surreptitious opening and closing.

In the handling of mail a large number of mail bags are transported by various means and are handled by or accessible to many persons. In order to protect the contents it has been the custom to secure the mouth of the bag with a strap which is retained by a hasp type lock.

Conventional key and combination locks for securing the hasp have been undesirable because of the weight thereof and the inconvenience of locking and unlocking. Then, too, ordinary locks may be surreptitiously opened and closed without detection.

Accordingly, it is an object of the present invention to provide a locking seal for hasps of various types.

A further object of the invention is to provide a lightweight, inexpensive, tamper-proof easily openable seal adapted for use on various types of hasps and which affords a maximum of security.

These and other objects of the invention will become apparent from the following description in conjunction with the accompanying drawing, in which:

FIG. 1 is an illustration of the use of a seal in accordance wth the present invention on the hasp of a strap on a mail bag;

FIG. 2, an enlarged perspective illustrating the engagement of a seal with the hasp;

FIG. 3, an enlarged section on the line 3—3 of FIG. 2;

FIG. 4, a section on the line 4—4 of FIG. 3;

FIG. 5, a section on the line 5—5 of FIG. 2;

FIG. 6, a perspective partly in section of the seal ready for use;

FIG. 7, an enlarged fragmentary perspective of the free end of the seal;

FIG. 8, an enlarged fragmentary of a modified locking member;

FIG. 9, a section on the line 9—9 of FIG. 8;

FIG. 10, a perspective of a modification;

FIG. 11, an end view of the device of FIG. 10;

FIG. 12, a section through the seal and the hasp of the modification of FIG. 10;

FIG. 13 a perspective of a further modification;

FIG. 14, a section on the line 14—14 of FIG. 12;

FIG. 15, an enlarged fragmentary of the locking member of a further modification; and

FIG. 16, a section on the line 16—16 of FIG. 15.

Briefly stated, the invention includes a seal having an enclosed locking member at one end from which a hasp engaging strap portion extends, the latter having an aperture or notch in its end portion engageable with a locking element in the locking member and having a weakened portion adjacent to the end portion in order that the same may rupture upon the attempt to forcibly remove the locking end portion from the locking member. The strap portion is of relatively small thickness so that it may pass through and engage a relatively small hasp.

With reference to the drawing, the sealing member has a head or locking member **10** and a strap portion **11**. The locking member is illustrated as a cylindrical or disc-shaped body although other shapes may be used. Various materials may be used, polyethylene having been found particularly satisfactory. In one form of the invention the locking member has a disc insert **12** of spring-like material such as metal having an inclined, upstanding finger **13** struck therefrom and projecting upwardly from the bottom of recess **14**, the spring finger extending substantially to the top of the recess.

The strap **11** is integral with and projects from one side of the locking member and is relatively stiff so that in normal unclosed position it tends to remain straight. The strap has a locking aperture **16** or notch at its free end and adjacent thereto a reduced, weakened portion **17** and a projection **18** to assist in pushing the end of the strap into the locking member. Approximately midway of the strap is a reduced portion **20** of substantial length which facilitates bending of the strap during closing of the seal and permits the adjacent parts of the strap to remain in substantially parallel relation when the seal is closed. A third reduced portion **21** is provided adjacent to the locking member which may be relatively easily ruptured when the seal is removed by authorized personnel..

In the use of the device the end portion is inserted through the hasp and then into the opening of the recess **14**. Due to the stiffness of the strap **11**, the application of force to the projection **18** facilitates closing of the device in which the finger **13** enters the aperture **16**. In effecting such engagement the strap rides over the finger **13**, slightly depressing the same, until released by entering the aperture.

In its closed position the seal is neat appearing with the facing parts of the strap substantially parallel and has no exposed parts which invite tampering or attempts to open the same. In the event that the end of the strap is attempted to be forcibly withdrawn from the recess **14**, the strap will rupture at the reduced portion **17** instead of at the aperture **16**, thereby preventing surreptitious opening and simulated closing. The reduced portion **21** facilitates rupture of the seal by authorized personnel.

In the modification of FIGS. 8 and 9 the metal insert is omitted and the locking finger **23** is formed integrally from the material of the locking member.

In the modification of FIGS. 10 and 11 the locking member **30** is formed at substantially right angles to the strap portion **31** and the opening **32** to the locking recess is formed on the opposite side of the locking member. The locking end **33** is similarly formed at substantially right angles to the strap portion in order to facilitate its insertion into the recess.

In order to make the seal more secure against tampering the outer portion **34** of the locking recess is enlarged to receive the shoulders **35** on the locking end adajcent to the tip. When the seal is closed with the finger **13** entering the aperture **36** in the tip the shoulders seat in the outer portion **34** and block the inner recess from possible entry by a tool, thus increasing the seal's security. Ears **37** may be provided at each side adjacent to the tip by means of which the locking end may more easily be pushed into the locking recess. Opening **38** is provided to rupture the strap if attempt is made to forcibly withdraw the locking end from the recess.

In the modification of FIGS. 13–16 a locking member **40** is employed, preferably of the plastic described, having a metal strap member **41** embedded in the locking member **40** at one end. The attachment of the two is made secure by having a struck-up element **42** as in FIG. 13 or an aperture **44** as in FIG. 15, through which the plastic material extends. The embedded end portion of the metal member has a spring finger or locking element **46** struck up therefrom similar to that of the finger **13** previously described. The opposite or free end of the metal strap has an aperture **48** engageable with the finger **46** when the device is closed.

The strap is of spring-like metal which tends to remain

relatively straight and has a protuberance 49 for facilitating closing of the same.

Accordingly, it will be understood that the invention includes a locking member having a smooth exterior and a recessed locking element therein, and a flexible spring-like strap member extending therefrom with an aperture or notch adjacent to its free end in order that when the end of the strap member is inserted into the locking member and the aperture or notch engaged with the element the seal can not be surreptitiously opened. In a modification the locking member has an enlarged outer opening for receiving shoulders on the strap as an additional safeguard against entry.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is illustrated in the drawing and described in the specification, but only as indicated in the accompanying claim.

What is claimed is:

A unitary seal comprising a locking member having enclosed sides and bottom and an opening in its top, said locking member having a relatively thin recess therewithin communicating with said opening, a spring finger projecting across said recess and inclined from its base to its tip away from the opening, said opening being larger in section than the recess and providing a countersunk area, said member having a relatively thin, stiff, flexible strap with a main portion extending from the bottom of the member remote from said opening, the other end of the strap having a locking portion at substantially right angles to the main portion of the strap, said locking portion having an end portion adapted to be snugly received in said recess, said end portion having a slot for receiving said spring finger when the end portion is received in said recess, said locking portion having shoulders adapted to be snugly received within the countersunk portion of said locking member, whereby when said end portion is inserted into the recess said finger will initially be depressed and then received in said aperture and said shoulders will seat in said countersunk portion to prevent insertion of a tool into said recess.

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