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Amended claims in accordance with Rule 137(2) EPC.

(54) MINI PROTECTIVE KEY

(57) A small protective key (10) is provided for placing distance between a user and a touch surface, thereby avoiding direct contact between the user's skin and the touch surface. The protective key (10) helps protect the user from exposure to viruses or bacteria that may be present on the touch surface. The protective key (10) can be formed of an antimicrobial material that resists accumulation of viruses and bacteria. The protective key (10) comprises an elongated shaft (12) having a first end (14), a second end (16), a first side (18), a second side (20), a top surface (22) and a bottom surface (24). The protective key further comprises an opening (26) at the first end (14) of the elongated shaft (12) for receiving a carrier, a touch surface (28) at the second end (16) of the elongated shaft (12), a first abrasive region (38) covering at least a portion of the top surface (22) and a second abrasive region (40) covering at least a portion of the bottom surface (24).

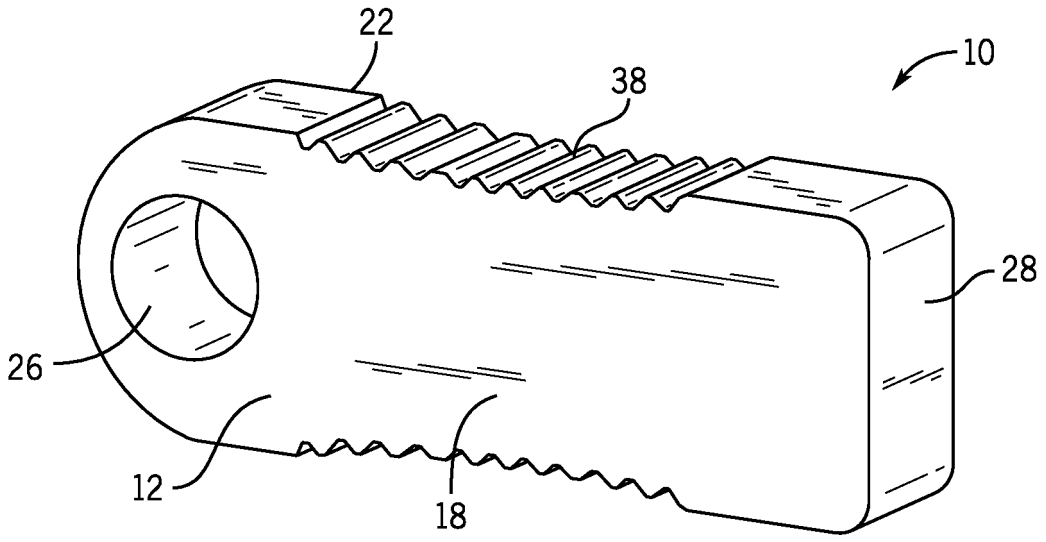

FIG. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention is directed to a small protective key that is useful for protecting a user from a contact surface such as a doorbell, keypad or touch pad, thus avoiding direct contact between the user's skin and bacteria or viruses that may be present on the contact surface.

BACKGROUND OF THE INVENTION

[0002] The coronavirus pandemic has generated a need or desire for gloves, masks and other protective equipment that prevent direct contact between consumers and various articles that form part of their daily environment. This need or desire is based on concerns that viruses may live for measurable, often extended periods of time on various surfaces. Surfaces that have typically required direct contact with a user's skin include keypads on ATM machines, electronic signature pads, touch pads used for credit card processing, doorbells, and various objects. Many of these items require only a pointed touch or pressing. While protective gloves are commonly used, the gloves themselves may accumulate viruses and bacteria that can be transferred to the user's skin or clothing when the gloves are removed or manipulated. There is a need or desire for a protective device that not only avoids direct skin contact between the user and various surfaces but is formed of an antimicrobial material that resists the accumulation of viruses and bacteria.

SUMMARY OF THE INVENTION

[0003] The present invention is directed to a small protective key that can be used to protect a user from direct skin exposure to a contact surface. The contact surface can be a keypad, touch pad, doorbell, button or other surface that requires only a touch or lightly applied pressure from the user. The protective key not only places distance between its user and the contact surfaces of interest but can be formed of an antimicrobial material that resists accumulation of viruses and bacteria on the protective key surfaces.

[0004] In one embodiment, the protective key includes:

an elongated shaft having a first end, a second end, a first side, a second side, a top surface and a bottom surface;
an opening at the first end of the elongated shaft for receiving a carrier;
a touch surface at the second end of the elongated shaft;
a first abrasive region covering at least a portion of the top surface; and
a second abrasive region covering at least a portion of the bottom surface.

[0005] In another embodiment, the protective key includes:

an elongated shaft having a first end, a second end, a first side, a second side, a top surface and a bottom surface;
a carrier opening at the first end of the elongated shaft;
a touch surface at the second end of the elongated shaft;
a first corrugated region covering at least a portion of the top surface; and
a second corrugated region covering at least a portion of the bottom surface.
wherein the protective key comprises an antimicrobial alloy.

[0006] In another embodiment, the protective key includes:

an elongated shaft having a first end, a second end, a first side, a second side, a top surface and a bottom surface;
a carrier opening at the first end of the elongated shaft;
a touch surface at the second end of the elongated shaft;
a first abrasive region covering about 25% to about 75% of the top surface; and
a second abrasive region covering about 25% to about 75% of the bottom surface;
wherein the protective key is formed using an antimicrobial alloy comprising about 50% to about 80% by weight copper and about 20% to about 50% by weight zinc.

[0007] With the foregoing in mind, it is a feature and advantage of the invention to provide a protective key that maintains distance and avoids skin contact between a user and a surface such as a keypad, credit card processing pad, doorbell, button, and other touch surfaces.

[0008] It is also a feature and advantage of the invention to provide a protective key that is formed using an antimicrobial material that resists accumulation of viruses and bacteria.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Fig. 1 is a perspective view of the protective key according to one embodiment of the invention.
Fig. 2 is a first side view of the protective key of Fig. 1.
Fig. 3 is a second side view of the protective key of Fig. 1.
Fig. 4 is a top view of the protective key of Fig. 1.
Fig. 5 is a bottom view of the protective key of Fig. 1.

Fig. 6 is a left end view of the protective key of Fig. 1.
Fig. 7 is a right end view of the protective key of Fig. 1.
Fig. 8 is a perspective view of the protective key showing one use environment, in which the protective key is attached to a keychain (shown in dotted lines).

DETAILED DESCRIPTION OF THE INVENTION

[0010] Figs. 1-8 illustrate of one embodiment of a small protective key of the invention, which is designed to protect a user from direct exposure to a contact surface. The protective key 10 can be fitted to a keychain ring 52 as shown in Fig. 8, or to another suitable carrier, and can be small enough so that it does not occupy significant space in the user's pocket. The protective key 10 includes an elongated shaft 12 having a first end 14, a second end 16, a first side 18, a second side 20, a top surface 22 and a bottom surface 24. A carrier opening 26 is located at the first end 14 of the elongated shaft 12. The carrier opening 26 can receive a keychain as shown in Fig. 8, a string or elastic band attached to a belt, or another suitable carrier. A touch surface 28 is located at the second end 16 of the elongated shaft 12. The touch surface 28 is shown as a flat surface that is perpendicular to the nearest flat portion 30 of the top surface 22 and the nearest flat portion 32 of the bottom surface 24. In the embodiment shown, the touch surface 28 is joined to the top surface 22 by a beveled corner 34 and is joined to the bottom surface 24 by a beveled corner 36. In addition to being flat as shown, the touch surface 28 can be curved, pointed, angled, or can have any suitable configuration.

[0011] Referring to Figs. 2 and 3, the elongated shaft 12 has a length extending from the outermost point 44 of the first end 14 to a corresponding outermost point 46 on the second end 16, a height extending from the outermost planar portion 30 on the upper surface 22 to the outermost planar portion 32 on the lower surface 24, and a ratio of length to height of about 1.25:1 to about 2.75:1, suitably about 1.5:1 to about 2.5:1, or about 2:1. This relatively small length to height ratio enables the protective key 10 to fit easily and comfortably into pockets and small purses, while allowing enough length to place some distance between the user and the contact surface that is being engaged by the touch surface 28.

[0012] The carrier opening 26 need only be large enough to receive a key ring, string, elastic band or other suitable carrier and can be circular (as shown), elliptical, oval, square, rectangular or any suitable shape. In one embodiment, shown in Fig. 8, the protective key 10 of the invention is sized to fit comfortably on a key ring 52 with or without a plurality of additional keys 54. In another embodiment, the protective key 10 can be sized to fit on a string or rope, suitably an elastic band that can be attached to a user's belt or belt loop. In another embodiment, the protective key 10 can be sized and designed to fit in a Keysmart® pocket key organizer, such as shown in U.S. Design Patent D705,533 to Tunney, U.S. Design Patent D754,427 to Tunney, U.S. Patent D754,428 to Tunney, and/or U.S. Patent D705,533 to Tunney, each of which is incorporated herein by reference. The protective key 10 of the invention can be sized and designed for a wide variety of uses ranging from small to large, ranging from light touch to heavy pressure, and requiring any degree of strength and integrity.

[0013] As shown in Figs. 1-5, a first abrasive region 38 covers at least a portion of the top surface 22 and a second abrasive region 40 covers at least a portion of the bottom surface 24 of the elongated shaft 12. The first and second abrasive regions 38 and 40 can be formed of a plurality of corrugations 50 in the top and bottom surfaces as shown, or can be formed using any rough, serrated, or textured surface design. The abrasive region 38 can cover up to 100% of the top surface 22, or about 25% to about 75% of the top surface 22, or about 40% to about 60% of the top surface 22. The abrasive region 40 can cover up to 100% of the bottom surface 24, or about 25% to about 75% of the bottom surface 24, or about 40% to about 60% of the bottom surface 24.

[0014] The abrasive regions 38 and 40 are used as gripping regions for a user to grip the protective key 10 and urge the touch surface 28 toward the contact surface of a doorbell, keypad, touch pad or other object. To this end, when the first and second abrasive regions 38 and 40 are corrugated regions, the corrugations 50 may extend from the first side 18 to the second side 20 of the elongated shaft 12 and can be perpendicular to the first side 18 and the second side 20. Further to this end, the top surface 22 can be designed such that one or more flat portions 30 and 31 of the top surface 22 define a plane and the first abrasive region 38 is located inward from the plane. The bottom surface 24 can be similarly designed such that one or more flat portions 32 and 33 of the bottom surface 24 define a plane and the second abrasive region 40 is located inward from the plane.

[0015] The protective key 10 of the invention is suitably formed using an antimicrobial alloy that resists or prevents accumulation of virus and bacteria on the protective key surfaces. One suitable antimicrobial material is an alloy of copper and zinc. The antimicrobial alloy can include about 50% to about 80% by weight copper and about 20% to about 50% by weight zinc, suitably about 60% to about 70% copper and about 30% to about 40% by weight zinc. Other antimicrobial materials can also be used to form the protective key of the invention.

[0016] The embodiments of the invention described herein are exemplary. Various changes and modifications can be made without departing from the spirit and scope of the invention. The scope of the invention is defined by the appended claims, and all changes that fall within the meaning and range of equivalents are intended to be embraced therein.

Claims

1. A protective key for protecting a user from direct exposure to a contact surface, comprising:

   an elongated shaft having a first end, a second end, a first side, a second side, a top surface and a bottom surface;
   an opening at the first end of the elongated shaft for receiving a carrier;
   a touch surface at the second end of the elongated shaft;
   a first abrasive region covering at least a portion of the top surface; and
   a second abrasive region covering at least a portion of the bottom surface.

2. The protective key of Claim 1, comprising an antimicrobial alloy.

3. The protective key of Claim 2, wherein the antimicrobial alloy comprises about 50% to about 80% by weight copper and about 20% to about 50% by weight zinc, preferably about 60% to about 70% by weight copper and about 30% to about 40% by weight zinc.

4. The protective key of any of Claims 1 to 3, wherein portions the top surface define a plane between the first end and the second end of the elongated shaft and the first abrasive region is indented relative to the plane.

5. The protective key of any of Claims 1 to 4, wherein portions the bottom surface define a plane between the first end and the second end of the elongated shaft and the second abrasive region is indented relative to the plane.

6. The protective key of any of Claims 1 to 5, wherein the first abrasive region comprises corrugations in the at least a portion of the top surface.

7. The protective key of Claim 6, wherein the corrugations extend from the first side to the second side of the elongated shaft.

8. The protective key of any of Claims 1 to 7, wherein the second abrasive region comprises corrugations in the at least a portion of the bottom surface.

9. The protective key of Claim 8, wherein the corrugations extend from the first side to the second side of the elongated shaft.

10. The protective key of Claim any of Claims 1 to 9, wherein the touch surface is generally perpendicular to adjacent portions of the top surface and the bottom surface.

11. The protective key of any of Claims 1 to 10, further comprising a first beveled portion joining the touch surface to the top surface and a second beveled portion joining the touch surface to the bottom surface.

12. The protective key of any of Claims 1 to 11, wherein the elongated shaft has a length extending from the first end to the second end and a height extending from the top surface to the bottom surface, and wherein a ratio of the length to the height is about 1.5:1 to about 2.5:1, preferably about 2:1.

13. The protective key of any of Claims 1 to 12, wherein the first abrasive region covers about 25% to about 75% of the top surface.

14. The protective key of any of Claims 1 to 13, wherein the second abrasive region covers about 25% to about 75% of the bottom surface.

Amended claims in accordance with Rule 137(2) EPC.

1. A protective key for protecting a user from direct exposure to a contact surface, comprising:

   an elongated shaft (12) having a first end (14), a second end (16), a first side (18), a second side (20), a top surface (22) and a bottom surface (24);
   an opening (26) at the first end of the elongated shaft (12) for receiving a carrier;
   a touch surface (28) at the second end (16) of the elongated shaft (12);
   characterized in that the top surface (22) includes at least one flat portion (30) and a first abrasive region (38), the bottom surface (24) includes at least one flat portion (34) and a second abrasive region (40), and the touch surface (28) includes a point (46) that is perpendicular to the at least one flat portion (30) of the top surface (22) and the at least one flat portion (32) of the bottom surface (24), whereby
   the first abrasive region (38) covers at least a portion of the top surface (22); and the second abrasive region (40) covers at least a portion of the bottom surface (24).

2. The protective key of Claim 1, comprising an antimicrobial alloy.

3. The protective key of Claim 2, wherein the antimicrobial alloy comprises 50% to 80% by weight copper and 20% to 50% by weight zinc, preferably 60% to 70% by weight copper and 30% to 40% by weight zinc.

4. The protective key of any of Claims 1 to 3, wherein portions (30; 31) the top surface (22) define a plane between the first end (14) and the second end (16) of the elongated shaft (12) and the first abrasive region (38) is indented relative to the plane.

5. The protective key of any of Claims 1 to 4, wherein portions (32; 34) of the bottom surface (24) define a plane between the first end (14) and the second end (16) of the elongated shaft (12)and the second abrasive region (40) is indented relative to the plane.

6. The protective key of any of Claims 1 to 5, wherein the first abrasive region (38) comprises corrugations (50) in the at least a portion of the top surface (22).

7. The protective key of Claim 6, wherein the corrugations (50) in the first abrasive region (38) extend from the first side (18)to the second side (20)of the elongated shaft (12).

8. The protective key of any of Claims 1 to 7, wherein the second abrasive region (40) comprises corrugations (50) in the at least a portion of the bottom surface (24).

9. The protective key of Claim 8, wherein the corrugations (50) in the second abrasive region (40) extend from the first side (18) to the second side (20) of the elongated shaft (12).

10. The protective key of Claim any of Claims 1 to 9, wherein the touch surface (28) is generally perpendicular to adjacent flat portions (30; 32) of the top surface (22) and the bottom surface (24).

11. The protective key of any of Claims 1 to 10, further comprising a first beveled portion (34) joining the touch surface (28) to the top surface (22) and a second beveled portion (36) joining the touch surface (28) to the bottom surface (24).

12. The protective key of any of Claims 1 to 11, wherein the elongated shaft (12) has a length extending from the first end (14) to the second end (16) and a height extending from the top surface (22)to the bottom surface (24), and wherein a ratio of the length to the height is 1.5:1 to 2.5:1, preferably 2:1.

13. The protective key of any of Claims 1 to 12, wherein the first abrasive region (38) covers 25% to 75% of the top surface (22).

14. The protective key of any of Claims 1 to 13, wherein the second abrasive region (40) covers 25% to 75% of the bottom surface(24).

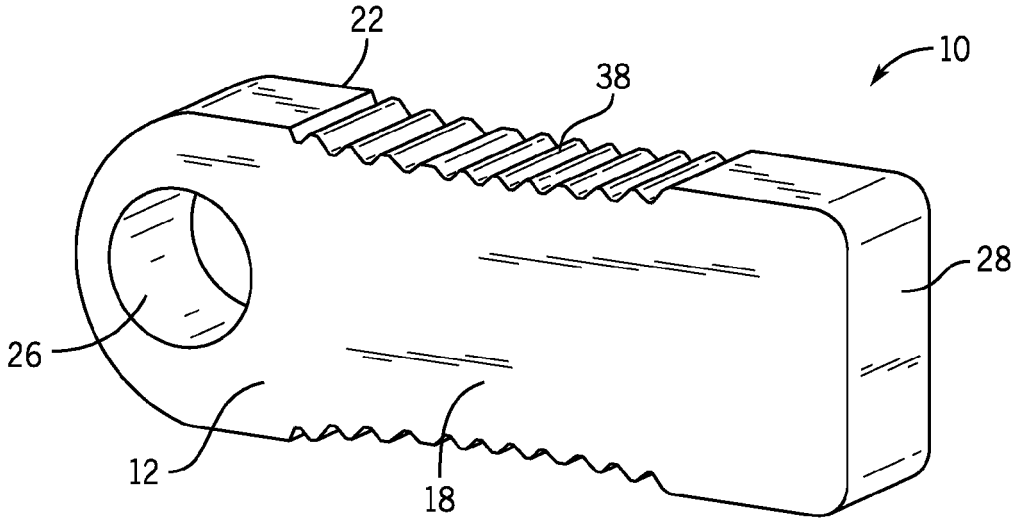

FIG. 1

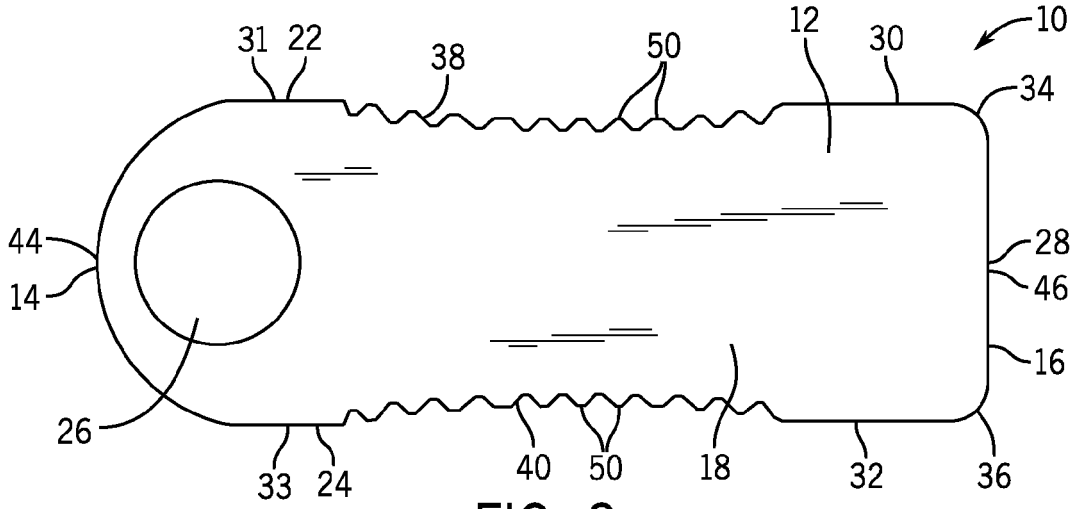

FIG. 2

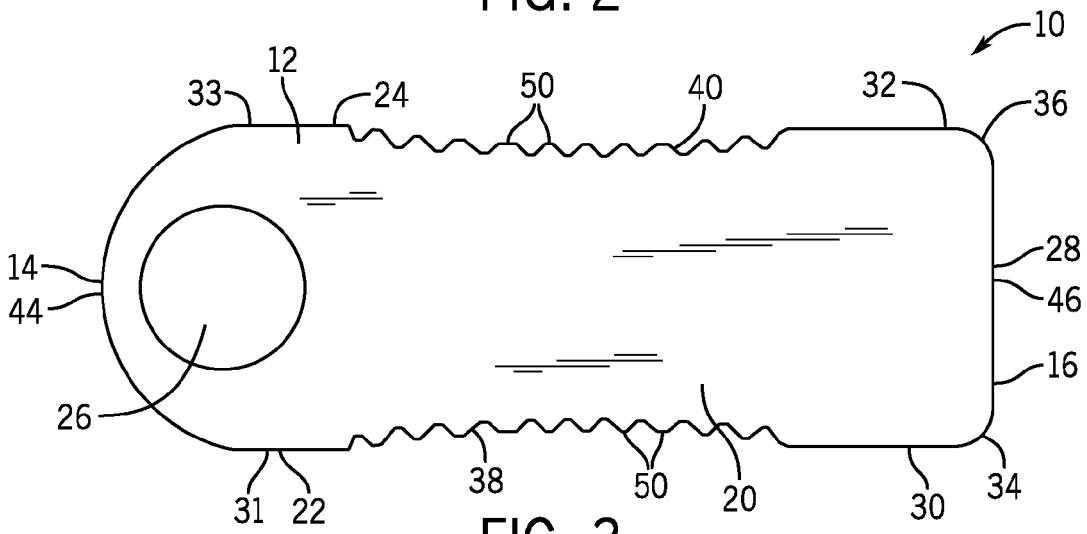

FIG. 3

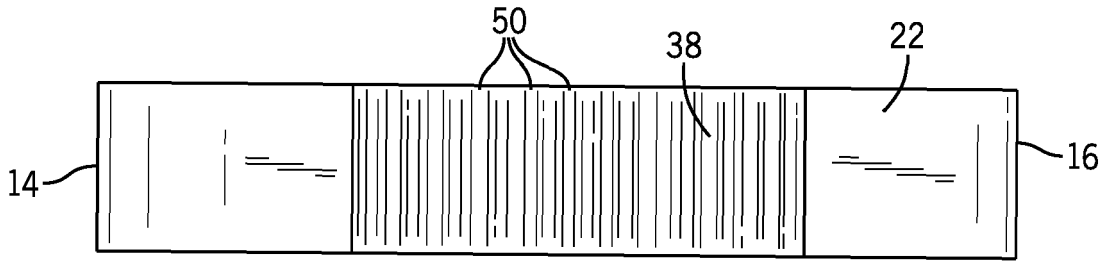

FIG. 4

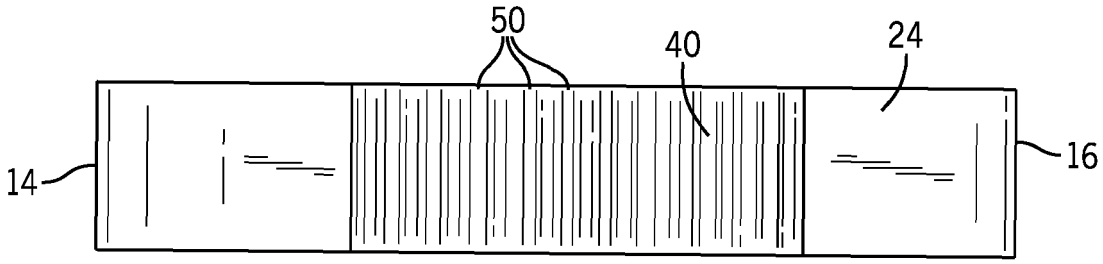

FIG. 5

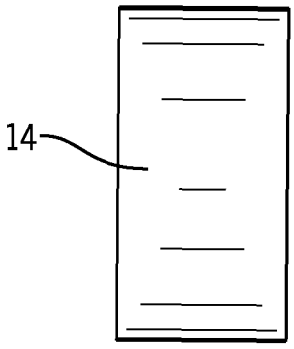

FIG. 6

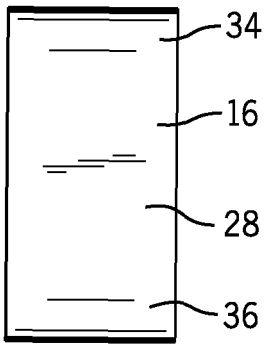

FIG. 7

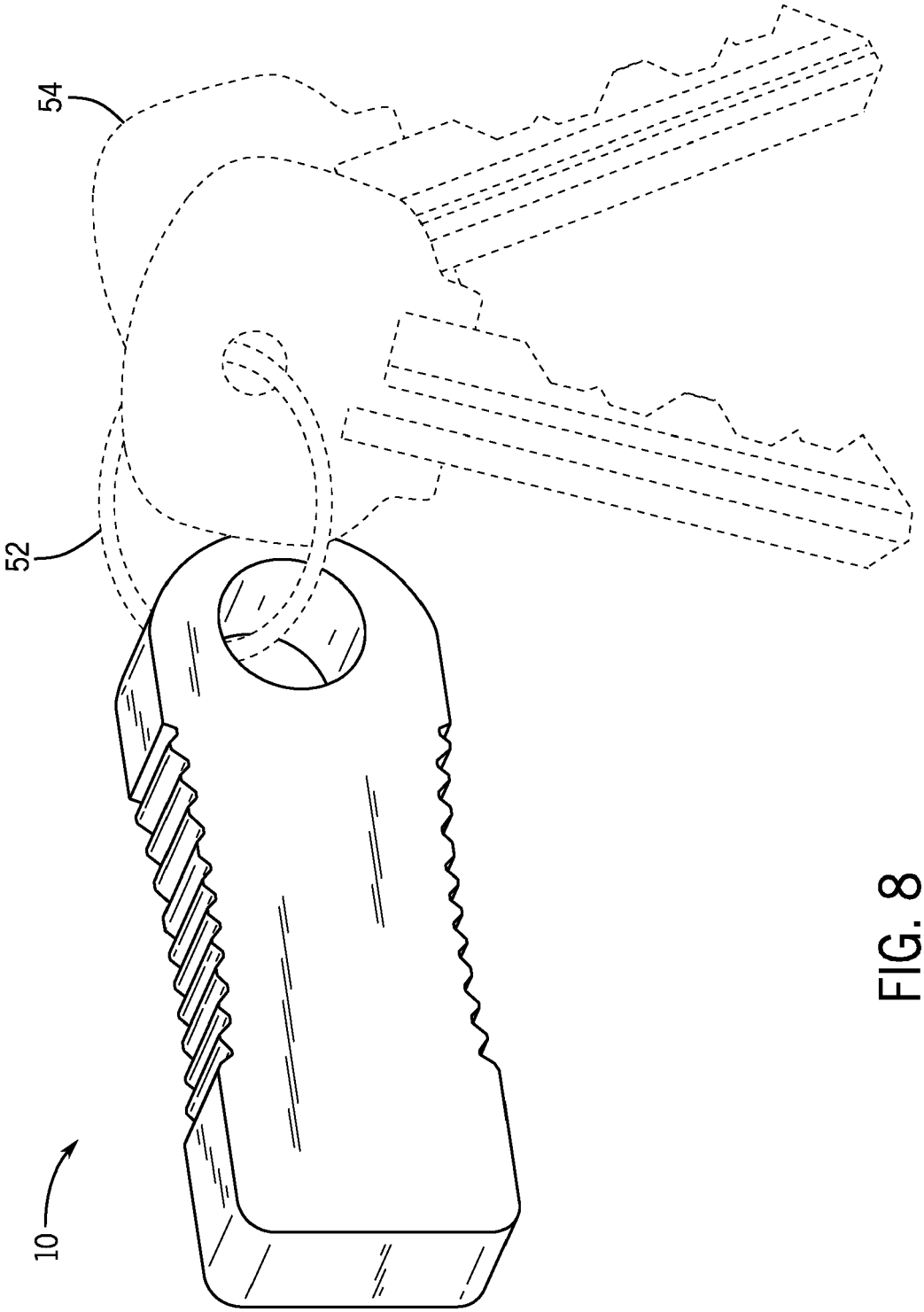

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 20 18 9236

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 99/14548 A1 (TAYLOR ROY JOHN [GB]) 25 March 1999 (1999-03-25) * abstract; figure 2 * * page 4, line 27 - page 5, line 4 * * page 5, line 22 - line 26 * * page 6, line 1 - line 24 *	1-14	INV. A44B15/00
X	DE 20 2018 005544 U1 (KOBUKIDO UG HAFTUNGSBESCHRAENKT [DE]) 7 May 2019 (2019-05-07) * the whole document *	1,4-6,8, 10,13,14	
A	ES 1 245 846 U (GARCIA MONROY LAIA [ES]; NAVARRO GIL CARLOS GUSTAVO [ES]) 6 May 2020 (2020-05-06) * the whole document *	1-14	
A	GB 2 474 717 A (TROTT JAMES HARRY [GB]) 27 April 2011 (2011-04-27) * abstract; figures 1-6 *	1-14	
			TECHNICAL FIELDS SEARCHED (IPC) A44B A61F G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 January 2021	Thielgen, Robert

CATEGORY OF CITED DOCUMENTS

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14-01-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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GB 2474717 A	27-04-2011	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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- US D705533 S **[0012]**