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ADJUSTABLE POSITIONING AND SUPPORTING DEVICE

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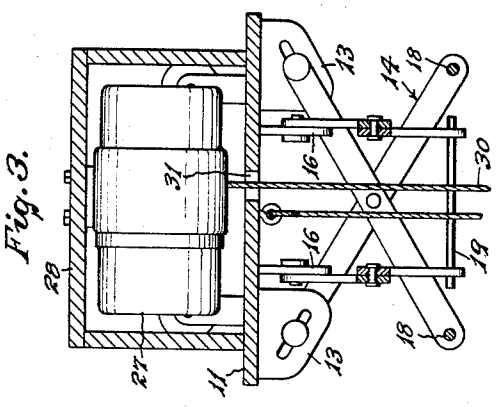


Fig. 3.

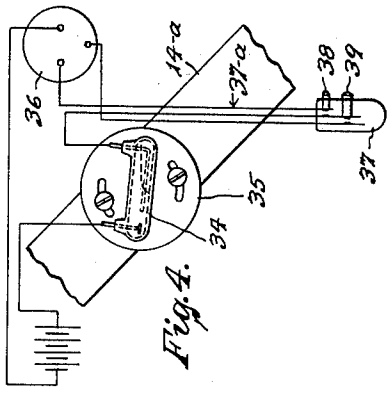


Fig. 4.

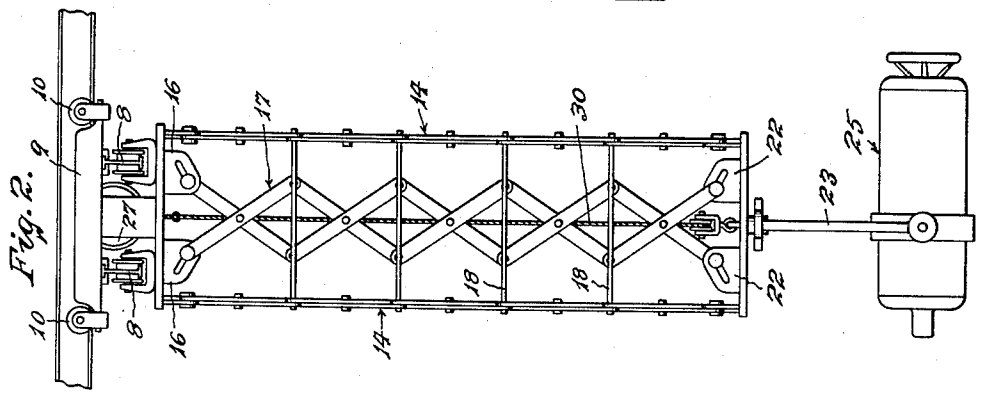


Fig. 2.

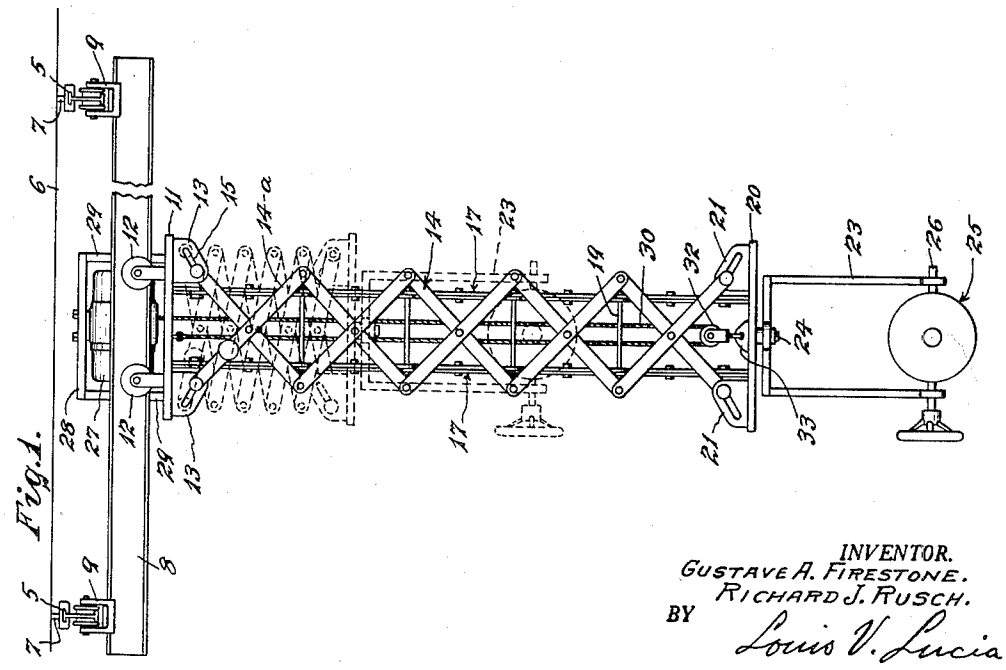


Fig. 1.

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ADJUSTABLE POSITIONING AND SUPPORTING DEVICE

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1 Claim. (Cl. 212—128)

This invention relates to an adjustable positioning and supporting device and more particularly to a device for supporting and adjustably positioning X-ray and photographic devices and other devices and equipment.

An object of this invention is to provide such a device which is easy to use and adjust and highly efficient in its operation.

A further object of the invention is to provide such a device which may be used in conjunction with an electric hoist, or the like, for raising and lowering the device or apparatus supported thereby and locating said device or apparatus in any desired position relatively to an object upon which it is used.

Further objects and advantages of our invention will be more clearly understood from the following description and from the accompanying drawings in which:

Fig. 1 is a front view of a device embodying the present invention.

Fig. 2 is a side view thereof.

Fig. 3 is an enlarged view, in central vertical section, of the upper portion of said device.

Fig. 4 is a diagrammatic view of a limit switch, used in connection with my invention, and the electric circuit controlled thereby.

As shown in the drawings, our improved device is mounted upon an overhead track system which may include a pair of beams 5—5 that are mounted to a ceiling, indicated at 6, by suitable lugs 7—7 and a pair of bridge beams 8—8 which are secured to suitable carriages 9—9 that are suspended on the beams 5—5 by wheels 10—10 which roll lengthwise on the bottom flanges of the said beams 5—5.

Our improved device includes an upper platform 11 that is mounted on the bridge beams 8—8 by suitable wheels 12—12 which roll lengthwise of said beams on the bottom flanges thereof. The said platform has depending from opposite sides thereof pairs of brackets 13—13 to each pair of which there is adjustably secured an end of a lazy tong extendible outer unit 14 which consists of a system of jointed bars in which the free ends of the bars at the upper end of the said unit are pivotally and slidably mounted in slots 15 in each of the brackets 13. The said platform 11 also has opposed pairs of brackets 16—16 upon which are similarly mounted lazy tong extendable units 17—17 which are disposed between the units 14—14.

The said outer units 14—14 are secured together by means of crossbars 18 which extend between the pivoted ends of their respective bars and stiffen the units against twisting movement. The units 17—17 are similarly connected by crossbars 19.

At the bottoms, or lower ends, of the said lazy tong units, there is mounted a lower platform 20 having upright brackets 21—21 and 22—22 thereon which are secured to the ends of the units 14 and 17, respectively, in the same manner as the upper ends of the said units are secured to the top platform 11.

A yoke 23 depends from and is rotatably mounted upon the lower platform by means of a swivel post 24.

As shown in the drawings, an apparatus, such as an X-ray machine, indicated at 25, may be mounted upon the said device by means of a suitable bar 26 which is rotatable in the yoke 23 to allow angular adjustment of the said machine.

In order to raise and lower the said machine and also position it at any desired height, our improved device is provided with an electrical hoist 27 which is suspended from a supporting plate, or bar, 28 that is supported by vertical members 29—29 which are mounted upon the top platform 11. The said hoist has a suitable cable 30 which extends through a hole 31 in the top platform 11 and extends around a pulley 32 that is anchored to a bracket 33 which is secured to the lower platform 20 and is adapted to raise said device to the position indicated in dotted lines in Fig. 1.

In order to prevent the said device from lowering to a position beyond the limit of the extendibility of the units 14 and 17, there is preferably provided a limit switch, indicated at 34, which may be of the mercury type. This switch may be mounted on a plate 35 which is secured upon a bar of one of the extendible units, indicated at 14–*a*, and is rotatably adjustable thereon so as to position the switch relatively to the horizontal to cause shifting of the mercury thereof to break the electrical circuit when the device has been extended to a predetermined limit. As shown in Fig. 4, the said limit switch 34 is connected in series with the electric motor 36 of the hoist and a suitable dual control switch in a control handle 37 which may be mounted upon the end of an electric cord 37–*a* depending from the hoist and which is operable with different push-buttons 38 and 39 to cause energization of the motor 36 for selectively operating the hoist to raise or lower the yoke 23 and the apparatus mounted thereon to any desired height. When the limit switch 34 is in closed position, the motor is controlled entirely by either of the switches 38 or 39. When the device has been lowered to the limit of the extendible units, the said device limit switch will be tipped off the horizontal so that the mercury will flow toward one end of the tube and disconnect the two terminals thereof and thereby break the circuit and automatically de-energize the motor 36.

In the use of our improved device, the apparatus 25 may be raised or lowered to the required height, by simply operating the switches in the control handle 37, and then rotated about the axis of the post 24 and shaft 26 to bring said apparatus into any desired position with relation to an object upon which it is to be used.

I claim:

A positioning and supporting device of the character described comprising an upper platform movably suspended from a track, brackets depending from said upper platform, a bottom platform, brackets extending vertically from the top of said bottom platform, a pair of extendible outer units comprising a plurality of pivotally jointed bars movably secured to the brackets of the upper and lower platforms and interconnected by crossbars, a separate pair of extendible inner units similarly connected to the upper and lower platforms and contained within said outer pair of extendible units and their respective connecting bars on vertical planes perpendicular to the planes of the said outer pair, an electric hoist mounted upon the upper platform, anchoring means upon the bottom of said upper platform, a pulley secured to the lower platform, a cable extending from said hoist, through an opening in the upper platform, around the said pulley and secured to said anchoring means, and

means upon said lower platform for rotatably mounting a separate apparatus thereon.

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