Feb. 28, 1956 I. J. LANDAU 2,736,100

HEIGHT MEASURING DEVICE

Filed Oct. 4, 1954

Fig. 1.

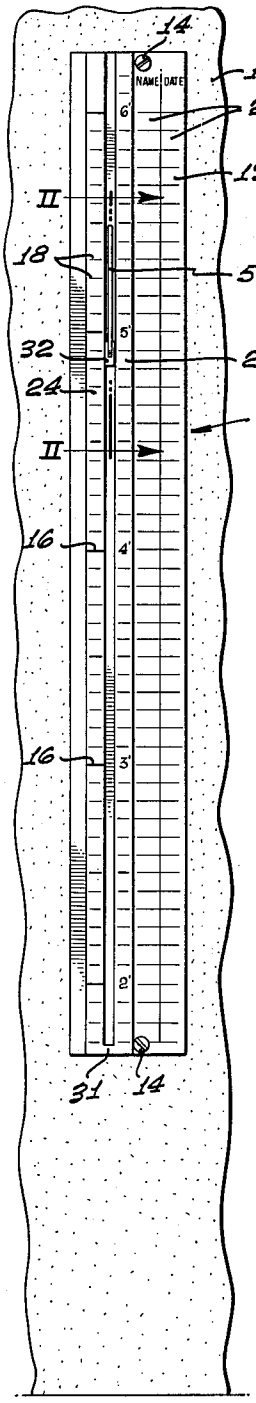


Fig. 2.

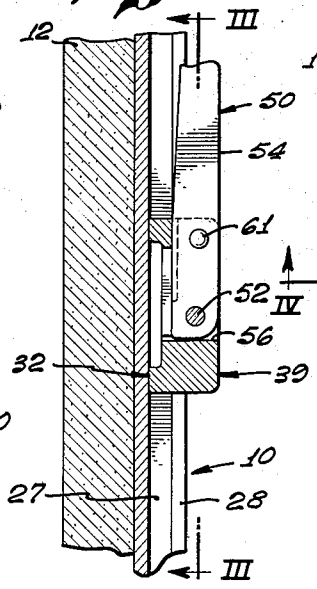


Fig. 3.

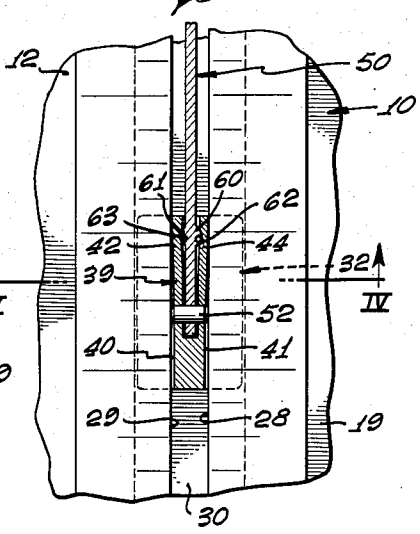


Fig. 4.

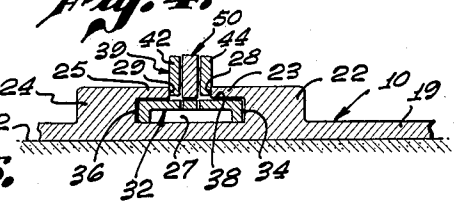


Fig. 5.

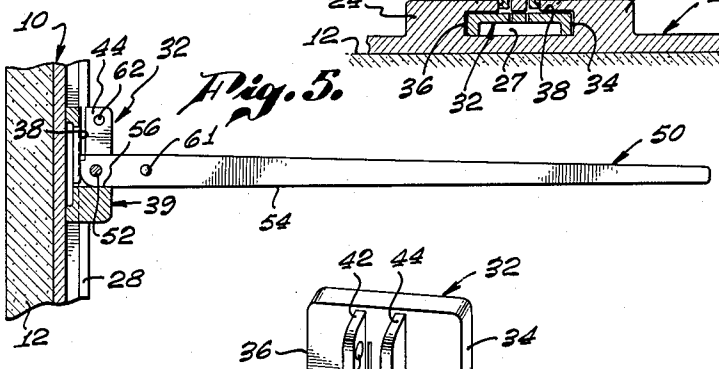
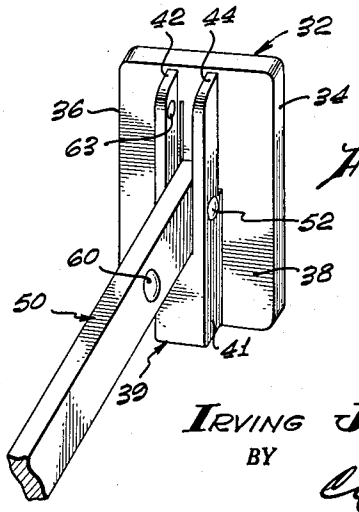


Fig. 6.



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HEIGHT MEASURING DEVICE

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2 Claims. (Cl. 33—169)

This invention relates generally to a device for measuring height and is particularly directed to an inexpensive mechanism which may be fixed to the wall or similar vertical supporting surface in a home.

In the preferred embodiment of the invention hereinafter shown and described, there is a longitudinally extending frame whose front surface includes a series of height indicating indicia. The frame is so constructed as to provide a hollow internal channel and the front wall defining the channel is interrupted by a longitudinal slot. The frame may be mounted upon any suitable vertical supporting surface in such a way that the indicia spaced therealong encompass the desired range of heights to be measured. Since the present invention is particularly well adapted to the measurement of children's heights during growth, the indicia will normally extend from about two feet to about six feet from the floor, although it will be readily understood that for other applications this range may be varied as desired.

Within the channel formed in the frame there is a slidably mounted carrier, and a pivoted arm is attached to the carrier for swinging movement through a vertical arc from an upper position parallel to and adjacent the frame to a lower position projecting horizontally from the frame. Thus the pivotable bar may be made to rest upon the head of a person whose height is being measured by moving the carrier downwardly within the channel. When not in use, the arm may be swung upwardly in order not to interfere with the normal use of the room or passageway where the frame is mounted. Means are incorporated in the carrier for releasably retaining the arm in its upper, inoperative position and desirably such means also serve to frictionally clamp or lock the carrier in position relative to the frame.

An object of the invention is, therefore, to provide a novel height measuring device.

Another object of the invention is to disclose a height measuring device including an elongated frame for mounting upon a vertical supporting surface and longitudinally movable means carried by the frame and adapted to be collapsed into compact relation with the frame when the device is not in use.

A further object of the invention is to provide a device for the above character including a carrier frictionally slidable within the frame and lockable in selected position thereon.

Another object is to disclose a height measuring device having a pivotally mounted bar, wherein movement of the bar to inoperative position locks all parts of the device against movement.

Yet another object is to provide a height measuring apparatus particularly adapted for home use which is rugged and durable in operation and relatively inexpensive to manufacture.

These and other and allied objects and purposes of the invention will be understood from a study of the following description of a preferred embodiment thereof, taken

in connection with the accompanying drawing in which:

Fig. 1 is a front elevational view of height measuring apparatus embodying the present invention attached to a fragmentarily shown vertical supporting surface such as a wall.

Fig. 2 is a fragmentary sectional view taken on line II—II of Fig. 1, showing a portion of the arm in its upper of inoperative position.

Fig. 3 is a view, partially in section, taken on line III—III of Fig. 2.

Fig. 4 is a sectional view taken on line IV—IV of Fig. 3.

Fig. 5 is a view similar to Fig. 2 except that the height measuring arm is in its lower or operative position.

Fig. 6 is a perspective view of the slidable carrier including the inner portion of the arm pivotally attached thereto.

Referring now in detail to the drawing, there is shown in Fig. 1 a longitudinally extended frame indicated generally at **10** which is fastened to a suitable vertical supporting surface such as a wall **12** by screws **14** or equivalent fastening means. On the front surface of frame **10** there is reproduced a linear scale including foot indicia **16** and intermediate inch indicia **18**. Frame **10** also includes a panel **19** on which there may be provided a pair of columns **20** in which the name and date notations of individual measurements may be entered adjacent the respective linear indicia **16** and **18**.

The frame **10** includes a pair of relatively thick flank elements **22** and **24** (see Fig. 4), each provided with an extension of reduced thickness **23** and **25** respectively. Within the space thus formed, there is a channel **27** generally rectangular in shape and extending the entire length of the frame **10**. The extensions **23** and **25** extend toward one another and terminate in laterally spaced opposed edges **28** and **29** respectively (see Fig. 3), defining a vertical slot **30** between the edges communicating with the channel **27** and similarly extending the entire length of the frame **10**, except that the slot may be closed at the bottom as indicated at **31**.

Within the channel **27** there is slidably mounted a carrier best seen in Fig. 6 and indicated generally at **32**. The main portion of carrier **32** is rectangular or block-like in shape as shown, and includes parallel vertical side walls **34** and **36** and a flat front surface **38**, the entire rectangular block **32** being adapted to be received in channel **27** and to be slidable therein longitudinally of the frame **10**. The carrier **32** is provided with a forwardly projecting portion indicated generally at **39**, the lower part of which is generally rectangular in shape including parallel side walls **40** and **41** slidably received in the longitudinal slot **30** of frame **10**. The rectangular projection **39** is provided with a pair of laterally spaced upwardly extending parallel wings **42** and **44** which are spaced slightly forward from and out of contact with the front surface **38** of the carrier **32** (see Fig. 5). Thus the wings **42** and **44**, when made of slightly yieldable or resilient material, may be slightly spread apart at their upper ends in order to frictionally grip the inner edges **28** and **29** defining slot **30**.

An elongated height measuring arm indicated generally at **50** is pivotally attached to the carrier **32**, preferably by a pivot pin **52** extending between the wings **42** and **44**, the axis of the pin **52** being horizontally disposed and spaced substantially below the tops of the wings **42** and **44**. The arm **50** is provided with a rectilinear lower edge **54**, the inner end of which is adapted to rest upon the upwardly directed shoulder **56** of the rectangular block portion **39** between the lower ends of the wings **42** and **44**. Thus the shoulder **56** constitutes a stop means defining the lower limit of pivotal movement of the bar **50** about the pivotal axis **52**, as seen in

Fig. 5. The arm 50 may be swung or pivoted upwardly into the position seen in Figs. 2 and 3 and means are preferably included in accordance with the present invention for not only retaining the arm 50 in its upper or inoperative position but also to simultaneously serve to lock the carrier 32 against slidable movement within the channel 27.

In the present illustrative embodiment of the invention such means are afforded by a pair of protuberances 60 and 61 carried by the arm 50 spaced outwardly from the pivot pin 52 together with a pair of mating recesses or depressions 62 and 63 formed on the opposed inner surfaces of wings 42 and 44 and adapted to register with and receive the outermost portions of protuberances 60 and 61 when the arm 50 is moved to its upper position. Desirably the protuberances 60 and 61 are of somewhat greater depth than the depth of the recessed depressions 62 and 63 so that when the arm 50 is moved into its upper position the wings 42 and 44 are forced slightly outwardly away from one another so that their outer surfaces frictionally grip the edges 28 and 29 of slot 30 (see Fig. 3). Thus the entire assembly of carrier 32 and pivotal arm 50 is prevented from movement when in the position shown in Fig. 3 until the arm 50 is manually moved outwardly and downwardly through a vertical arc to permit wings 42 and 44 to resume their normal unflexed position out of frictional contact with the edges 28 and 29.

The operation of the present invention will in major respects be understood from the foregoing description. It may be noted that the carrier 32, the arm 50 and the frame 10 may be all made of a fairly rigid material such as plastic or light metal. The carrier 32, block 39 and wings 42 and 44 may be formed integrally, and carrier 32 itself is desirably so proportioned relative to the dimensions of channel 27 as to afford some frictional contact with the inner surfaces defining the channel. By this construction, at least a small amount of manual or digital force is needed to move the carrier 32 upwardly or downwardly in channel 27 even with the height measuring arm 50 in its open or operative position, seen in Figs. 5 and 6. Of course, as above explained in connection with Fig. 3, the carrier 32 is securely locked against longitudinal movement against frame 10 when the arm 50 is moved to its upper or closed position by reason of its fractional contact between wings 42 and 44 and the opposed edges 28 and 29.

In use, the arm 50 is moved to its horizontal position and the carrier 32 together with the arm is moved downwardly until the lower edge 54 of the arm contacts the head of the person whose height is being measured. The height is then read by observing the position of the lower edge 54 relative to the indicia 16 and 18 constituting the linear scale on frame 10. Records of heights may then be made by writing necessary data in the appropriate spaces of the panel 19.

Accordingly, it will be seen that I have provided an inexpensive device for measuring height, particularly adapted for use in the home in measuring the heights of growing children. Because the arm 50 may be folded up into parallel relation with the frame 10 when the device is not in use, the entire apparatus occupies a negligible amount of room.

Modifications and changes from the specific preferred form of the invention hereinabove illustratively shown will occur to those skilled in the art. For example it is not necessary that arm 50 be provided with a pair of protuberances to engage with the inner surfaces of the wings 42 and 44; only a single protuberance or thickened portion may be used if desired. By the same token the thickened portion may be incorporated in the upper inner faces of one or both wings 42 and 44, the important factor being that upward movement of arm 50 serves to frictionally lock itself into inoperative position and also to frictionally clamp carrier 32 against longitudinal movement relative to frame 10. Modifications and changes not departing from the spirit of the invention are intended to be embraced within the scope of the appended claims.

I claim:

1. A height measuring device comprising: a vertically disposed elongated hollow frame having a vertical channel therein and a vertical slot in communication with the channel; a carrier including a body slidably mounted in the channel, a forwardly projecting integrally formed portion extending through the slot and a pair of integrally formed laterally spaced parallel wings extending upwardly from said portion and spaced forwardly out of contact with the body; and an elongated arm pivotally attached to said wings for movement about a horizontal axis, said arm and the inner opposed surfaces of the wings being provided with interengageable retaining means for holding the arm in upper position with its inner portion between the wings.

2. The invention as stated in claim 1 wherein the rear marginal areas of said wings are in said slot and are flexed into frictional engagement with frame members defining the slot when the arm is in its upper position.

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