July 15, 1941. E. C. McGEHEE 2,249,320

SPHYGMOMANOMETER

Filed Aug. 13, 1940

Fig. 1.

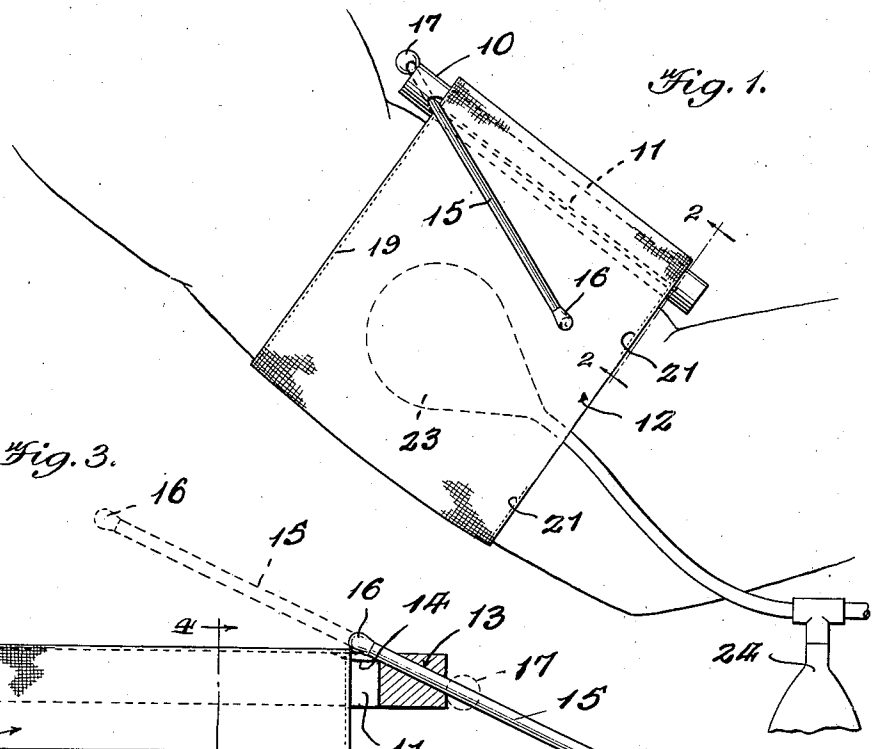


Fig. 3.

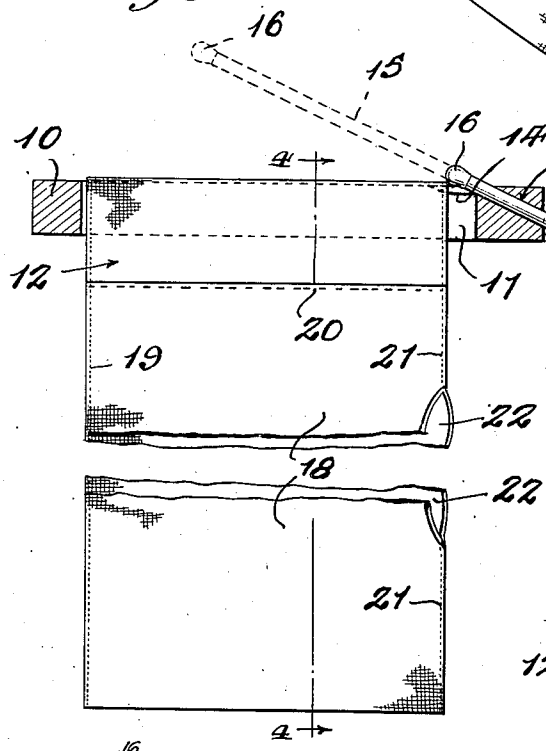
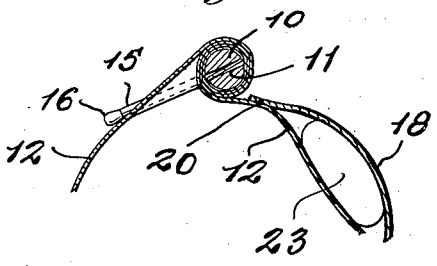


Fig. 2.



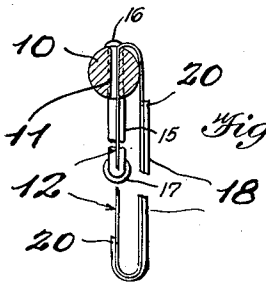


Fig. 4.

Inventor

E. C. Mc Gehee,

By Christian K. Nielsen

Attorney

Patented July 15, 1941

2,249,320

UNITED STATES PATENT OFFICE

2,249,320

SPHYGMOMANOMETER

Edward Charles McGehee, Ashland, Ky.

Application August 13, 1940, Serial No. 352,464

5 Claims. (Cl. 128—2.05)

This invention relates to a tightening device for use in conjunction with a sphygmomanometer, and it consists in the constructions, arrangements and combinations herein described and claimed.

It is the cardinal object of the invention to provide a tightening device of novel construction in which the slack in the pressure band may be quickly taken up, and in which the band may be readily secured in an adjusted position upon a limb or extremity of a patient.

It is a specific object of the invention to provide a novel band locking means, which may also be employed in rotating the roll upon which excessive slack in the band is accommodated.

It is a still further object of the invention to provide a simple construction of tightening device, of few parts and which may be manufactured at a low cost, yet efficient in operation.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawing, wherein

Figure 1 is a side elevation of my tightening device applied to a limb or extremity of a patient.

Figure 2 is a cross section on the line 2—2 of Figure 1.

Figure 3 is an enlarged sectional view through the longitudinal axis of the take-up roll.

Figure 4 is a cross section on the line 4—4 of Figure 3.

In carrying out the invention, I make use of a rod or roll 10 of any suitable light, solid material of sufficient length and diameter for the band to glide smoothly.

The rod 10 is provided with a slot 11 extending longitudinally thereof and stopping inwardly of respective ends of the rod. The slot 11 is of sufficient length to allow clearance for longitudinal adjustment of a band or sleeve 12 along the slot, as will be apparent as the description proceeds.

One end of the rod 10 is provided with a diagonally extended bore 13, as clearly shown in Figure 3, the bore intersecting the slot 11 for a short distance, and preferably at the point of intersection of the bore and slot, or through sides of the rod, the side walls of the slot are slightly cut away in a downward direction, as indicated at 14. The cut-away portions allow for a slight packing of the adjacent edges of the band and therewithin when the rod 10 is moved into securing position.

The rod 15 is provided slidably arranged within the bore 13 and at its ends there are heads so designed that they permit the rod 15 to slide freely in the bore of the rod 10. These heads may be a part of or secured to the rod 15 in any suitable way. However, both of the heads are of such size as to secure the rod within the bore.

In the construction of the band or sleeve 12, use is made of a piece of fabric of any suitable material and of a suitable width and length for the purpose for which it is to be used. This will be governed by the construction and size of the roll 10, as well as the particular use to which the appliance is made. The end portions of the band are connected after insertion through the slot, thus forming a continuous ring. Upon one side of the band 12 there is secured a fabric section 19 by any suitable means, the fastening extending longitudinally the full length of the section 18 and transversely across the ends as indicated at 20. The other longitudinal edge of the section 18 and band 12 is also secured, as at 21, these fastenings stopping short of thus forming an opening 22, as shown in Figure 3.

The opening 22 permits the insertion within the pocket thus formed of the usual air-tight rubber bag, indicated at 23, the latter being inflated by a pump indicated generally at 24. Rubber bag is an oblong square.

It will be obvious that the band 12 may be readily circumferentially adjusted within the slot to position the pocket and enclosed bag to any desired position upon a patient's extremity.

In use, the band 12 is placed over a patient's extremity, and the pocket adjusted upon the extremity as desired. The rod 13 is employed now as a handle to rotate the roll 10, causing the band 12 to be wrapped therearound. When the band 12 has been taken up sufficiently, the rod 15 is forced downward to overlie the band 12 as shown in Figure 1, causing pressure upon the band between the rod 15 and the roll. The band will thus be secured against unrolling, and since the bag 23 was inserted in the pocket prior to installation upon the arm of the patient, it is now only necessary to inflate the bag by the pump 24, as is customary. In order to release the band, it is only necessary to withdraw the rod 15, thus freeing the band and permitting unrolling thereof.

While I have shown and specifically described the invention, this is merely illustrative of one construction, and I consider as my own all such modifications in structure as fairly fall within the scope of the appended claims.

I claim:

1. In a device of the character described, a roll having a longitudinally extended slot stopping

short of respective ends, an endless band within the slot adapted to encircle a limb of a patient, one end of said roll having a diagonal bore extended inwardly over the slot, a rod slidable through the slot to lie inwardly over the roll for securement of the band wrapped upon the roll and said rod being slidable outwardly from the roll to release said band.

2. The structure of claim 1 in which the band comprises a pocket for retention of an inflatable bag.

3. In a device of the character described, a roll having a longitudinally extended slot stopping short of respective ends, an endless band within the slot adapted to freely encircle a limb of a patient, a bore formed in one end of the roll, said bore extending diagonally inward and intersecting the slot, a headed rod slidable through the bore and operable as a handle for rotating the roll to wrap a portion of the band therearound and slidable through the bore to position the rod in clamping engagement with the wrapped portion of the band, and said band having a pocket for reception of an inflatable bag.

4. In a device of the character described, a roll having a longitudinally extended slot stopping short of respective ends, an endless band within the slot adapted to encircle a limb of a patient, said roll further having a diagonal bore, handle means in the bore for rotating the roll to wrap a portion of the band thereon, said handle being movable longitudinally inward through the bore of the roll to contact and clamp the band between the handle and the roll, and said handle having annular enlargements at its ends.

5. The structure of claim 4 in which the band comprises a pocket for retention of an inflatable bag.

EDWARD CHARLES McGEHEE.