Jan. 22, 1963 M. E. BITTING 3,074,399

PROTECTOR

Filed Aug. 2, 1961

FIG. 1

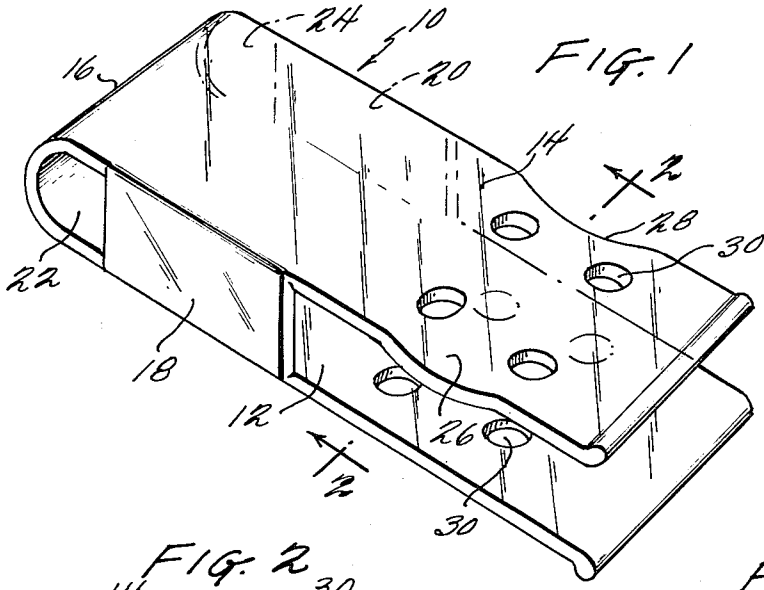


FIG. 2

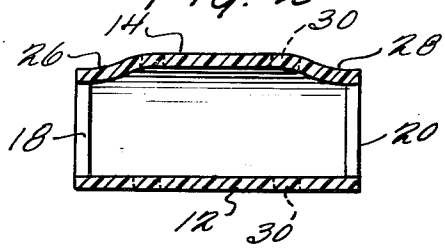


FIG. 3

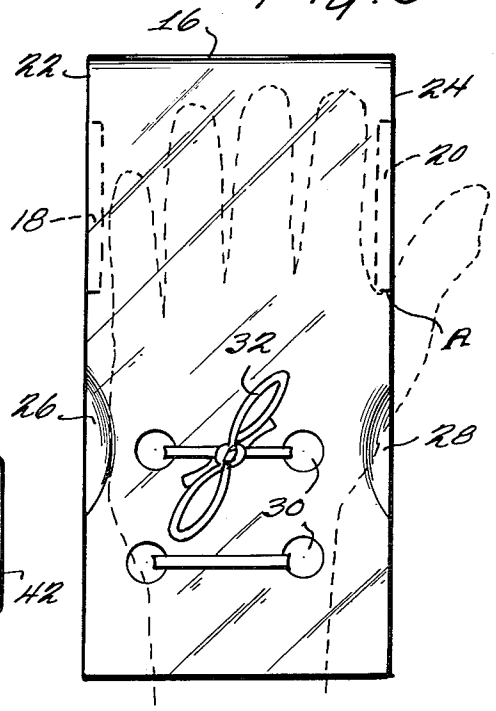
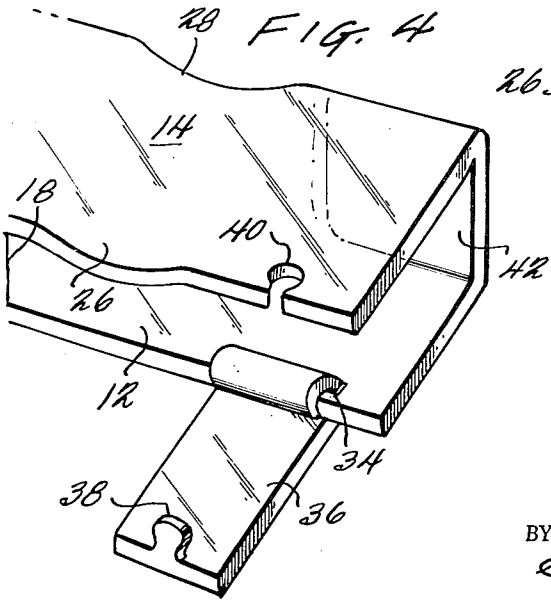


FIG. 4



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PROTECTOR

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This invention relates to a guard for the protection of fingers or hands. More specifically, the invention relates to a guard for the protection of hand or finger injuries due to sprains burns, fractures, etc., particularly of the four digits of the hand and also exhibits utility in instances where the hand itself has been burned, fractured or otherwise injured.

In distinction to many such protectors which have previously been known and used, the protector or guard of the present invention may be employed to protect the injured portion of the hand or finger even though the latter is encased in a splint or the like. Thus, the hand protector which forms the present invention may be used in conjunction with a primary remedy or treatment for the injured portion, wherein the primary treatment may be in the form of a splint, the application of a salve, in the case of burns, or any other treatment for the injured portion.

Another advantage exhibited over similar devices known in the prior art resides in the ability of either the patient or doctor to instantly ascertain whether the primary treatment, such as splints, salves, or the like, has remained correctly in place over a period of time or has become ineffective due to evaporation, contact with water or other reasons. This advantage is accomplished by an embodiment of the invention wherein transparent plastic or similar material is used for the manufacture and fabrication of the guard. Further, it is not necessary to remove the hand protector of the present invention in order to view the injured hand by X-radiation since the transparent material from which the device may be fabricated may have a low X-radiation absorption coefficient.

Still another advantage exhibited by the present hand protector is its ability to give the injured area proper ventilation, the protector of the present invention in no way interfering with the ventilation which the injured portion of the hand would receive without the protector.

Still another advantage exhibited by the present invention is its facility of manufacture. The geometry of the instant hand protector lends itself to a variety of simple methods of fabrication, such as injection molding, and the use of complex contours is reduced to a minimum.

Yet another advantage of the hand protector of this invention is its transmission of accidental bumps over a large surface of the hand and to the wrist, thus reducing the pressure on the injured hand portion or finger caused by such bumps.

Another advantage of the guard of this invention is particularly noted in those cases where a fingertip portion, such as a fingernail, has been injured. By virtue of the guard's cooperation with the web extending between the thumb and the forefinger, the guard is absolutely precluded from coming into contact with the injured fingertip or fingernail.

These and other advantages of this hand protector will become apparent from the following description thereof when considered in connection with the accompanying drawing in which like reference numerals designate like parts throughout the FIGURES thereof and wherein:

FIGURE 1 is a perspective view of the finger and hand protector of this invention;

FIGURE 2 is a view along line 2—2 of FIGURE 1;

FIGURE 3 illustrates the protector of FIGURE 1 applied to a hand; and

FIGURE 4 illustrates a modification of the wrist portion of the protector of FIGURE 1.

Turning now to FIGURE 1 of the drawings, the numeral 10 denotes the hand and finger protector of the present invention and includes two substantially flat, parallel elements 12 and 14 joined by a bight section 16. Thus in one longitudinal cross section the device is U-shaped. If desired, the section 16 may be flat, giving rise to a guard channel-shaped in cross section. Spaced from the bight portion 16 are two wall portions 18 and 20 which each extend from the top or upper flat portion 14 to the bottom or lower flat portion 12. Spaces 22 and 24 are thereby defined between the bight portion 16 and the wall portions 18 and 20, respectively.

The numerals 26 and 28 denote curved portions, on the upper member 14, which are directed towards the lower member 12. As shown in FIGURE 2 of the drawings, the curved portions 26 and 28 form, in combination with the central part of the upper portion 14, a generally curved or arcuate section which faces the lower section 12. The numerals 30 denote a plurality of apertures at the end of each of the sections 12 and 14. The apertures 30 in the upper portion 14 are aligned with the apertures 30 in the lower portion 12.

Turning now to FIGURE 3 of the drawings, the hand and finger protector of this invention is shown in its relation to a hand. The left hand is shown in phantom lines and it will be observed that the thumb extends outwardly, as normally, and lies between the open end of the protector and the edge of the side wall 20 nearest the open end. The depressions 26 and 28 lie on top of the wrist. The numeral 32 denotes a string or strap or the like which passes through the mating apertures 30 on the lower portion 12 and the upper portion 14 and passes around the sides of the wrist. It will be observed that by virtue of the depressed or curved segments 26 and 28 of upper portion 14, the upper contour of the wrist is engaged, thus aiding in preventing slippage of the device away from the indicated position of the hand relative to it.

The letter A in FIGURE 3 denotes that portion of the hand, commonly known as the web of the hand, where the thumb is joined to the palm of the hand. It will be observed that hand portion A is in contact with the edge of wall 20 nearest the open end of the guard. Thus a force, such as an accidental bump, jar or the like, acting on the bight portion 16 downward in FIGURE 3, cannot displace the guard and hence bight portion 16 relative to the hand so as to cause the bight portion to come into contact with the tips of any finger. A space between the fingertips and bight portion 16 is therefore always maintained, by virtue of the contact or abutment of the web bridging the thumb and forefinger and the edge of wall 20.

From an inspection of FIGURE 3, it will be further observed that the hand is visible while the protector is being worn and that by virtue of the spaces 22 and 24 it may be possible, if desired, to apply medication in the form of a salve, liquid or the like to any of the injured fingers without the necessity of removal of the protective device from the hand. A further advantage of such a construction resides in the ability of the injured person to scratch any one of the fingers through the apertures 22 and 24 or through the openings between the portions 14 and 12, below the walls 18 and 20. This is a particularly advantageous feature of the present invention since the ability to scratch an itchy portion of any of the fingers does not require the removal of the entire protective device.

The hand and finger protector of this invention may

be fabricated by forming a suitable die and employing injection molding. From a consideration of the completed article, it is believed obvious that one skilled in this art could form a suitable die and further that the steps necessary for the carrying out of an injection molding process are well known and hence it is deemed unnecessary to elaborate upon these matters here.

Turning now to FIGURE 4 of the drawings, an embodiment of the invention is illustrated which employs a different manner of fixing the hand and finger protector of this invention to the wearer's wrist. The numeral 34 denotes a hinge affixed in any suitable manner to the left portion of the open end of lower section 12 of the hand protector. The hinge 34 may be formed from the same material as the rest of the protector, e.g., of plastic or it may be different material, e.g., metal. The numeral 36 denotes a flap affixed to hinge 34 and is provided with a nodule or projection 38, preferably integral therewith. The upper portion 14 is provided at its rearward end with a complementary recess 40 adapted to engage the nodule or projection 38 when the flap 36 is swung into engagement therewith. The numeral 42 denotes a wall extending between the upper member 14 and lower member 12 at the rearward portion of the hand protector and on the opposite side thereof.

In this embodiment of the invention, the wearer or an attendant grasps the hand protector and applies it to the injured hand as in the first embodiment. In order to secure the protector to the wrist, the flap 36 is merely swung until the nodule 38 engages the recess 40. The wall 42 and flap 36 preclude the disengagement of the protector from the wrist. The advantage of this embodiment of the present invention is that the wearer is able to both apply and remove the hand protector by himself, it being sometimes difficult to thread a string or the like through the holes 30 of the embodiment in FIGURE 1 and to tie the ends of the string together to hold the protector on the wrist. In this second embodiment, the wearer merely snaps the flap 36 into and out of engagement with the top portion 14 with the uninjured hand.

If desired, the second embodiment may be altered so as to exhibit one or two aligned apertures in lieu of the flap 36, while retaining the additional side wall 42.

Obviously, many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

I claim:

1. A hand and finger guard comprised of a rigid substantially U section member having a width sufficient to span at least the injured fingers of a hand, the bight of the U spacing apart the shanks of said member by the thickness of a hand, the length of said shanks being greater than the length of the fingers of the hand with which they are to be used, the bight of the U enveloping the fingertips, means interconnecting said shanks and spanning at least a portion of the space between the long edges of said shanks, an edge of said means being so positioned as to coact with the web between the forefinger and thumb to prevent jamming of the ends of the fingers against the inner surface of the bight, and means coacting with a portion of said shanks more remote from said bight than said space spanning means for maintaining the guard on the hand.

2. A hand and finger guard comprised of a rigid substantially U section member having a width sufficient to span at least the injured fingers of a hand, the bight of the U spacing apart the shanks of said member by the thickness of a hand, the length of said shanks being greater than the length of the fingers, the bight of the U enveloping the fingertips, means integral with said shanks for spanning at least a portion of the space between the long edges of said shanks, the edge of said spanning means remote from the bight being so located as to coact with the web between the thumb and forefinger of a hand to prevent the fingers from jamming against the inner surface of the bight, said shanks having lace receiving apertures therein more remote from said bight than said integral means.

3. The hand and finger guard of claim 1 wherein the rigid member is formed of transparent plastic.

4. A hand and finger protector to prevent accidental contact to injured portions of the hand or finger, including two parallel and spaced elements secured together at one end of each thereof, means carried by one of said elements to engage the web of the hand and to prevent sliding of the hand relative to the protector, said web engaging means comprising side walls extending from one of the said parallel elements to the other, the said side walls being spaced from the joined ends of the said parallel elements, and means adjacent the open ends of said parallel elements to secure the protector to a wrist.

5. A hand and finger protector to prevent accidental contact to injured portions of the hand or fingers, including two flat, parallel and spaced elements secured together at one end of each thereof, means carried by one of the said elements to engage the web of the hand and to prevent sliding of the hand relative to the protector and means to secure the protector to the wrist comprising a first wall extending between the said spaced elements at one edge of each adjacent the unjoined ends of the said spaced elements and a second wall opposite the first wall, said second wall being pivoted to one of the said spaced elements and swingable to a latched position on the other said spaced element.

References Cited in the file of this patent

UNITED STATES PATENTS

703,211	Morgan	June 24, 1902
1,189,333	Younglove	July 4, 1916
1,375,690	George	Apr. 26, 1921
2,643,388	Curtis	June 30, 1953

FOREIGN PATENTS

292,339	Great Britain	June 21, 1928