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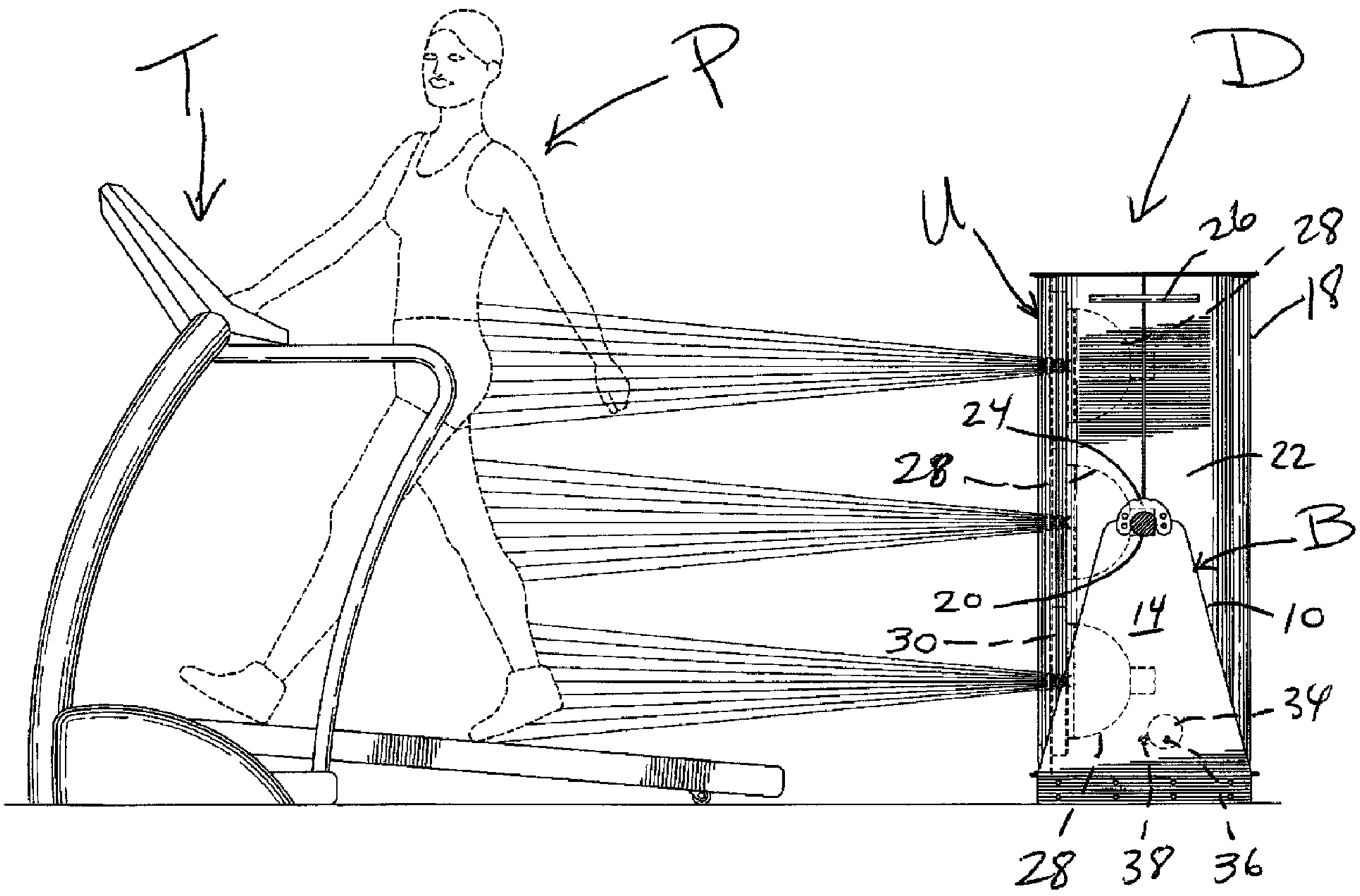
(72) **Inventeur/Inventor:**
KIREMITCI, KIRKOR, CA

(73) **Propriétaire/Owner:**
KIREMITCI, KIRKOR, CA

(74) **Agent:** BERESKIN & PARR LLP/S.E.N.C.R.L.,S.R.L.

(54) **Titre : APPAREIL DE LUMINOTHERAPIE A LAMPE OSCILLANTE**
(54) **Title: OSCILLATING PHOTO LIGHT THERAPY DEVICE**



(57) **Abrégé/Abstract:**
An oscillating photo light therapy device includes a base and a light emitting unit pivotally mounted to the base. The light emitting unit is provided with at least one light emitting source. A movement imparting mechanism is provided for displacing the light emitting unit relative to the base along an oscillating motion, wherein the light source emits at different angles towards the user's body.

ABSTRACT OF THE DISCLOSURE

An oscillating photo light therapy device includes a base and a light emitting unit pivotally mounted to the base. The light emitting unit is provided with at least one light emitting source. A movement imparting mechanism is provided for displacing the light emitting unit relative to the base along an oscillating motion, wherein the light source emits at different angles towards the user's body.

TITLE OF THE INVENTION

OSCILLATING PHOTO LIGHT THERAPY DEVICE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This Application claims priority on U.S. Provisional Application No. 61/476,726, filed on April 18, 2011.

FIELD OF THE INVENTION

[0002] The present invention relates to devices used in gyms and home gyms, for the well-being of users.

BACKGROUND OF THE INVENTION

[0003] In this age where people are concerned about their well-being and appearances, various methods, products and devices exist for exercising purposes, for improving one's skin texture, etc.

[0004] Nevertheless, there is a need in the art for improvements in the area of the well-being of people.

SUMMARY OF THE INVENTION

[0005] It is therefore an aim of the present invention to provide a novel device for the well-being of users thereof.

[0006] Therefore, in accordance with the present invention, there is

provided an oscillating light therapy device, comprising a base and a light emitting unit, the light emitting unit being provided with at least one light source, a movement imparting mechanism being provided for displacing the light emitting unit relative to the base for providing an oscillating motion of the light emitting unit, wherein the light source emits towards the user's body.

[0007] Other objects, advantages and features of the present invention will become more apparent upon reading of the following non-restrictive description of embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Reference will now be made to the accompanying drawings, showing by way of illustration an illustrative embodiment of the present invention, and in which:

[0009] Figure 1 is a side elevation view of an oscillating photo light therapy device in accordance with the present invention, and shown being used while a user is exercising on a treadmill;

[0010] Figure 2 is a perspective view of the oscillating photo light therapy device of Figure 1;

[0011] Figure 3 is a front view of the oscillating photo light therapy device of Figure 1;

[0012] Figure 4 is a top plan view of the oscillating photo light therapy device of Figure 1; and

[0013] Figures 5 and 6 are right-side elevation views of the oscillating photo light therapy device of Figure 1, showing the device in different positions.

DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS OF THE INVENTION

[0014] With reference to the drawings, there will now be described an oscillating photo light therapy device D. The device D is herein shown in use as a user P is exercising on a treadmill T. The device D is to be used in gyms, home gyms, etc.

[0015] More particularly, the oscillating photo light therapy device D includes a ground-contacting base B and a light-emitting unit U mounted on the base B in such a way that the light-emitting unit U can oscillate with respect to the base B.

[0016] As seen in Figures 2 and 3, the base B includes a U-shaped frame 10 having a lower support 12 adapted to overlie the ground and a pair of side support plates 14 extending vertically upwards from opposed lateral ends of the lower support 12. A substantially semi-circular recess 16 is defined in the upper end of each side support plate 14.

[0017] The light-emitting unit U includes a housing 18 extending between the side support plates 14. A pair of cylindrical members 20 are fixedly

mounted to lateral walls 22 of the housing 18 so as to extend horizontally outwardly therefrom. Each cylindrical member 20 sits, by gravity, in a respective recess 16 of the side support plate 14 of the base B, thereby allowing the light-emitting unit U to pivot relative to the base B. Stopper plates 24 are mounted to the cylindrical members 20, outwardly of the side support plates 14 to ensure stability of the light-emitting unit U on the base B.

[0018] Handles 26 are mounted to the housing 18 for manipulating the light-emitting unit U.

[0019] A number (herein three) of infrared light emitting sources 28, such as specially formulated Quartz lamps, are mounted in the housing 18, as well seen in Figures 1 to 3. The three light emitting sources 28 are herein superposed, and a transparent protective sheet 30 (such as made of clear acrylic) is provided forwardly of the light emitting sources 28 as a shield that protects the users from touching any hot filter and components while allowing the transmission of the desired rays to the user U.

[0020] Now referring mainly to Figures 3 and 4, a gear motor 32 is mounted in the housing 18 and a cylindrical drive member 34 is eccentrically mounted to an output shaft 36 of the gear motor 32. A roller 38 is mounted to one of the side support plates 14 of the base B, the roller 38 extending horizontally inwardly therefrom, that is towards the light-emitting unit U. The eccentric drive member 34 is adapted, for instance via gravity forces, into engagement with the roller 38.

[0021] As the gear motor 32 and the eccentric drive member 34 turn, the roller 38, which is fixed to the base B, forces the light-emitting unit U to oscillate in view of the eccentricity of the drive member 34 relative to the output shaft 36 of the gear motor 32. Figure 5 shows two positions (one in full lines and one in broken lines) of the drive member 34 as the two resulting positions (in corresponding full lines and broken lines) of the light-emitting unit U. Figure 6 shows in broken lines a further position of the drive member 34 and the associated resulting position of the light-emitting unit U. Therefore, the continued rotation of the gear motor 32 causes the light-emitting unit U to oscillate. Other means to produce such oscillation can be contemplated. The movement of the light-emitting unit U and the actuation of the light emitting sources 28 is done via a control panel 40.

[0022] The light emitting sources 28 emit an ample amount of infrared energy from 633 to 900nm range light spectrum (e.g. 633nm, 700nm or 852nm), and are used along with parabolic reflectors and selective narrow band transmitting glass filters to produce an effective infrared photo light therapy on the thigh area of the user U while he/she utilizes the treadmill T. The light-emitting unit U oscillates for instance approximately 15 degrees every minute via the 1 RPM gear motor 32, thereby enabling the user U to receive uniform energy on his/her legs.

[0023] Device D can be used in a stand-alone vertical floor-mounted manner, behind the treadmill T of various manufacturers (as in Figure 1) or it can be attached to the treadmill or other exercise machine by using clamps, bolts and other appropriate mechanical fastening devices.

[0024] This selected energy is able to reduce pore sizes, improve skin complexion, heal wounds faster, energize the lower epidermis for producing collagen and aid in gradually reducing cellulite.

[0025] The selective infrared energy is also able to penetrate approximately ½" in depth to increase the blood flow for even more benefits for training athletes.

[0026] The device D can be manufactured out of molded plastics or aluminum, metal extrusion and sheet metal formed panels. The ballasts that are enclosed power the light emitting sources 28 (e.g. quartz infrared lamps) while a fan cools the filters, the acrylic shield and other components.

[0027] A filter specifically made to eliminate the ultraviolet and some of the visible range wavelengths is provided for user's safety.

[0028] There is a safety switch that instantly turns the power off to the individual light emitting sources 28 in case that the filter is removed or cracked, broken, or shattered.

[0029] A totalizer type of hour counter records the hours of use to maintain the device D and replace lamps and other components. A digital timer that can have a maximum time exposure for the user's desire can start and stop the device D and can also be monitored remotely via a daisy chain system.

[0030] Although the present invention has been described hereinabove

by way of embodiments thereof, it may be modified, without departing from the nature and teachings of the subject invention as described herein.

1. An oscillating light therapy device comprising:

a base having a pair of side support plates;

a light emitting unit, the light emitting unit being provided with a housing, at least one light source, a parabolic reflector and a selective narrow band transmitting glass filter;

a pair of cylindrical members mounted to the light emitting unit and extending horizontally outwardly from the housing, each of the pair of cylindrical members sitting, by gravity, in a recess of each of the side support plates, and providing a pivot point for a pivotal oscillating motion of the light emitting unit; and

a movement imparting mechanism comprising a cylindrical drive member, a gear motor located inside the light emitting unit, and a roller mounted to the base and extending towards the light emitting unit, the cylindrical drive member being eccentrically mounted to an output shaft of the gear motor, the cylindrical drive member being adapted to engage, via gravity forces, with the roller;

wherein the movement imparting mechanism is configured to pivotally displace the light emitting unit relative to the base along a 15° angle, providing the pivotal oscillating motion of the light emitting unit along a vertical plane; and

wherein the at least one light source is configured to transmit light at wavelengths within a range of 633 nm to 900nm and emits light forwardly of the base.

2. The oscillating light therapy device as defined in claim 1, wherein the light emitting unit includes at least two light sources.

3. The oscillating light therapy device as defined in claim 2, wherein the light sources are disposed one above the other.

4. The oscillating light therapy device as defined in any one of claims 1 to 3, wherein each light source is a quartz infrared lamp.

5. The oscillating light therapy device as defined in any one of claims 1 to 4, wherein the movement imparting mechanism is configured to displace the light emitting unit along the 15° angle every minute.

6. The oscillating light therapy device as defined in any one of claims 1 to 5, wherein the filter is provided for eliminating unsafe ultraviolet and visible range wavelengths from the transmitted light.

7. The oscillating light therapy device of claim 1, wherein the pair of side support plates extends vertically upwardly from the base; and

wherein the pair of cylindrical members are supported by the side support plates, to define the pivotal displacement of the light emitting unit relative to the base, and wherein the at least one light source is mounted in the housing and oriented to emit light from a forward surface of the housing.

8. An oscillating light therapy device in combination with an exercise machine, the exercise machine being adapted to be used by a user, the light therapy device comprising:

a base having a pair of side support plates;

a light emitting unit, the light emitting unit being provided with a housing, at least one light source, a parabolic reflector and a selective narrow band transmitting glass filter, the parabolic reflector and the glass filter being provided for the light source;

a pair of cylindrical members mounted to the light emitting unit and extending horizontally outwardly from the housing, each of the pair of cylindrical members sitting, by gravity, in a recess of each of the side support plates, and providing a pivot point for a pivotal oscillating motion of the light emitting unit; and

a movement imparting mechanism comprising a cylindrical drive member, a gear motor located inside the light emitting unit, and a roller mounted to the base and extending towards the light emitting unit, the cylindrical drive member being eccentrically mounted to an output shaft of the gear motor, the cylindrical drive member being adapted to engage, via gravity forces, with the roller;

wherein the movement imparting mechanism is configured to pivotally displace the light emitting unit relative to the base along a 15° angle providing the pivotal oscillating motion of the light emitting unit along a vertical plane; and

wherein the at least one light source is configured to transmit light at wavelengths within a range of 633 nm to 900 nm and emits towards the user's body forwardly of the base along the vertical plane as the user is using the exercise machine.

9. The combination of claim 8, wherein the light emitting unit includes at least two light sources.

10. The combination of claim 9, wherein the light sources are disposed one above the other.

11. The combination of any one of claims 8 to 10, wherein each light source is a quartz infrared

lamp.

12. The combination of any one of claims 8 to 11, wherein the movement imparting mechanism is configured to displace the light emitting unit along the 15° angle every minute.

13. The combination of any one of claims 8 to 12, wherein the filter is provided for eliminating unsafe ultraviolet and visible range wavelengths from the transmitted light.

14. The combination of any one of claims 8 to 13, wherein the exercise machine is a treadmill on which the user is standing, with the light emitting unit being positioned behind the user and with the light emitting unit being directed towards the user.

15. The combination of claim 8, wherein the pair of side support plates extends vertically upwardly from the base; and

wherein the pair of cylindrical members are supported by the side support plates, to define the pivotal displacement of the light emitting unit relative to the base, and wherein the at least one light source is mounted in the housing and oriented to emit light from a forward surface of the housing.

16. An oscillating light therapy device comprising:

a base having a pair of side support plates;

a light emitting unit, the light emitting unit being provided with at least one light source, a parabolic reflector and a selective narrow band transmitting glass filter;

a pair of cylindrical members mounted to the light emitting unit and extending horizontally outwardly therefrom, each of the pair of cylindrical members sitting, by gravity, in a recess of each of the side support plates, and providing a pivot point for a pivotal oscillating motion of the light emitting unit; and

a movement imparting mechanism comprising a cylindrical drive member, a gear motor located inside the light emitting unit, and a roller mounted to the base and extending towards the light emitting unit, the cylindrical drive member being eccentrically mounted to an output shaft of the gear motor, the cylindrical drive member being adapted to engage, via gravity forces, with the roller;

wherein the movement imparting mechanism is configured to pivotally displace the light emitting unit relative to the base, providing the pivotal oscillating motion of the light emitting unit along a vertical plane; and

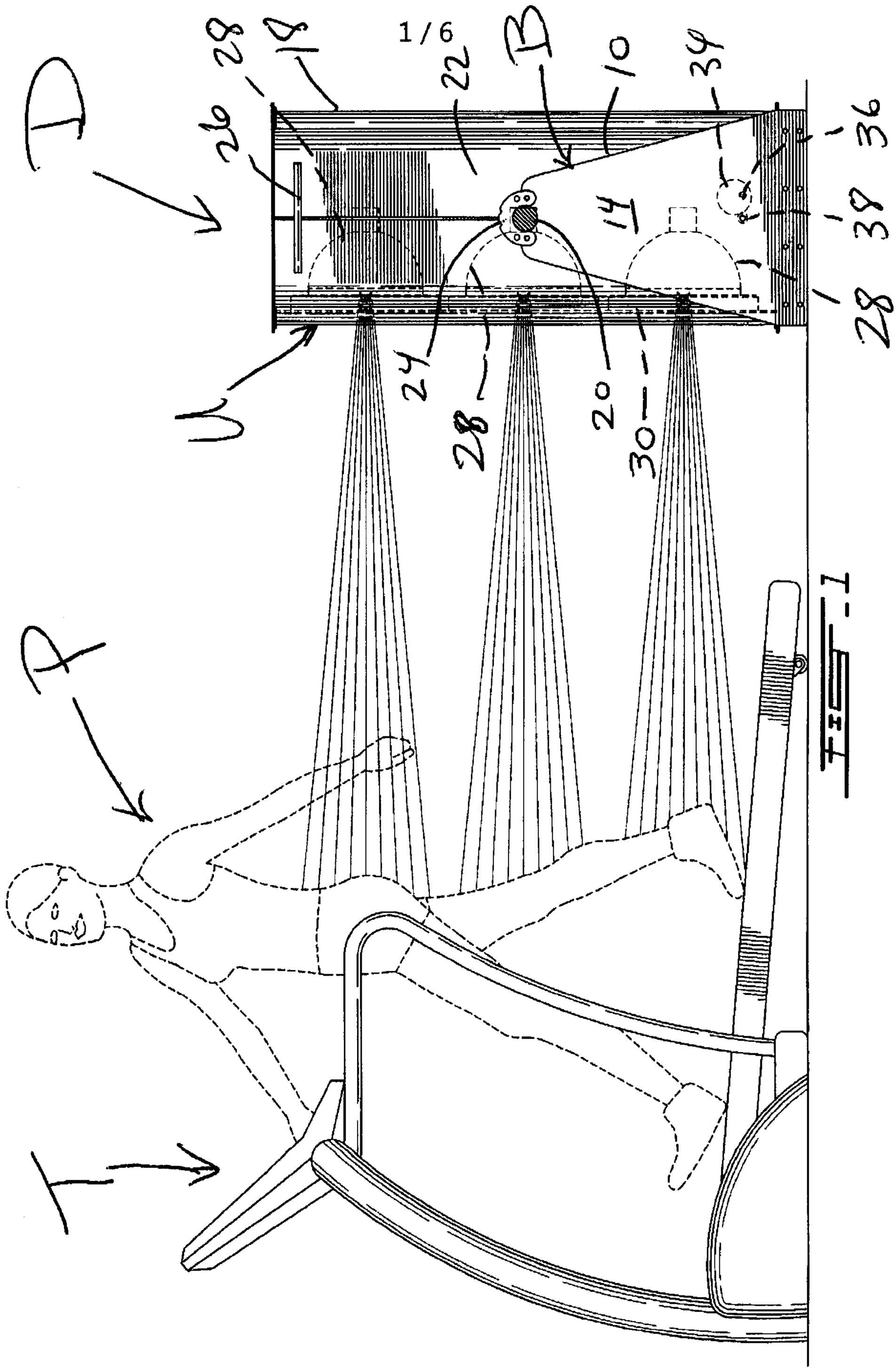
wherein the at least one light source is configured to transmit light at wavelengths within a range of 633 nm to 900 nm and emits light forwardly of the base.

17. The oscillating light therapy device as defined in claim 16, wherein the light emitting unit includes at least two light sources.

18. The oscillating light therapy device as defined in claim 17, wherein the light sources are disposed one above the other.

19. The oscillating light therapy device as defined in any one of claims 16 to 18, wherein each light source is a quartz infrared lamp.

20. The oscillating light therapy device as defined in any one of claims 16 to 19, wherein the movement imparting mechanism is configured to displace the light emitting unit along a 15° angle every minute.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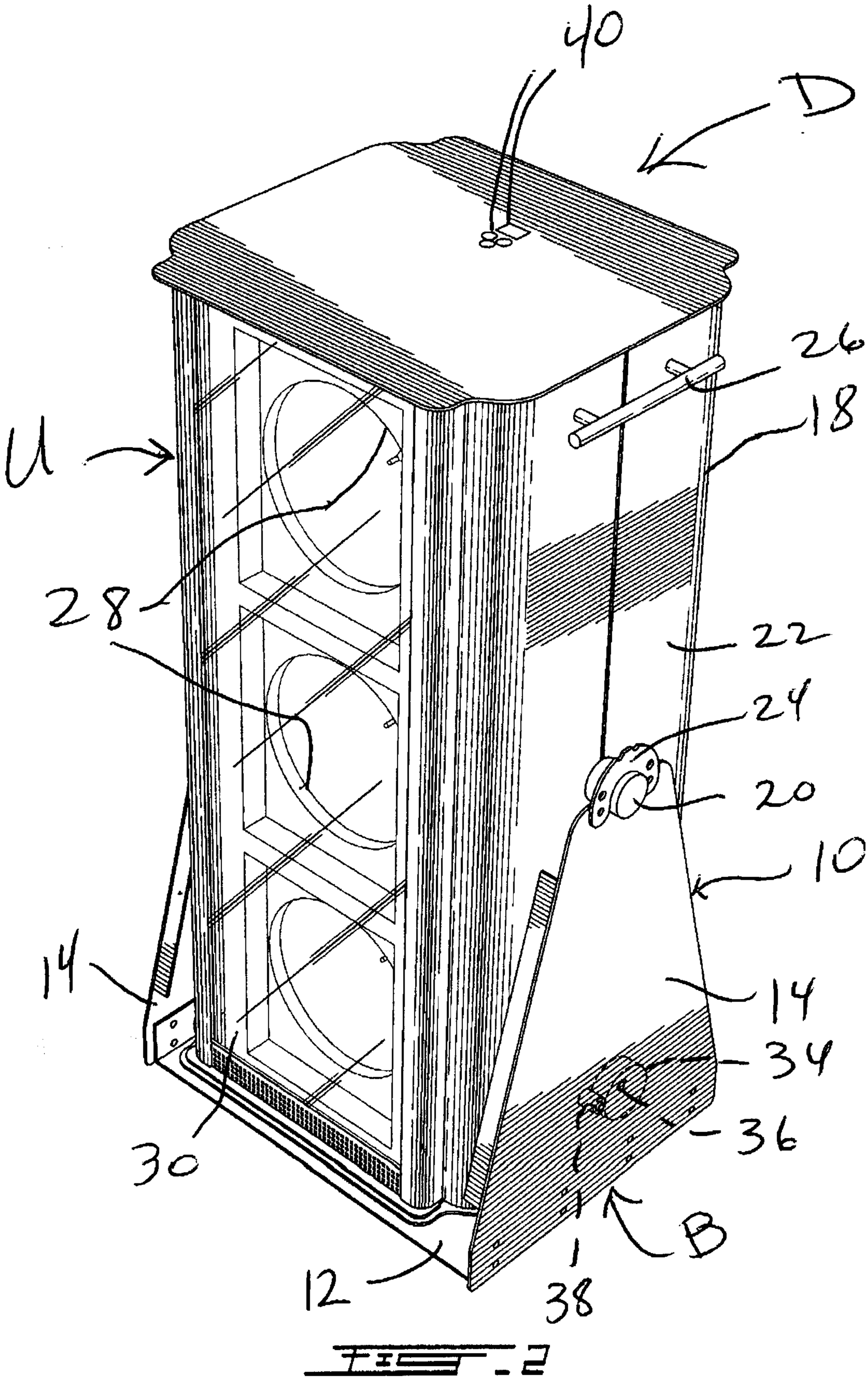


FIG. 2

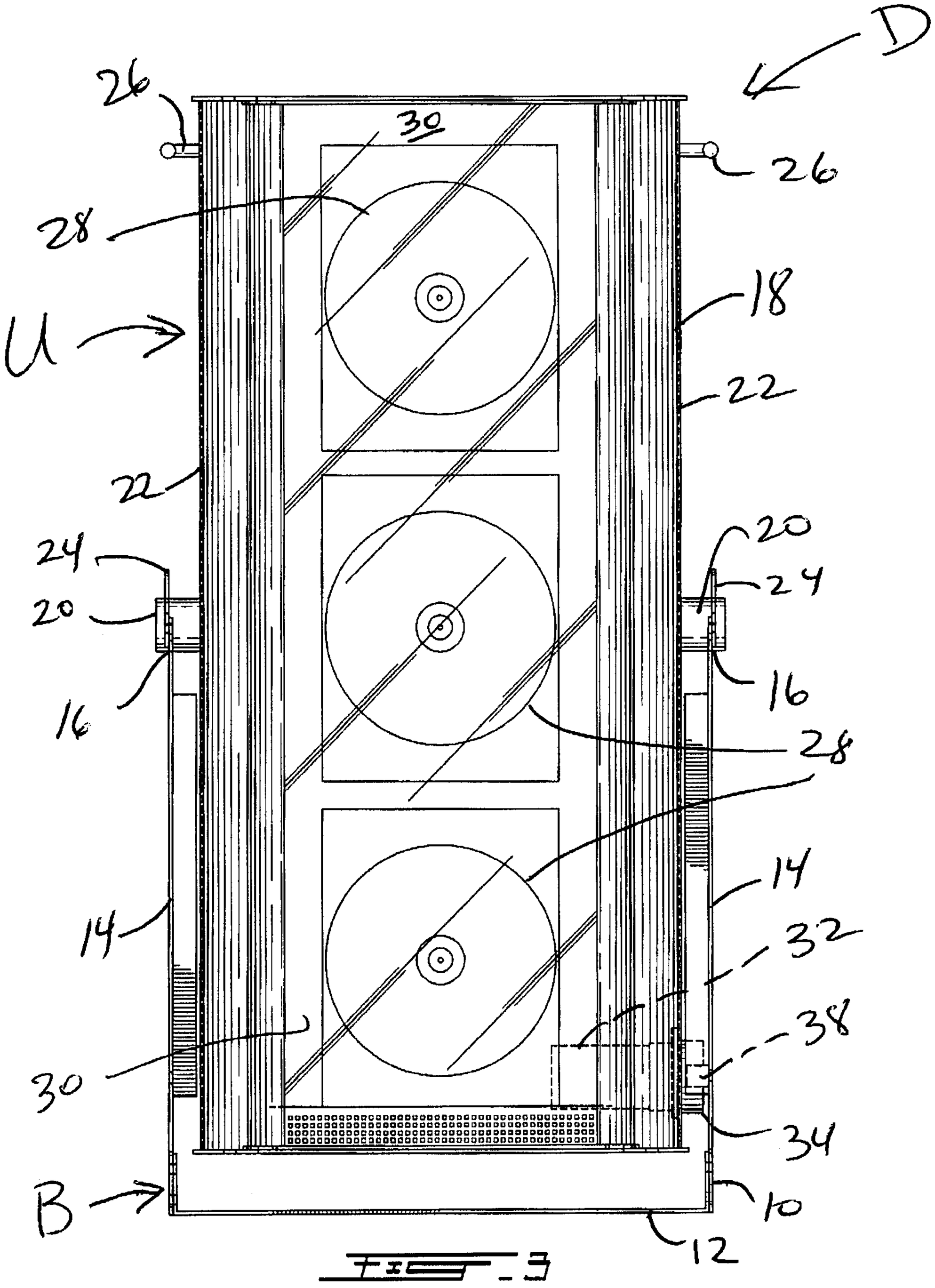
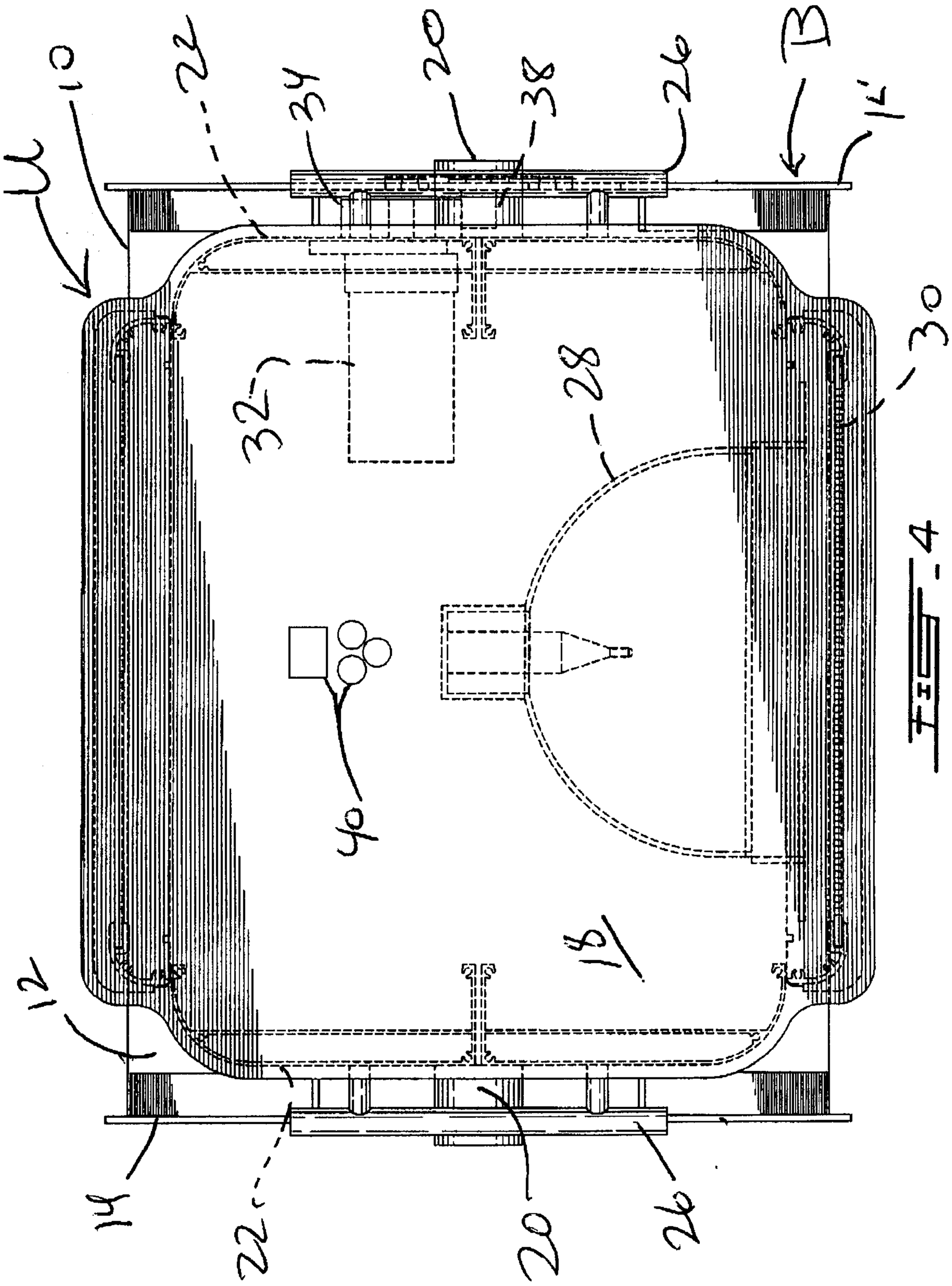


FIG_3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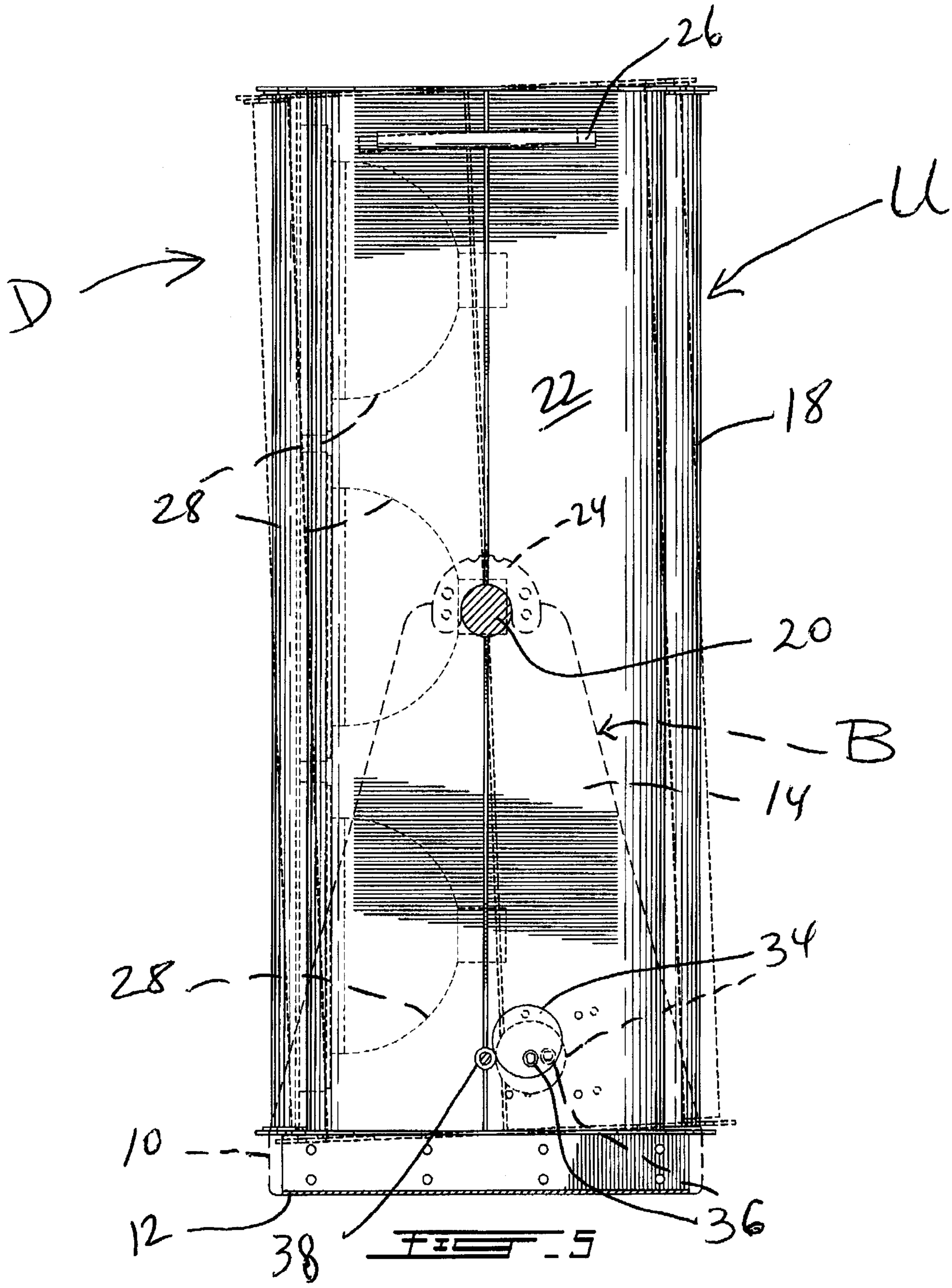


FIG. 5

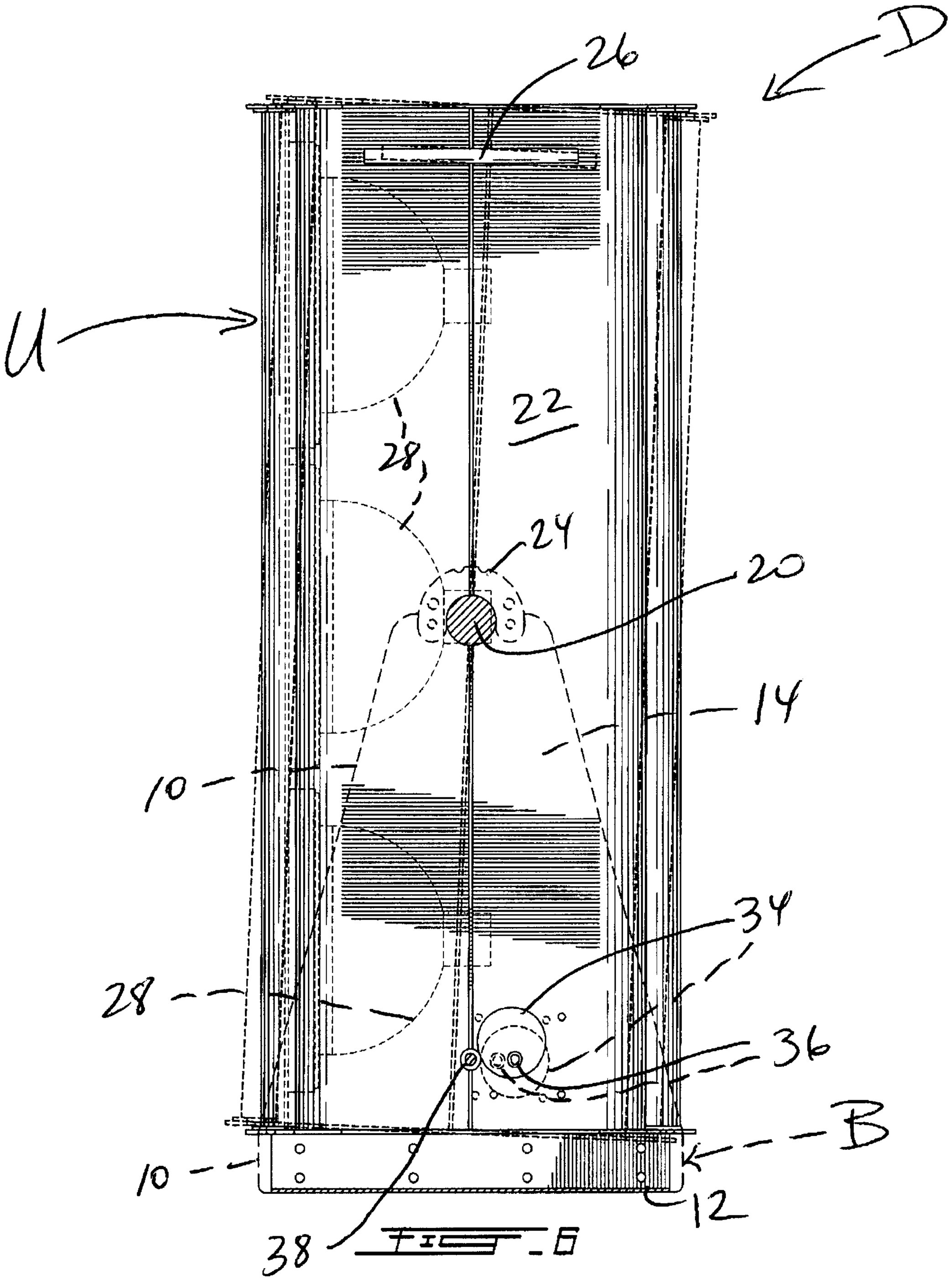
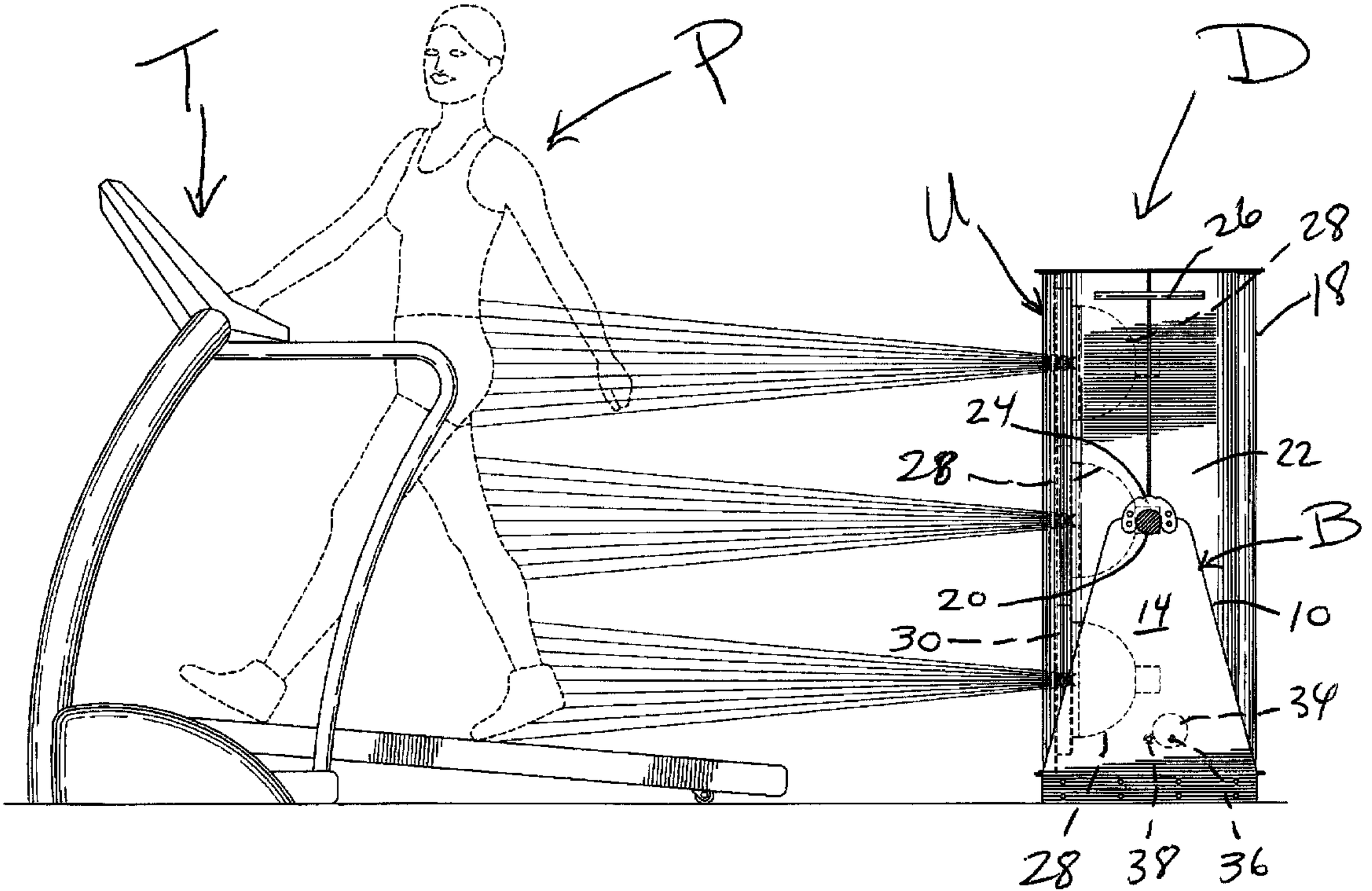


FIG. 6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