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71 Applicant: **Raan, Feng-ping, c/o Yu I-tung P.O. Box 39-54, Taipei, R.O.C. (TW)**

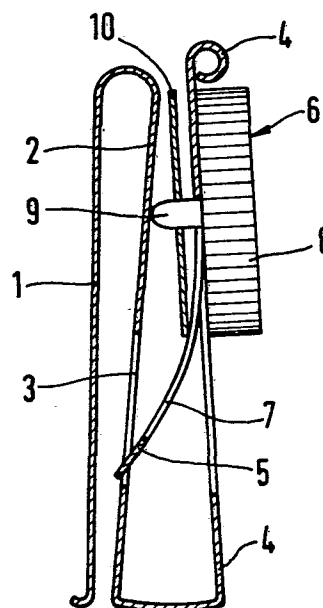
72 Inventor: **Raan, Feng-ping, c/o Yu I-tung P.O. Box 39-54, Taipei, R.O.C. (TW)**

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74 Representative: **Waxweiler, Jean et al, OFFICE DENNEMEYER S.à.r.l. 21-25 Allée Scheffer P.O.Box 41, Luxembourg (LU)**

54 **Safety clamp, especially for keys.**

57 The safety clamp comprises an S shaped main body having a rear part (1), a middle part (2), and a front part (4). A hole (3) is provided in the middle part (2). A spring element (5) fixed to the front part (4) extends in its released state into the hole (3) to clamp a waist belt (not shown) against rear part (1). A knob (6) which may slide along a slot (7) in the front part (4) is adapted to release the spring element in one end position and to withdraw in the other end position said spring element (5) from hole (3) into a substantially co-planar position with front part (4) to remove the safety clamp from the waist belt or/and the keys (not shown) from the safety clamp.



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SAFETY CLAMP, ESPECIALLY FOR KEYS

The invention concerns a safety clamp, especially for keys to be clamped on waist belt.

The object of the invention is to provide a safety clamp, especially for keys, which can not only be easily and immediately be clamped on a waist belt, but which can also firmly clamp and hook an individual key or a series of keys.

According to the invention such a safety clamp comprises a main body in the form of a horizontally laid S, having a rear part, a middle part and a front part, a hole provided in the middle part of the main body, a spring element fixed to the front part extending in the released state into the hole in the middle part and a manually actuatable knob arranged so as to slide along the longitudinal axis of the front part between two end positions and adapted to release said spring element in said one end position and to bring said spring element substantially in a coplanar position with said front part when moved into its other end position.

The spring element may form an integral part with the front part and may be made therefrom by partly punching a tongue therefrom still attached to the front part at one of its ends.

The hole may have a rectangular shape, the width thereof in a direction transverse to said spring element being at least as large as the width of the spring element.

A groove may extend in the longitudinal direction of said front part and said spring element, said knob comprising a head, a shaft fixed to said head and extending through said slot and a disk like element fixed on said shaft at a distance from said head so as to receive the front part and the spring element between the head and the disk like element.

The length of said spring element is such that in the released state it clamps the waist belt against the rear part of the safety clamp.

The invention will now be described by way of example with reference to the accompanying drawing, wherein:

Fig. 1 is a front view of the safety clamp according to the invention;

Fig. 2 is a back view of the safety clamp of Fig.1;
Fig. 3 is a right side view of the safety clamp of
Fig. 1;

Fig. 4 is a left side view of the safety clamp of
5 Fig. 1;

Fig. 5 is a top view of the safety clamp of Fig.1;
Fig. 6 is a bottom view of the safety clamp of Fig.1;
Fig. 7 is a front or back view of the middle part of
the safety clamp of Fig.1;

10 Fig. 8 is a longitudinal section through the safety
clamp of Fig.1, and

Fig. 9 is a front and side view of the knob of the
safety clamp of Fig. 1.

Referring to the Figures, the safety clamp according to
15 the invention comprises a main body having the form of a
horizontally laid S (Fig.8) and comprising a rear part 1,
a middle part 2 and a front part 4. The main body is pre-
ferably made of spring steel. The space between the rear part
1 and the middle part 2 is intended to be fitted over a waist
20 belt (not shown) and to be clamped firmly thereon. In the
lower portion of the middle part 2 there is provided a hole
3 which may be of rectangular shape. The lower portion of
the space between the middle part 2 and the front part 4 is
intended to receive the keys, or other objects, to hold
25 them firmly. The keys or other objects to be held by the
safety clamp should be provided with a ring or hole of suffi-
cient diameter to be fitted over front part 4 into the lower
portion of the space between the middle part 2 and front part
4. Of course the ring may also be of split type with edges
30 overlapping over a length of a full circle.

In the middle portion of the front part 4 there is pro-
vided by means of punching a rectangular spring element 5
attached at one end to the front part and movable about said
end so as to enter into the hole 3 in the middle part 2 of
35 the safety clamp. The spring element 5 is so biased that in
the released state its free end enters into hole 3 and clamps
the waist belt (not shown) against the rear part 1 of the
safety clamp.

On the longitudinal center line of the front part 4

there is provided a slot 7 extending along said center line in the front part 4 and the spring element 5. A knob 6 is provided having a head 8 to which a shaft 9 is fixed and extends through slot 7. A disk like element 10 is fixed to the shaft 9 at a distance from the head 8 of the knob 6 sufficient to allow easy sliding of the knob along the slot 7 from an upper position (Fig.8) to a lower position (refer to Fig.8). The front part 4 and the spring element 5 is located between the head 8 and the disk like element 10 of the head 8.

When the knob 6 is shifted into its upper position (Fig.8), the spring element 5 is released and clamps the waist belt (not shown) against rear part 1 of the safety clamp fitted on the waist belt. In this position of the knob 6, keys hanging from the lower space between the middle part 2 and the front part 4, either by means of a separate ring not shown or a hole in one end portion of the key, are secured against accidental removal from the safety clamp. The safety clamp itself is secured against accidental removal from the waist belt by the clamping action of spring element 5 and rear part 1.

When the knob 6 is displaced to its lower position the spring element is withdrawn from the hole and brought substantially into a coplanar position with the front part 4. The clamping effect of the spring element 5 and the rear part 1 ceases and the safety clamp may be removed from the waist belt. The spring element further does no longer inhibit removal of the keys from the safety clamp.

When the safety clamp is not in use on a waist belt, the knob may be displaced into its lower position so as to prevent removal of the keys by providing a barrier in the space between the middle part and the front part .

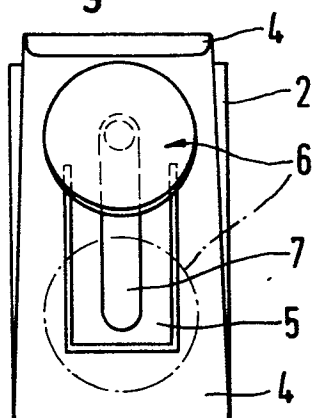
WHAT WE CLAIM IS:

1. Safety clamp, especially for keys, to be clamped on waist belt, characterized by a main body (1,2,4) in the form of a horizontally laid S(Fig.8) having a rear part (1),
5 a middle part (2) and a front part (4), a hole (3) provided in the middle part (2) of the main body, a spring element (5) fixed to the front part (4) extending in the released state into the hole (3) in the middle part (2) and a manually actuatable knob (6) arranged so as to slide along
10 the longitudinal axis of the front part (4) between two end positions and adapted to release said spring element (5) in said one end position and to bring said spring element substantially in a coplanar position with said front part (4) when moved into its other end position.
- 15 2. Safety clamp according to claim 1, characterized in that said spring element (3) forms an integral part with the front part (4) and is made therefrom by partly punching a tongue therefrom still attached to the front part at one of its ends.
- 20 3. Safety clamp according to claim 1 or 2, characterized in that said hole (3) has a rectangular shape, the width thereof in a direction transverse to said spring element (5) being at least as large than the width of the spring element (5).
- 25 4. Safety clamp according to any one of the claims 1 to 3, characterized by slot (7) extending in the longitudinal direction of said front part (4) and said spring element (5), said knob comprising a head (8), a shaft (9) fixed to said head and extending through said slot (7) and a disk like
30 element fixed on said shaft (9) at a distance from said head (8) so as to receive the front part (4) and the spring element (5) between the head (8) and the disk like element (10).
5. Safety clamp according to any one of the claims 1 to 4,
35 characterized in that the length of said spring element (3) is such that in the release state it clamps the waist belt against the rear part (1) of the safety clamp.

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Fig. 1



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Fig. 2

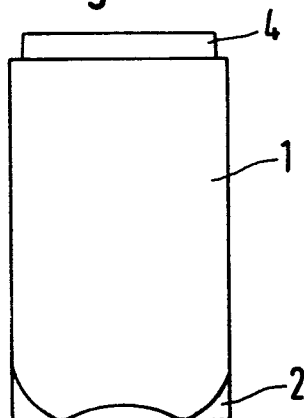


Fig. 3

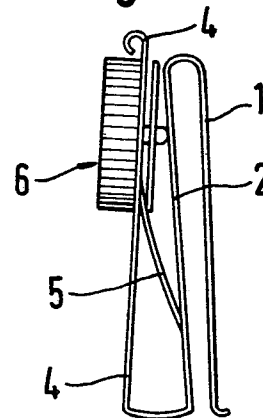


Fig. 4

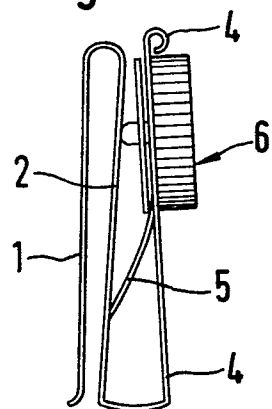


Fig. 5

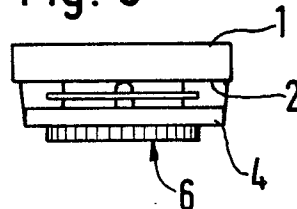


Fig. 7

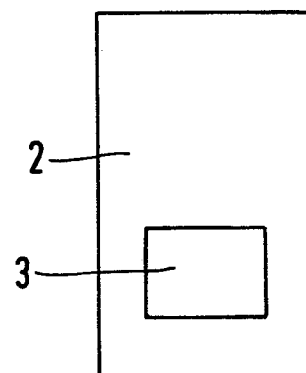


Fig. 6

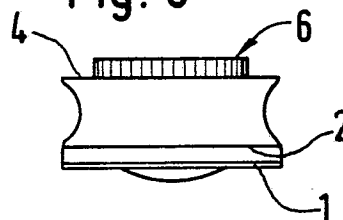


Fig. 8

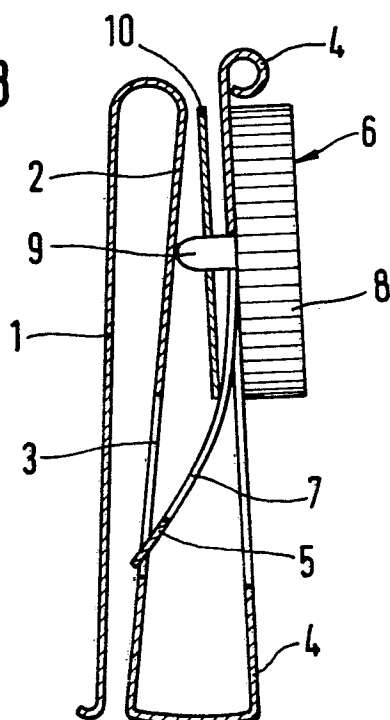
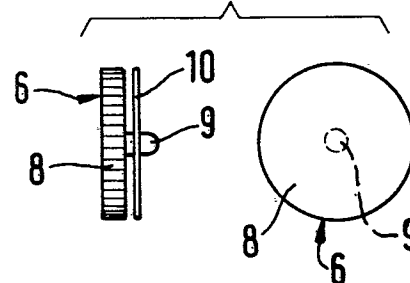


Fig. 9





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EUROPEAN SEARCH REPORT

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Application number

EP 80630022.4

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	DE - A1 - 2 626 992 (PFLUG) * Fig.2 *	1	A 44 B 15/00
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	US - A - 867 255 (DIETZ) * Fig.2 *	1	
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	US - A - 2 593 441 (HAGER) * Fig.3 *	1,4	
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	US - A - 1 609 347 (DEE) * Fig.1-4 *	2,3	TECHNICAL FIELDS SEARCHED (Int.Cl. 3)
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	US - A - 3 519 177 (VOINOVICH) * Fig.2 *	2,3	A 44 B 15/00 A 41 F 9/00 A 44 C 5/18 A 44 C 5/20 A 44 C 5/22 A 45 C 11/32 F 16 B 45/00 A 47 G 29/10
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	US - A - 3 357 615 (HILL) * Fig.1 *	3	
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	US - A - 1 062 653 (KOONS) * Fig.2 *	4	
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	US - A - 3 815 392 (LAUFER) * Fig.2-4 *	4	CATEGORY OF CITED DOCUMENTS
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	US - A - 1 459 674 (JABNER) * Fig.1 *	4	X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
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	US - A - 1 539 220 (TAYLOR) * Fig.2 *	5	
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X	The present search report has been drawn up for all claims		&: member of the same patent family, corresponding document
Place of search VIENNA		Date of completion of the search 27-11-1980	Examiner NETZER



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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	GB - A - 28 039 (A.D.1913) (TOCE) * Fig.3 * ----	5	
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)