March 4, 1969 A. T. BORGEAS 3,430,956

FOOT AND LEG EXERCISER

Filed Aug. 15, 1966 Sheet 1 of 2

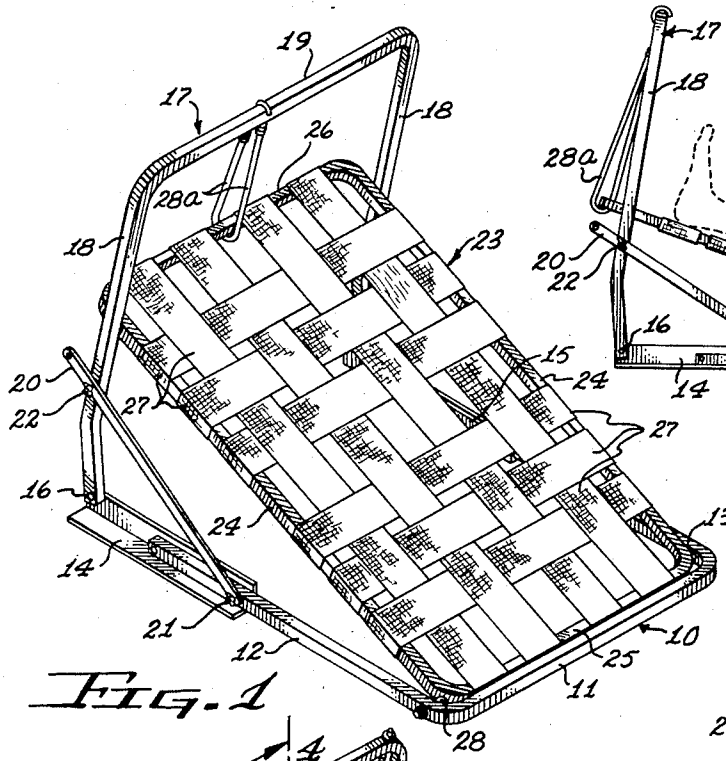


FIG. 1

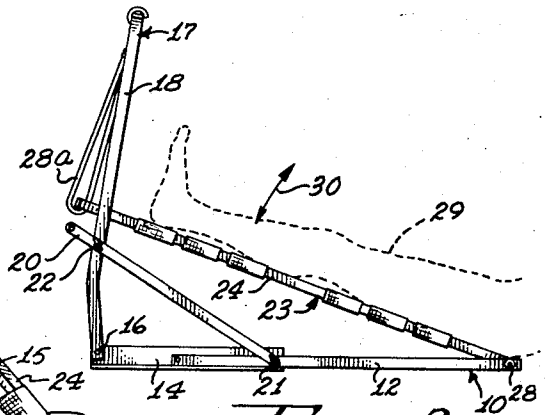


FIG. 2

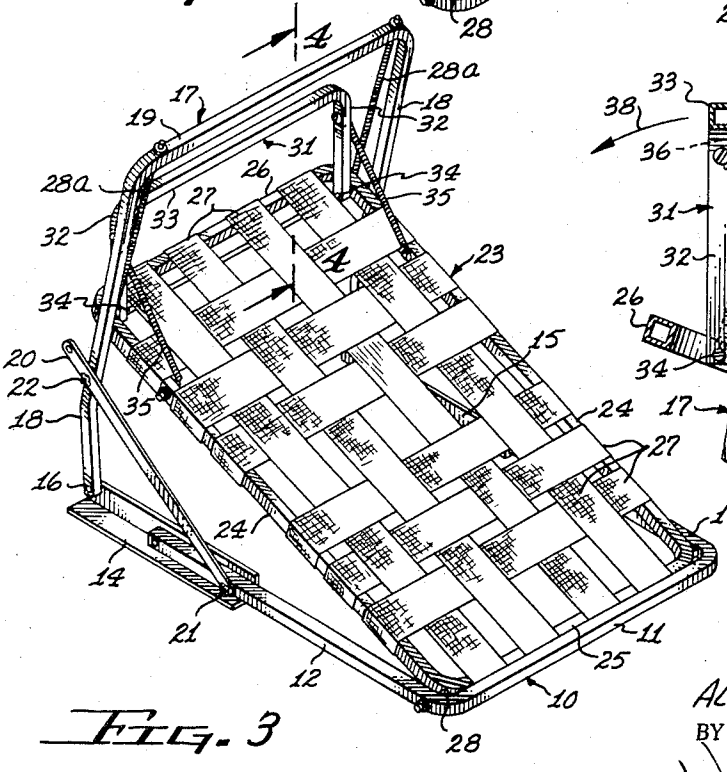


FIG. 3

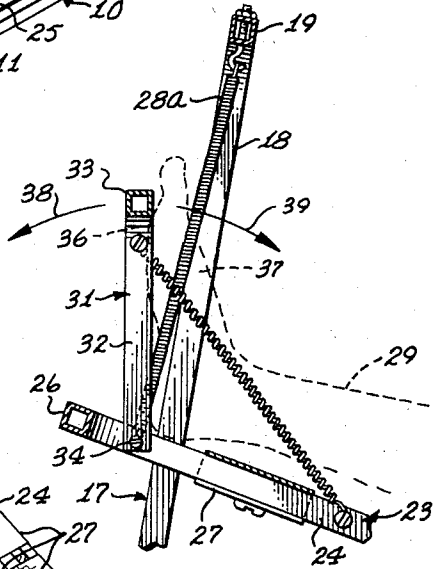


FIG. 4

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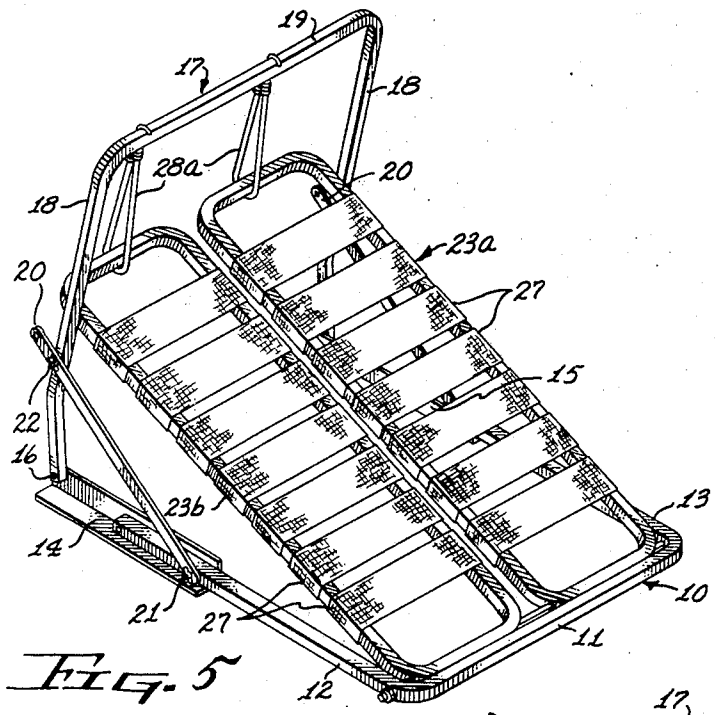


FIG. 5

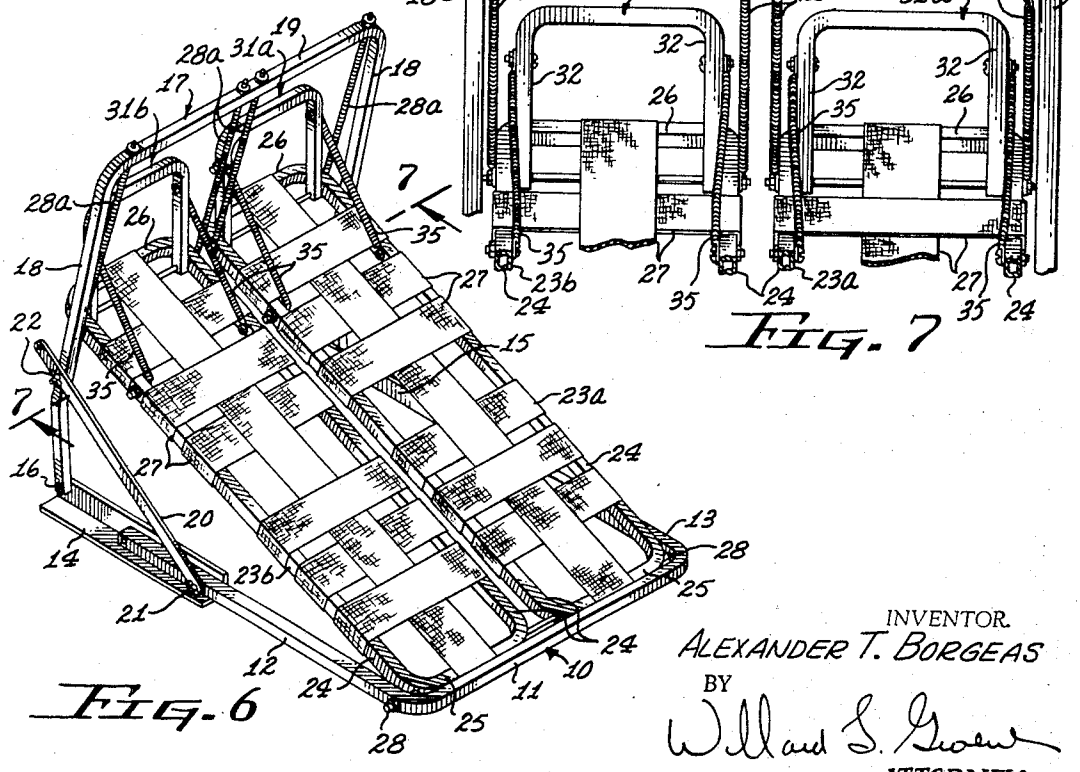


FIG. 6

FIG. 7

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FOOT AND LEG EXERCISER

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U.S. Cl. 272—83 2 Claims
Int. Cl. A63b 21/02, 21/12

ABSTRACT OF THE DISCLOSURE

A therapeutic apparatus for automatically inclining the legs from a horizontal to a vertical sloping pitched-up position to aid in controlling the circulation in the legs and feet of a patient. The legs are positioned on a hinged platform which is spring biased upward sufficiently to neutralize the weight of the legs. On one end of the platform may be located a pivoted foot exerciser which can be pivoted by the foot again a spring resistance.

This invention pertains to therapeutic devices and is particularly directed to a leg circulation control device.

One of the objects of this invention is to provide a device for automatically inclining the legs from a horizontal to a vertically sloping pitched-up position to aid in controlling the circulation in the legs and feet of a patient.

Still another object of this invention is to provide a device which is yieldingly balanced against the pressure of the legs so that with substantially no effort the patient may raise or lower his legs with ease in a periodic manner from a horizontal to an upwardly sloping position to change the effect of gravity on a circulatory pattern in the legs and feet of the patient.

Still another object of this invention is to facilitate the treatment of the foot by controlling the circulation in the legs in a manner under the will of the patient for varying the raising and lowering of the legs of the patient.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

FIG. 1 is a left hand side perspective view of a preferred form of the device incorporating the features of this invention.

FIG. 2 is a left hand side elevation of the device shown in FIG. 1.

FIG. 3 is a view similar to FIG. 1 but showing a modification including a foot and ankle exerciser.

FIG. 4 is an enlarged fragmentary sectional view on the line 4—4 of FIG. 3.

FIG. 5 is a view similar to FIG. 1 showing the modification of the device with independent leg control members.

FIG. 6 is a view similar to FIG. 5 but showing independent foot and ankle exercising elements.

FIG. 7 is an enlarged fragmentary sectional view on the line 7—7 of FIG. 6.

As an example of one embodiment of this invention there is shown a leg circulation control device comprising a frame indicated generally at **10** consisting of a U-shaped horizontal support element having a lateral member **11** and integral side members **12** and **13**. Fixed to the rearward ends of the side members **12** and **13** are the support plate members **14** and **15**. Pivotally mounted at **16** on the rear ends of the support plate members **14** and **15** is the tension support **17** comprising the upright standards **18** and the integral horizontal cross member **19** at the top of the upright standards **18**. Supporting struts **20** are pivotally mounted at **21** to the side members **12** and **13** and are demountably connected at **22** by

suitable fastening means to the upright standards **18** of the tension support **17** so as to collapsibly secure the frame **10** and tension support rigidly together in operative position.

A leg support platform indicated generally at **23** comprising the side members **24** and the front member **25** and rear member **26** supporting a suitable pliable covering such as the plastic tape **27**. The front member **25** of the leg support platform **23** is hinged by a suitable hinge rod **28** at the front ends of the side members **12** and **13** adjacent the lateral member **11**. The rear end **26** of the leg support platform **23** swings up and down within the upright standards **18** and below the cross member **19**. Interconnected between the cross member **19** and the rear member **26** is a suitable resilient connecting element such as an elastic member or tension spring **28***a* and the like so as to normally yieldingly urge or swing the platform **23** in an upward direction in opposition to the pull of gravity and the weight of the patient's legs **29** as he sits or lies in front of the device as best shown in FIGS. 2 and 4. Thus the patient may raise and lower his legs or change their relative horizontal position for best circulation conditions and greatest comfort with a very minimum of effort since the elastic element is arranged to substantially neutralize the effect of gravity on the legs for any desired swing position indicated by the arrow **30**, the platform **23** literally floating to any desired tilted angle with only very light pressure from the patient's legs.

In certain instances it may be desirable to provide additional foot exercises for the patient while using the aforedescribed device. To this end there is provided a foot exerciser element **31** having upright arms **32** and an integral foot engaging rail **33**. The lower ends of the upright arms **32** are hinged at **34** on the side members **24** of the leg platform **23** so that tension springs **35** connected between the side members **24** of the leg platform and the upright arm **32** of the foot exerciser element **31** yieldingly swings the foot engaging rail **33** against the bottom **36** of the foot **37** of the patient so that it may be manipulated back and forth as indicated by the arrows **38** and **39**, FIG. 4.

In the modifications shown in FIG. 5, 6 and 7, the leg support platform **23** of FIG. 1 is eliminated and two separate platforms **23***a* and **23***b* are utilized, one for each leg so that the patient can position each leg separately and independently to desired position. Further, independnt foot exercising elements **31***a* and **31***b*, one for each leg support platforms **23***a* and **23***b* are provided for independent manipulation of each foot of the patient.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commercial adaptation as fall within the scope of the appendent claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters Patent is:

1. A leg circulation control device comprising in combination:

(A) a frame arranged to be supported on a horizontal surface,

(B) a leg support platform pivotally mounted at one edge to swing around a horizontal axis on said frame with its outer free end swinging vertically relative to said frame,

(C) and resilient means interconnecting said outer free end of said leg support platform with said frame so as to normally yieldingly swing said platform

upwardly relative to said frame, wherein the outer free end of said leg support platform includes a exerciser element movably mounted thereon having a foot engaging member and a resilient element interconnected between said platform and said foot exerciser element to normally yieldingly urge said foot engaging member in a direction toward the pivoted edge of th supporting surface of said leg support platform.

2. The leg circulation control device of claim **1** including an additional leg support platform similar to and mounted alongside said first mentioned leg support platform, and a foot exerciser element similar to said first mentioned foot exerciser element mounted on said additional leg support platform.

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U.S. Cl. X.R.

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