Jan. 8, 1952 G. E. FROELICH 2,581,646

CLAMPED HOLD-DOWN STRAP

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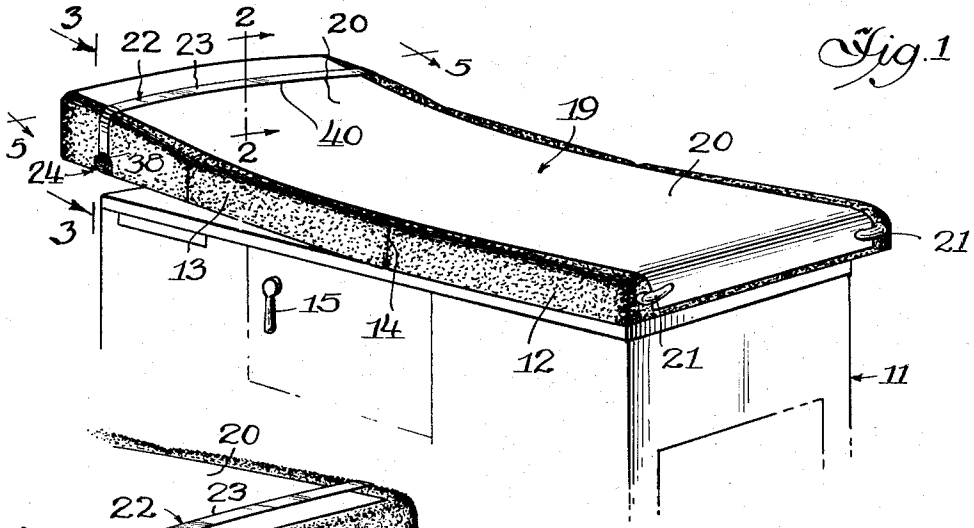


Fig. 1

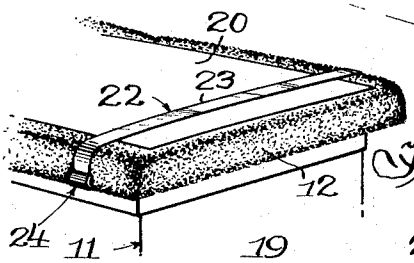


Fig. 7

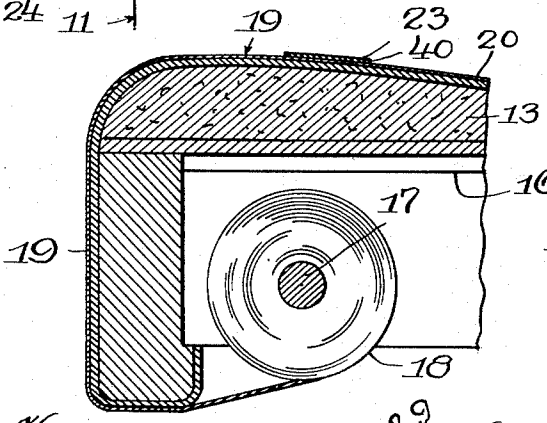


Fig. 2

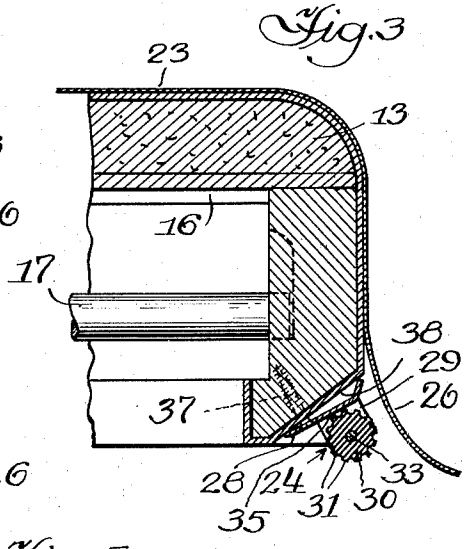


Fig. 3

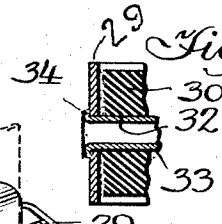


Fig. 6

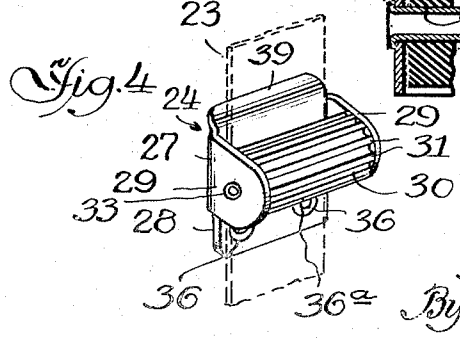


Fig. 4

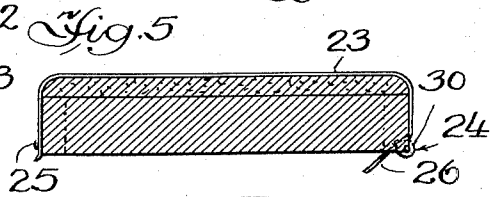


Fig. 5

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CLAMPED HOLD-DOWN STRAP

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3 Claims. (Cl. 311—10)

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This invention relates to a clamping device, more particularly to a combined hold-down and tear-off device for sanitary paper coverings, for example, for a physician's examining table or the like, in which a web of paper is drawn onto the padded upper surface of the table rest member from a suitably mounted supply roll and upon which the patient may recline, thus avoiding direct contact with the table top surface and assuring enhanced cleanliness and sanitation, it being the practice to draw from the supply roll a new and fresh length of paper for each patient, the used length being torn off and discarded.

A combined hold-down and tear-off strap for such a table is shown in patent to Worth, No. 2,339,828, and in one important aspect, the present invention aims to provide an improved clamp for a device of the class just described which has enhanced efficiency and sightliness.

These and other objects and advantages will be apparent from the following description, taken together with the accompanying drawings, of an illustrative embodiment of the invention, and in which drawings—

Figure 1 is a perspective view of a physician's examining table with the device of the present invention applied thereto;

Figure 2 is an enlarged fragmentary sectional view taken on the line 2—2 of Fig. 1 showing a paper roll mounted in the rest member;

Figure 3 is a fragmentary enlarged section taken on the line 3—3 of Fig. 1 with parts in alternative positions and omitting the paper supply roll;

Figure 4 is an enlarged perspective view of the gripping member in separated relation with a fragment of the strap received therein indicated in broken lines;

Figure 5 is a cross-section through the rest member on the scale of Fig. 1 and taken on the line 5—5 thereof;

Figure 6 is an enlarged fragmentary axial section through the roller of the gripping member; and

Figure 7 is a partial view of the foot end of a table to which the device of the present invention may be applied if desired.

Referring in detail to the illustrative construction shown in the drawings, the numeral 11 indicates the cabinet base portion of a physician's examining table upon which is supported a pair of padded rest members 12 and 13, forming a top therefor. In accordance with one common practice, the rest member 12 at the foot end of the

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table may be stationary, while the rest member 13 may be hinged to the rest member 12 as at 14 to swing up and down toward and from the base to adjust it to various degrees of reclining position of the patient. A lifter rod mechanism, here indicated somewhat diagrammatically at 15 and more particularly described in Froelich Patent No. 2,314,778, issued March 23, 1943, may be employed for adjusting the angle of the rest member 13 with respect to the base 11 and the other rest member 12.

Also, as described and broadly claimed in Demcak Patent No. 2,267,973 issued December 30, 1941, the head portion of the rest member 13 is advantageously upwardly recessed as at 16 (Fig. 2) to provide a chamber opening into the underside of the rest member for the recepition of a paper supply roll mounting spindle 17 upon which is wound a paper supply roll 18, desirably of a sterilized stock, from the web of which may be drawn successive lengths 19 of paper to be laid over the rest members 13 and 12 as at 20, the paper normally extending about the head of the rest member 13 and to a point adjacent the extremity of the rest member 12 at the foot of the table where the paper web may be held down by any suitable means such as the spring clips 21 here indicated.

Turning now more particularly to the present invention and to a detailed description of the embodiment thereof herein shown, attention is directed to the numeral 22 which indicates the hold-down and tear-off device as a whole, the latter comprising a band or strap 23 and a clamp or friction grip 24 for the strap.

The strap 23 may be advantageously of a plastic material which is flexible (in a plane extending in the direction of its length) but non-elastic and somewhat rigid in a transverse plane. It is also preferably transparent so as to be relatively inconspicuous.

In accordance with the present invention, the strap 23 has one end anchored at one side of the table top as by a screw and washer attachment 25 (Fig. 5), and, therefrom, extending across the rest member 13 to overlie the paper web 20 with the other end of the strap initially or sometimes free as indicated at 26 (Fig. 3).

Further following the present invention, and to secure this free end 26, the strap 23 is engaged by the gripping member 24 next described in detail.

The gripping member 24, as here shown, includes a bracket 27 having plate part 28 and parallel lugs 29 extending therefrom, these lugs

providing journals for a friction-grip roller 30. The roller 30 is desirably of rubber or rubber-like elastomer having a medium hardness and having axially extending integral ribs 31 uniformly spaced apart at relatively close intervals about its periphery, thereby giving it a fluted surface. The roller 30 is a generally solid cylinder and, as best seen in Fig. 6, has a central bore 32 through which is passed, as by a press fit, a tubular bushing 33. The bushing 33 is passed through suitable aligned perforations in the bracket lugs 29 and thereupon the ends of the bushing are flanged or riveted, as at 34, over the outer faces of the lugs 29 respectively, but in such a way that the roller and bushing together may rotate in the bracket.

As best seen in Fig. 3, the roller is so mounted in the bracket that when the strap 23 is not inserted therein the ribs 31 of the roller bear against the plate part of the bracket as at 35 for a purpose presently pointed out.

For mounting the bracket 27, the latter may have screw holes 36 in its plate portion 28 through which screws 37 may be passed into the wood of the rest member 13. At this point of attachment, the rest member is desirably notched as at 38 at its lower edge to receive the friction-grip member and render the latter also relatively inconspicuous.

So constructed and arranged, the preliminary free end 26 of the strap 23 is passed into the space between the friction roller 30 and the plate part 28, as best seen in Figs. 4 and 5. Since the roller ribs 31 are normally in engagement with the plate part 28 of the bracket, the strap 23 must be forced therebetween against the resilience of the rubber-like material of the roller. Thus substantial effort is required to rotate the roller, particularly when the strap is inserted as described, and the strap end 26 is thus firmly and securely but nevertheless releasably held.

To facilitate passage of the strap between the plate part and roller, the plate part is here shown having an oblique flange as at 39 along the edge of the plate part 28 opposite the edge having the screw holes 36, thus providing somewhat in the nature of a flared mouth for the entry of the strap end, and also providing a spring action, which, when the screws 37 are screwed in, enhances the security of attachment of the bracket to the wood.

Operation of the device as here shown is as follows:

Assuming that the strap end 26 has been engaged with the friction grip member 24 and the physician or other operator now desires to lay a length of paper along the rest member, he can loosen the strap 23 by moving the end 26 backwards in the friction grip, at which time the roller 30 will rotate clockwise as seen in Fig. 3 to permit such loosening movement. The length of paper 20 may then be passed under the strap 23 and drawn down to coincide with the foot end of the table where it is secured by clips 21. Thereupon, the operator again grasps the end 26 of the strap and pulls it down further through the friction-grip member until the strap conforms snugly to the padded top of the rest member 13, with the paper then between the strap and the rest member. To accommodate this tightening action on the strap, the roller 30 will rotate in a counterclockwise direction as seen in Fig. 3. In each such rotation, that is, for loosening or tightening the strap, the strap is firmly and securely held, and due to the friction involved, the roller will remain at any rotative position upon manual adjustment of the strap, as just described.

Next, when a succeeding patient is expected, the operator may release the paper web 20 from the clamps 21 and with one simple movement may tear the paper against the edge of the strap 23 to cut off the used length of paper. Since the plastic material of the strap is relatively hard and has substantial transverse rigidity while still being relatively thin, the paper may be torn against this edge 40 of the strap, the latter acting as a cutter to effect easy and straight-line separation of the old and new paper lengths.

Following the tearing off of the old paper length 20, the strap 23 may be again loosened sufficiently to permit the new edge of paper lying coincident with the cutting edge 40 of the strap to be grasped by the fingers of the operator and a new length of paper 19 drawn from the paper supply roll 18, the latter rotating on its mounting 17 for this purpose. When a sufficient length of paper has been drawn to cover the table top, the strap may be again tightened, by means of the friction-grip member 24.

So constructed and arranged the strap may be readily raised after the lentgh of paper has been torn off, to enable the fingers of the operator to get hold of the paper for pulling out a new length. During the replacement of the paper, by reason of the character of the strap and the friction-grip arrangement the strap will remain in a raised position over the table top as a new length of paper is being inserted between the strap and the table top, thus facilitating insertion of the paper. The device will lengthen the life of the strap, since there are no sharp points or edges engaging the strap while it is held under tension, and, at the same time, the degree of tension on the strap and of the strap on the paper can be closely regulated. When at times it may be desired to remove the end 26 of the strap from the friction grip, as for cleaning or other purposes, this can be readily done and the strap later quickly restored to engagement with the friction grip.

The screw holes 36 are desirably countersunk as at 36a to receive the heads of the screws 37 flush with the bracket part 28.

The device 22, comprising the strap 23 and friction grip member 24, may be used at the foot end of the table 11 as in Fig. 7, in place of the spring clips 21, at which time it may function as both a hold-down and a tear-off device, since it permits a controlled pressure to be exerted on the paper 20 holding it firmly in position on the table top, and this is true also even when the device is used at the head end of the table as in Fig. 1.

The invention is not intended to be limited to details of construction or field of application shown for purposes of exemplification of the invention, and such changes and adaptations may be made as fall within the scope of the appended claims without departing therefrom.

The invention having been described, what is here claimed is:

1. In a clamped hold-down strap for sanitary paper covering for the padded top of a physician's examining table, a substantially non-elastic transversely somewhat rigid plastic strap having one end fixedly secured at one side of said table top adjacent the lower edge thereof and extending across said padded top to a distance beyond the lower edge of the top at the opposite side

thereof, and a gripping member secured adjacent the lower edge of the top at said opposite side, said member comprising a plate part and a resilient roller journaled in said member in frictional engagement with said plate part, whereby said strap may be passed between the roller and plate part in gripping engagement therewith and extending therebeyond for manual manipulation to tighten or loosen the strap over said padded top.

2. In a clamped hold-down strap for sanitary paper covering for the padded top of a physician's examining table, a substantially non-elastic strap having one end fixedly secured at one side of said table top adjacent the lower edge thereof and extending across said padded top to a distance beyond the lower edge of the top at the opposite side thereof, said lower edge at said opposite side being notched, and a gripping member secured in said notch, said member comprising a plate part and a ribbed rubber roller journaled in said member in frictional engagement with said plate part, whereby said strap may be passed between the roller and plate part in gripping engagement therewith and extending therebeyond for manual manipulation to tighten or loosen the strap over said padded top, the plate having an oblique flange at one end and being secured to said top by screws passing through its opposite end.

3. In a clamped hold-down strap for sanitary

paper covering for the padded top of a physician's examining table, a substantially non-elastic transversely somewhat rigid plastic strap having one end fixedly secured at one side of said table top adjacent the lower edge thereof and extending across said padded top to a distance beyond the lower edge of the top at the opposite side thereof, and a gripping member for said strap secured adjacent the lower edge of the top at said opposite side, whereby said strap may be passed into gripping engagement therewith and the strap extends therebeyond for manual manipulation to tighten or loosen the strap over said padded top.

GEORGE E. FROELICH.

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