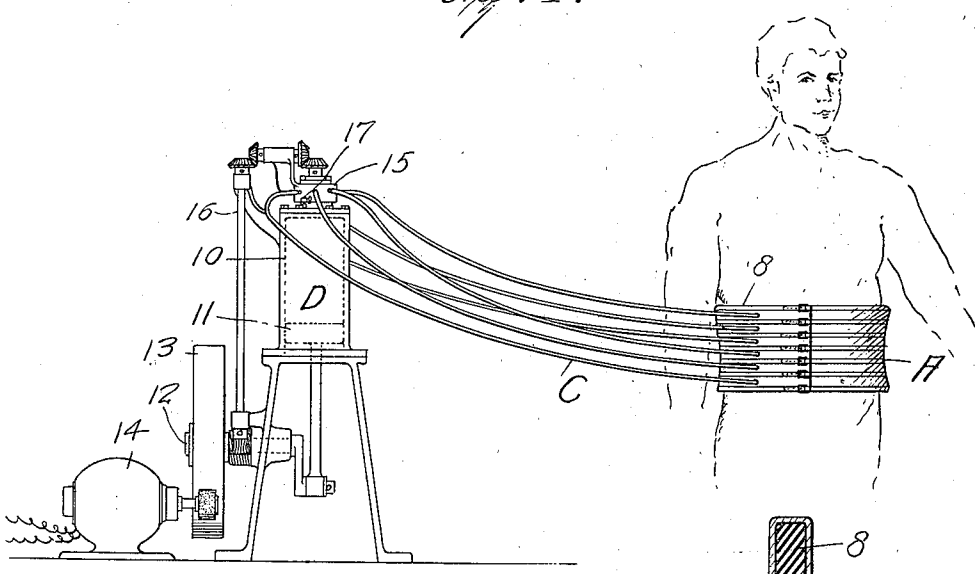
F. & W. SHURTLEFF.

MASSAGE APPARATUS.

APPLICATION FILED JAN. 5, 1915.

1,147,560. Patented July 20, 1915.

Fig. 1.



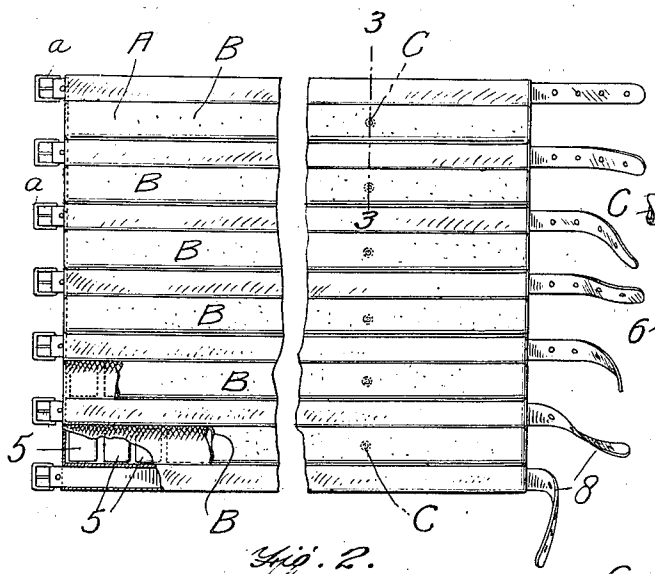


Fig. 2.

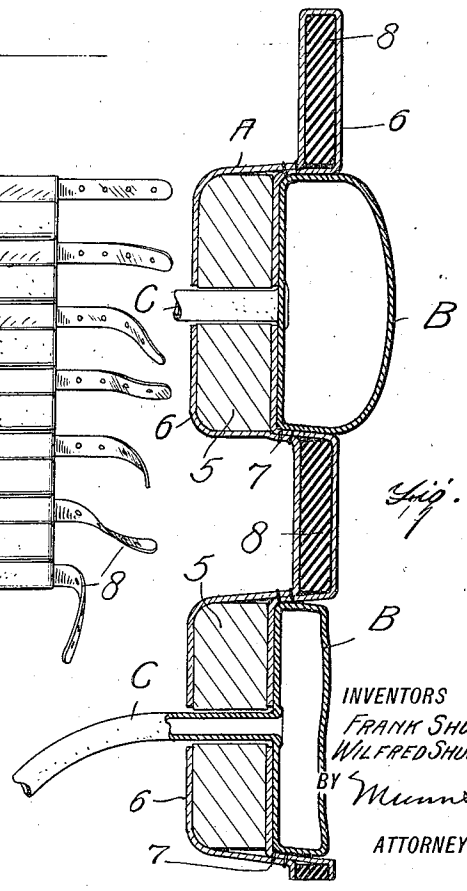


Fig. 3.

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MASSAGE APPARATUS.

1,147,560. Specification of Letters Patent. Patented July 20, 1915.

Application filed January 5, 1915. Serial No. 566.

To all whom it may concern:

Be it known that we, FRANK SHURTLEFF and WILFRED SHURTLEFF, citizens of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Massage Apparatus, of which the following is a specification.

This invention relates to an improvement in a massage apparatus and more particularly to a pneumatic massage apparatus.

One of the principal objects of the invention is to provide an improved massage apparatus in which rapid shifting of pneumatic pressure from zone to zone over the surface being treated is obtained.

Another object is to provide a device of the class set forth in which a broad non-elastic belt is used, capable of being applied to the desired portion of the body, the belt having in its inner side a plurality of spaced elastic tubes which when inflated exert their pressure inward or against the body, the tubes being adapted to be successively inflated to a desired pressure and then exhausted, at any desired speed, whereby the flesh underlying the tubes may be compressed or massaged with a shifting pressure passing from zone to zone over the portion being treated.

A further object is to provide a massage apparatus of the type specified, in which a non-elastic belt carrying inflatable elastic tubes is used, the tubes being capable of being inflated to a desired degree, whereby light or heavy pressure may be exerted, and without the danger of bruising the flesh treated.

Still another object is to provide a device of the class described which will be extremely simple, durable, efficient in operation and inexpensive to manufacture.

With these and other objects in view which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawing, in which like characters of reference indicate like parts throughout the several figures, of which—

Figure 1 represents a view in elevation of a massage apparatus constructed according to my invention showing the same in operation. Fig. 2 represents an inside elevational view of the belt forming a portion of the apparatus. Fig. 3 represents a fragmentary sectional view taken vertically on the plane indicated by the line 3—3 of Fig. 2.

In carrying out our invention we provide what we term a massage belt indicated generally at A. The belt is adapted to be placed about the desired portion of the body and supports a plurality of flexible tubes indicated generally at B. These tubes are connected each by an air tube C with a suitable source of compressed air indicated generally at D.

The belt includes a plurality of rows of wooden or other suitable non-elastic blocks 5. These rows of blocks are spaced a suitable distance apart and are supported between two layers of canvas or other suitable material indicated at 6, the canvas being stitched at 7 in a convenient manner to maintain the blocks in place. Supported by the canvas and between the various rows of blocks and at the top and bottom of the belt, are a plurality of straps 8. The straps when the belt is laid flat, lie in one plane, while the rows of blocks lie in another plane parallel with the first but spaced therefrom. The rows of blocks form backings for the inflatable flexible tubes B. As shown more clearly in Fig. 2 each tube B is disposed between a pair of the straps 8, and rests against the canvas which houses the blocks, and the sides of the tube rest against the canvas at the adjacent edges of the straps. Any suitable means may be employed in securing the tubes in place, such as cement or other adhesive material. The straps at their ends project beyond the ends of the belt proper and are provided with buckles 9, whereby as indicated in Fig. 1 the belt may be strapped about a suitable portion of the body, with the inflatable tubes B lying against the body and being overlaid or backed by the rows of blocks, so that upon the inflation of the tubes they must of a necessity exert their pressure inwardly and against the flesh.

Each of the tubes B has one end of an air tube C connected to it, the opposite ends of the air tubes being connected to some suitable form of compressed air reservoir or source, whereby air under pressure may be supplied to the tubes B.

The form of air supply shown includes an air cylinder 10 having a piston 11 operable therein. The piston is connected with a

crank arm carried upon a shaft 12 on which a fly wheel 13 is keyed. An electric motor 14 is utilized for driving the fly wheel and shaft. A valve indicated at 15 is connected with the cylinder and to this valve the ends of air tubes C are connected in such manner that only one of the air tubes is in communication with the cylinder at a time. Preferably a rotary valve is used and is driven at a desired speed from shaft 12 through the medium of a transmission indicated generally at 16. The valve operates in such manner that during one compression stroke of the piston and its succeeding exhaust stroke one of the tubes is in communication with the cylinder and upon the next compression stroke communication is established between the next tube and the cylinder. Each tube is therefore in communication with the cylinder during the compression and succeeding exhaust strokes of the piston. In this manner air is forced into and exhausted from the tubes B in succession preferably working from the top toward the bottom of the belt, so that a shifting pressure and release is accomplished, one tube B at a time being inflated and then deflated and then the next succeeding tube being inflated and deflated and so on. The speed and the degree of compression may of course be varied at will, so that a rapid or a comparative slow shifting of the pressure from zone to zone may be obtained and with the desired degree of pressure. The cylinder 10 may be equipped with a suitable valve indicated at 17 by means of which the compression obtained by the cylinder may be regulated and by means of which air forced into the various tubes may be equalized in quantity and pressure.

Such an apparatus as we have provided will obtain a massaging action which may effect portions near the surface or may extend a greater depth as desired. By reason of the elasticity of tubes B the contour of the body will be perfectly followed, and there will be no danger of bruising the flesh, but on the other hand it will be massaged or exercised in a most desirable and effectual manner. It will be understood that any suitable source of compressed air, and any suitable means whereby the air may be successively forced into and emptied from the elastic tubes may be employed without departing from the spirit of the invention.

Although we have described the preferred embodiment of my invention, we may desire to make such changes in the construction, combination and arrangement of parts thereof as do not depart from the spirit of the invention and the scope of the appended claims.

We claim:

1. A massage apparatus including a belt, said belt comprising a plurality of spaced rows of non-elastic blocks, non-elastic material on which said rows of blocks are bound, non-elastic straps disposed between said rows of blocks, said straps being disposed in a plane spaced from and parallel with the plane with which the blocks lie, elastic tubes disposed between the straps and against the blocks, said belt adapted to be placed upon the body in such position that the elastic tubes lie against the body, a plurality of air tubes connected each at one end to one of the elastic tubes and at the opposite end being in communication with a source of compressed air, and means whereby air may be forced into the elastic tubes at desired pressure and exhausted from said elastic tubes in succession, and at desired speed.

2. A massage apparatus including a non-elastic belt adapted to be placed upon a desired portion of the body, straps carried by the belt whereby the same may be secured in place, spaced rows of non-elastic blocks carried by said belt, spaced elastic tubes carried by the belt in such position that the rows of blocks form backings for the tubes, said tubes being disposed on the inner side of the belt, a plurality of air tubes connected each at one end to one of said elastic tubes, and means whereby air may be delivered through said air tubes into the elastic tubes and exhausted therefrom in such manner that said elastic tubes may be inflated and exhausted in succession at a desired speed and to a desired degree.

3. A massage apparatus comprising a belt having a plurality of spaced rows of non-elastic blocks, a plurality of spaced elastic tubes carried by the belt in such position that the blocks form backings for the tubes, and means for inflating and deflating the tubes in succession and to a desired degree, and at a desired speed.

4. The combination of a belt having a plurality of elastic tubes, means for forming a backing for the tubes, means whereby the belt may be disposed upon a body with the tubes between said body and backing, and means for delivering air under pressure to the tubes and for exhausting air therefrom in succession.

5. The combination of a non-elastic belt, a plurality of elastic tubes carried thereby and adapted to be disposed against a portion of the body, and means for inflating and deflating the tubes in succession.

6. In a massage apparatus, a plurality of inflatable tubes, means whereby they may be maintained in contact with the body, a plurality of air tubes connected each at one end to one of the inflatable tubes, and means connected with the air tubes whereby compressed air may be delivered to and exhausted from the inflatable tubes in succession.

7. In a massage apparatus, a plurality of

inflatable tubes, a backing for each tube, means for maintaining said tubes in contact with the body, and means for inflating and deflating the tube.

8. In a massage apparatus, a plurality of inflatable tubes, means for maintaining them in contact with the body, and means whereby the tubes may be inflated and deflated in succession.

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