F. A. HAWLEY.

APPARATUS FOR ADMINISTERING MEDICAL TREATMENT.

APPLICATION FILED MAY 13, 1914.

1,142,422.

Patented June 8, 1915.

3 SHEETS—SHEET 1.

Fig. 1.

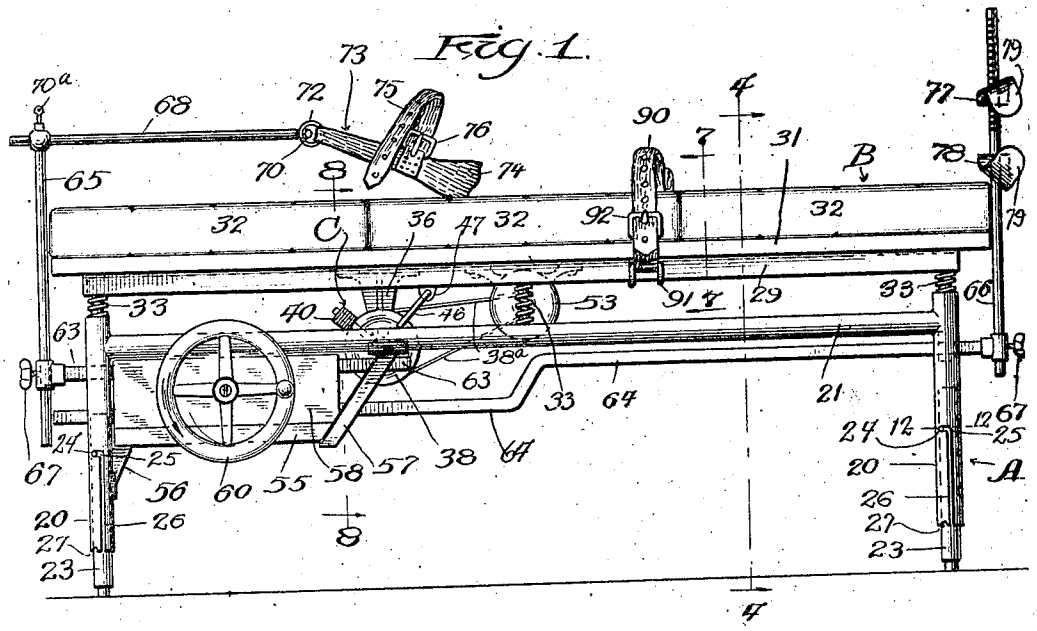
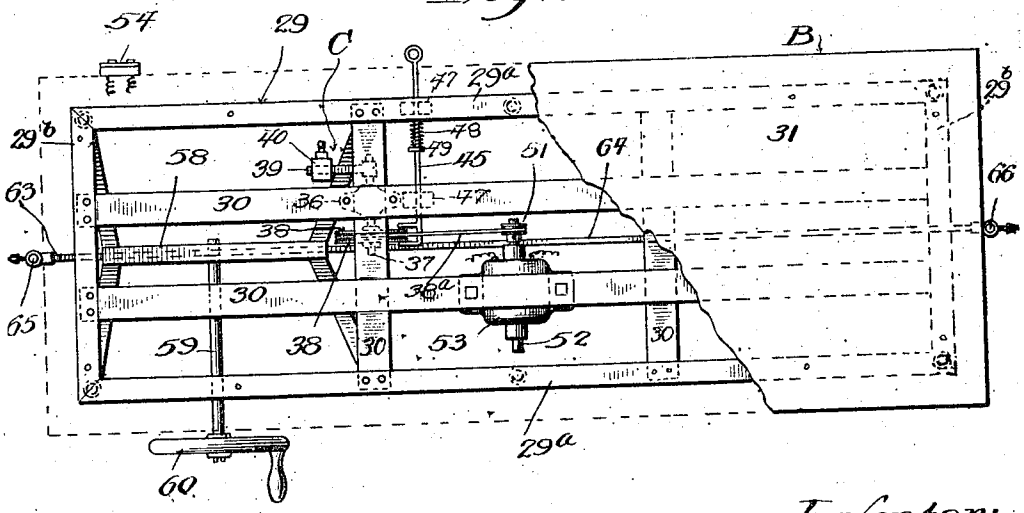


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

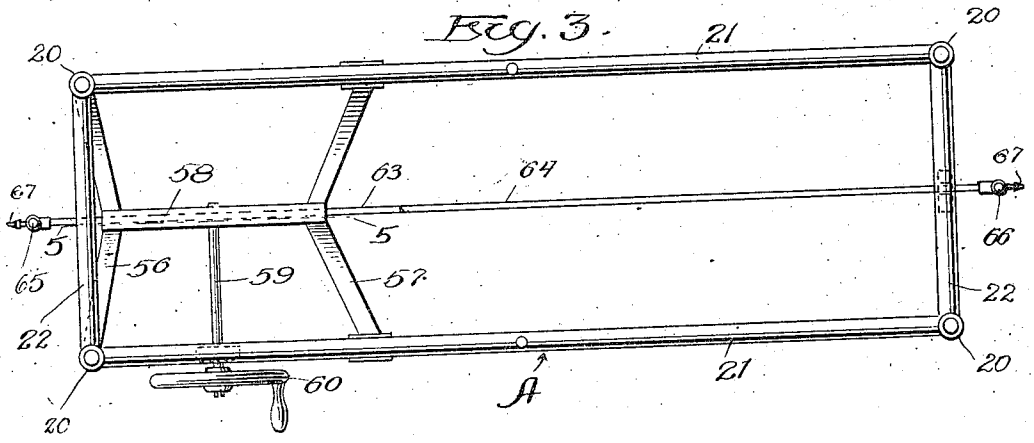


Fig. 5.

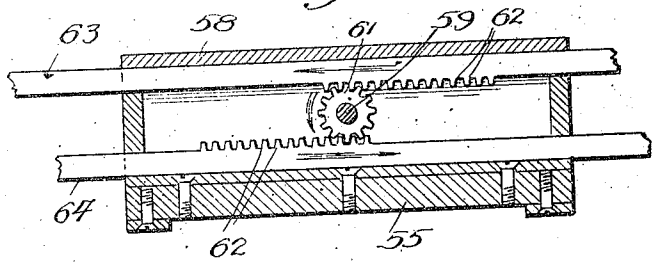


Fig. 4.

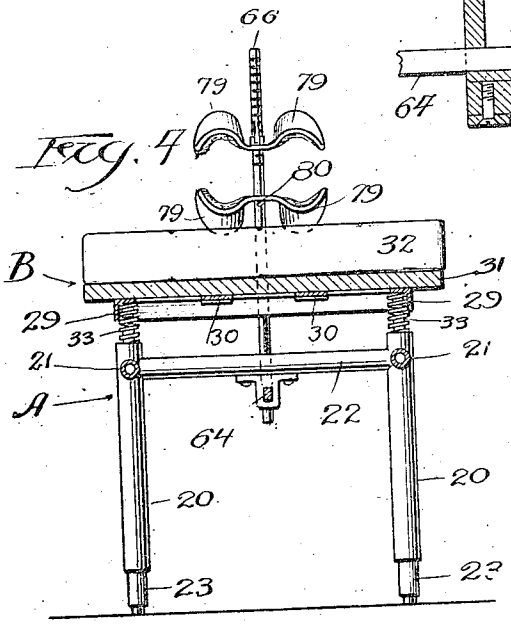


Fig. 6.

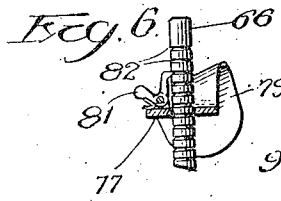
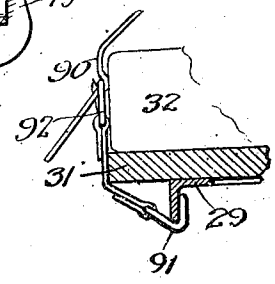


Fig. 7.



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APPARATUS FOR ADMINISTERING MEDICAL TREATMENT.

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Patented June 8, 1915.

3 SHEETS—SHEET 3.

Fig. 8.

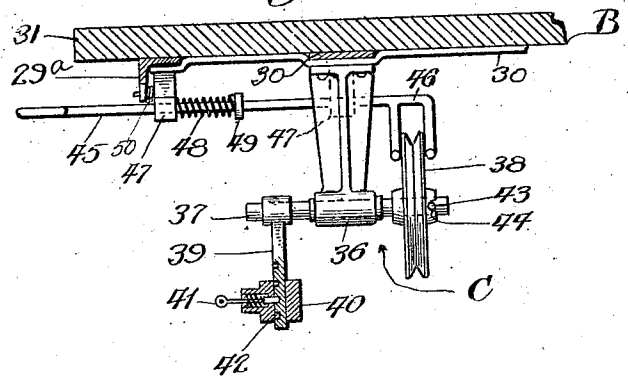


Fig. 9.

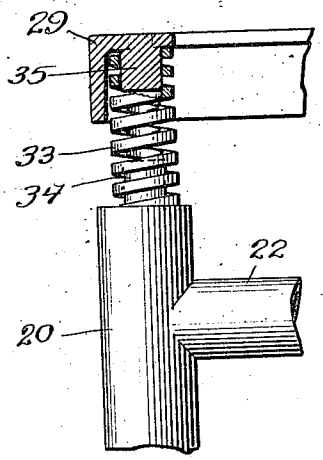


Fig. 10.

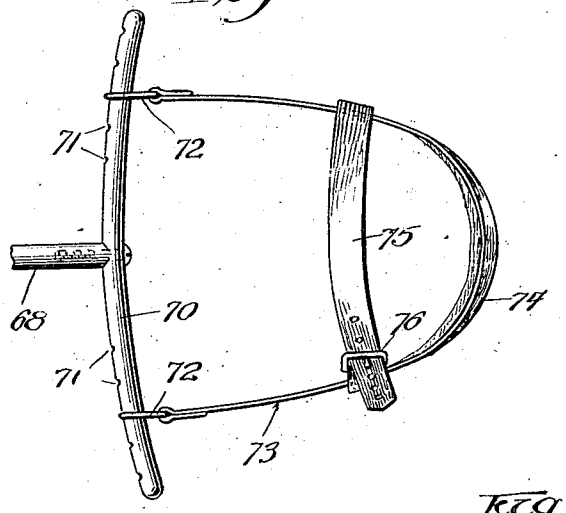


Fig. 11.

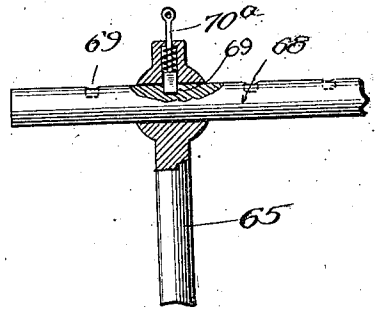
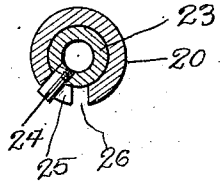


Fig. 12.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR ADMINISTERING MEDICAL TREATMENT.

1,142,422. Specification of Letters Patent. Patented June 8, 1915.

Application filed May 13, 1914. Serial No. 838,210.

To all whom it may concern:

Be it known that I, FREDERICK A. HAWLEY, a citizen of the United States, and a resident of Hammond, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Apparatus for Administering Medical Treatment, of which the following is declared to be a full, clear, and exact description.

This invention relates to apparatus for use in giving treatments to persons requiring certain forms of treatment, and its primary object is to provide an improved apparatus for simultaneously stretching and vibrating the various muscles, cartilages and ligaments of the body; for making the blood circulate more freely, and for taking the pressure off irritated nerves and carrying off through the natural channels waste matter and fat.

Another object is to provide an improved apparatus for exercising unused muscles, and generally promoting and stimulating the appetite, sleep and other normal functions of the various organs of the human system.

Another object is to provide an apparatus which will perform these several functions without possibility of injury to the patient or any danger of overdoing the exercise.

Another object is to provide an apparatus that will massage all of the muscles of the body without the removal of clothing and in the shortest possible time.

Other objects and advantages will be made apparent in the course of this specification, and with all said objects and advantages in view, this invention consists in a combined vibratory table and stretching apparatus operating jointly to simultaneously vibrate and stretch the muscles, cartilages and ligaments of the patient.

It further consists in the several novel features of construction, arrangement and combination of parts, hereinafter fully described and particularly defined in the appended claims.

The invention is clearly illustrated in the drawings furnished herewith in which:—

Figure 1 is a side elevation of a complete apparatus embodying the preferred form of the invention; Fig. 2 is a plan with certain parts removed to illustrate portions below the table; Fig. 3 is a plan of the main supporting frame and parts associated therewith; Fig. 4 is a vertical cross section taken on line 4—4 of Fig. 1; Fig. 5 is a detail, vertical, longitudinal section of a gear casing, and parts therein, taken on line 5—5 of Fig. 3; Fig. 6 is a detail view of a vertical foot rod and one of the foot holders supported thereby, the latter being shown in vertical section; Fig. 7 is a detail view of a fragment of a binder for strapping the patient to the table, the table being shown in the section and the line of section being indicated at 7—7 in Fig. 1; Fig. 8 is a detail view of a vibrator forming part of the apparatus, the table being shown in vertical cross section and the line of section being indicated at 8—8 in Fig. 1; Fig. 9 is a detail view, partly in side elevation and partly in vertical section, of a fragment of one of the legs of the supporting frame and a corner of the top frame of the table, showing the flexible connection between the two; Fig. 10 is a plan of the head harness; Fig. 11 is a detail, vertical, longitudinal section through the top of the vertical head rod and showing a spring-pressed pin for adjustably connecting the head harness supporting rod with the vertical head rod; and Fig. 12 is a detail horizontal section taken on line 12—12 of Fig. 1.

Referring to said drawings, the main supporting frame is seen at A, and the table at B; a simple form of supporting frame comprises four legs 20, connected near their upper ends by longitudinal bars 21, and cross bars 22. Conveniently said legs and connecting bars may be welded together so as to form a strong and substantial structure. The legs may comprise tubular members, and if desired, may contain extension legs 23, slidably mounted therein and each having a pin 24 (see Fig. 12) resting in a notch 25, at the upper end of a vertical slot 26, formed in each leg, and opening out through the bottom thereof. Each extension leg may be moved down until the pin 24 is withdrawn from the slot 26, and by turning the extension leg, the pin 24 may enter a notch 27, provided on the extreme end of each leg 26, thus supporting the table in raised position. Conveniently the legs may have rubber tips upon their lower ends.

The table B comprises a top frame 29, preferably constructed of angle iron bars 29^a, 29^b, longitudinal and cross strips 30, secured thereto. Two of the angle iron bars 29^a, extend longitudinally of the main sup-

porting frame and lie directly above the longitudinal connecting bars 21 thereof, and the cross bars 29[b], are located directly above the cross bars 22, of the supporting frame. Upon said top frame is placed a board or boards 31, forming the table proper, and, if desired, cushions 32, may be placed upon said board. The table is supported upon the main frame by a plurality of coiled compression springs 33, (see Fig. 9) certain of which rest upon the tops of the legs 20 and engage the underside of the top frame at the corners thereof and others of which are between the longitudinal bars of the frames; lugs 34, 35, are secured to the upper and lower frames, and hold the springs in place. Preferably the springs are made of square wire and are of such diameter and strength as to yieldingly support the table and load carried thereby.

The vibrator is seen at C (see Figs. 1, 2 and 8) and is carried by the top frame 29, of the table; in its preferred form, it comprises a downwardly projecting bracket 36, secured to one of the strips 30. In the lower end of said bracket is journaled a shaft 37, having on one end a grooved belt pulley 38, and on the other end an arm 39, rigidly secured thereto, upon which is adjustably mounted a weight 40. Conveniently a spring pressed pin 41 is secured in the weight and is adapted to be placed in any one of a number of holes 42, in the arm, whereby the weight may be held at any desired position along the same to increase or decrease the degree of vibration. The grooved belt wheel 38, is slidably mounted on the shaft 37, and is arranged to be clutched thereto or unclutched therefrom, as, for instance, by means of a pin 43, secured in the shaft and arranged to enter a notch 44 in the hub of the belt pulley, whenever the latter is moved toward the right as viewed in Fig. 8. A pulley shifting device is provided for the pulley 38, and as shown, comprises a rod 45, having a fork 46, straddling the pulley 38 and slidably mounted in brackets 47, secured to the under side of the table frame 29. A compression spring 48, surrounds the rod 45, and is confined between one of the brackets 47, and a collar 49, on the rod 45, and acts to hold the belt pulley clutched to the shaft. By pulling upon the end of the rod 45, the pulley may be unclutched from the shaft 37, and if desired the rod 45, may have a pin 50, secured thereto, which passes through a slot in the angle iron bar 29[a], when the rod is pulled over the left as viewed in Fig. 8, and by slightly turning said rod the pin may be brought into engagement with the outer face of said angle iron to temporarily hold the belt pulley out of its clutched engagement with its shaft. The belt pulley 38 has a belt 38[a], running over a grooved belt pulley 51, fast on the shaft 52 of an electric motor 53, secured to the under side of the top frame 29, of the table, as indicated in Figs. 1 and 2. A push button 54, is secured to the table near its head end and is wired to the motor, whereby the latter may be started and stopped from that place.

The stretching mechanism is carried by the stationary frame A, and will now be described: A gear case supporting bar 55, is secured to the stationary frame A, by brackets 56, 57, and said bar supports the gear case 58, in which turns a shaft 59 having detachably mounted on one end, a crank wheel 60, and on the other end a gear pinion 61, which meshes with rack teeth 62, formed upon two rack bars 63, 64, that slide in said case and are located one above the other, as clearly seen in Fig. 5. The upper rack bar 63, is connected with the head harness and the lower rack bar with the foot holders. Said rack bars extend beyond the ends of the frame and have heads upon their outer ends through which extend vertical rods 65, 66, that are adjustably held in place thereby thumb screws 67. The vertical rod 65, has an enlargement upon its upper end through which extends a horizontal head rod 68, which is slidably mounted in said enlargement and is provided with a number of holes 69, (see Fig. 11) any of which is adapted to receive a spring pressed pin 70[a], mounted in the enlargement on the end of the vertical rod, whereby said horizontal head rod may be held in any of its positions of adjustment. Upon one end of said horizontal head rod 68, is a head harness hanger bar 70, preferably curved as shown in Fig. 10 and provided on its rear edge with two series of notches 71, into any of which may be placed rings 72, of the head harness 73. Said head harness may conveniently comprise a chin strap 74, the ends of which are secured upon said rings, and the middle portion of which is arranged to pass underneath the chin of the patient. A neck strap 75, is secured to and connects the two sides of said chin strap and has a buckle 76, whereby it may be lengthened or shortened; said neck strap is arranged to pass behind the neck of the patient when the harness is placed on him.

The vertical rod 66, is the vertical foot rod of the device and carriers upper and lower foot holders 77, 78, which are provided with centrally located holes through which extends the vertical rod 66. The foot holders are provided with oppositely bent portions 79, shaped to fit over the instep and across the heel of the patient, (see Fig. 4) the lower one rests upon a pin 80, which extends through the upright rod 66 at a point above the table, and the upper foot holder 77 is provided with a spring pressed latch 81, which is arranged to engage any one of

a number of circumferentially arranged notches in the vertical rod 66, whereby said upper foot holder may be adjusted vertically to clamp the feet of the patient between the foot holders. A binder is used for strapping the patient to the table and may comprise a strap 90, having hooks 91, secured upon its ends and adapted to be hooked under the lower edges of the angle iron bars 29ª; the strap having a buckle 92, whereby it may be tightened down upon the patient to firmly hold any portion of his anatomy down upon the cushions.

In operation the patient is laid face downward upon the cushions of the table; his feet placed between the upper and lower foot holders, and the upper one moved down to clamp his feet between the two holders. The horizontal head rod 68 is then adjusted longitudinally of the apparatus to bring the head harness into position on the head of the patient, and said horizontal head rod is then fastened to the vertical head rod 65, by the spring pressed pin 70ª, which is caused to enter one of the notches in said horizontal head rod. The binder is then placed across the patient at the place where it is desired to give the most effective treatment; the hooks are hooked upon the angle iron mars 29ª, and the strap tightened down upon the patient by pulling one end through the buckle and securing it in place therein. The hand wheel 60, is then turned in the direction of the arrow thereon in Fig. 1, thereby turning the gear pinion 61, and moving the rack bars 63, 64, in opposite directions, as indicated by the arrows thereon in Fig. 5, thus moving the vertical head and foot rods apart and with them the head harness and foot holders. A tension is thus put upon the patient and while the tension is being applied to him, the electric current to the motor is turned on and the motor started. The weighted arm of the vibrator is caused to revolve very rapidly and inasmuch as the vibrator is carried by the vibratory table, the rapid rotation of the weighted arm vibrates the table and the patient lying thereon. If it is desired to momentarily stop the vibrator, the shift rod 45, is pulled outward, thus disconnecting the belt pulley 38, from the shaft 37, and permitting the motor and pulleys to run without effecting the rotation of the shaft. It is to be observed that the patient may control the operation of the device, or the attendant may do so, if desired. It is also to be observed that by reason of the adjustability of the head harness rod and foot holders, the same may be applied to persons of small as well as of large stature, and that the binder may be shifted along the angle iron bars to any point on the table so as to press any portion of the anatomy of the patient down upon the table. Furthermore by vibrating the body of the patient, while it is being stretched, more beneficial results are obtained than where it is vibrated only. The entire structure may be raised to its upper most position by extending the legs and may be used for many other purposes known to those skilled in the art.

More or less variation of the details of construction described is possible without departing from the spirit of this invention; I desire, therefore, not to limit myself to the exact details of construction shown and described, but intend in the following claims to point out all of the invention disclosed herein.

I claim as new and desire to secure by Letters Patent:

1. In an apparatus of the character described, the combination with a yieldingly supported vibratory table, and means carried by said table for vibrating the same, of non-vibratory stretching means associated therewith for stretching a member of a person's anatomy supported and vibrated by said support, said table vibrating means and stretching means being controllable by the person operated on.

2. In an apparatus of the character described, the combination with a vibratory table, a rigid, stationary support therefor, and means for vibrating said table, of independently operable, non-vibratory stretching means mounted on said support, and having means for attachment to members of the anatomy of a person resting on said table, said vibratory means and stretching means being controllable by the person operated on.

3. In an apparatus of the character described, the combination with a vibratory table, a rigid, stationary supporting frame therefor, spring supports between said frame and table, and vibrating means carried by said table for vibrating the same, of independently operable, non-vibratory stretching means mounted on said frame and having portions extending above the table, arranged for attachment to portions of a person's anatomy.

4. In an apparatus of the character described, the combination with a vibratory table, a supporting frame therefor, spring supports between said table and frame and a motor driven vibrator carried by said table, of independently operable, non-vibratory stretching means mounted on said frame, and having head harness and foot holders located above the table.

5. In an apparatus of the character described, the combination with a vibratory table, a supporting frame therefor, coil springs interposed between said frame and table for yieldingly supporting said table, and a motor driven vibrator carried by said table, of independently operable, non-vibratory stretching means having two oppositely

moving rack bars, a manually operated gear pinion for moving said rack bars, head harness carried by one of said rack bars, and foot holders carried by the other rack bar.

6. In an apparatus of the character described, a vertical foot rod, a foot holder rotatively mounted thereon, and a companion foot holder adjustably mounted thereon.

7. In an apparatus of the character described, a longitudinally movable horizontal bar, means for moving the same lengthwise of itself, a vertical foot rod slidably mounted in said horizontal bar, a foot holder rotatively mounted on said vertical rod, and a companion foot holder adjustably and rotatively mounted on said vertical foot rod.

8. In an apparatus of the character described, the combination with a vibratory table having an angle iron frame, of a binder having hooks upon its ends, arranged to hook under said angle iron frame and having a buckle between its ends; substantially and for the purpose set forth.

9. In an apparatus of the character described, the combination with a main frame having supporting legs, of a table carrying frame thereabove, both of said frames having opposing lugs secured thereto, and coiled compression springs surrounding said lugs and interposed between said legs and frames.

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