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(54) **A device for measuring height**

(57) A device for measuring height comprises a support 1 for securing to a wall and a frame 2 slidably mounted therein, the frame having a pivot plate member 23 which may be pivoted to a horizontal position to rest on the head of a person whose height is to be measured. The scale is provided by an adhesive measuring tape which is adhered to the support 1 after this has been secured to a wall. The support may be attached to the wall by adhesive, or by screws or nails.

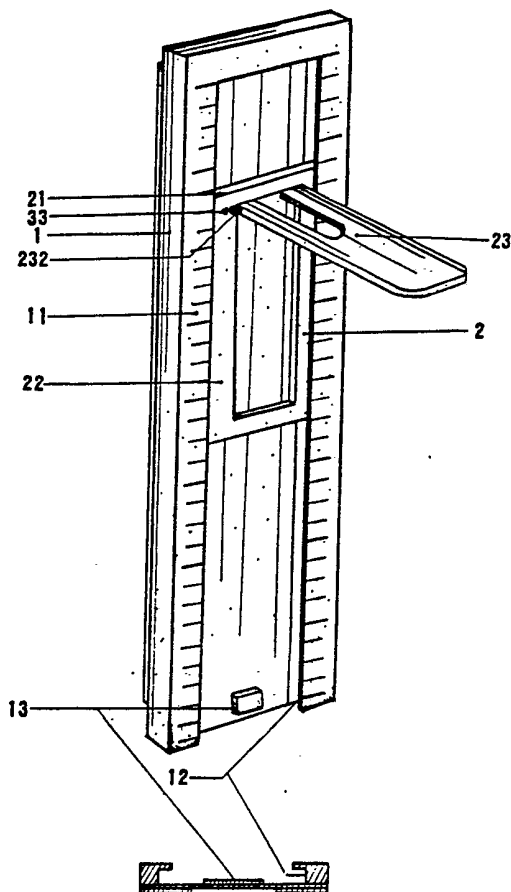


FIG. 2

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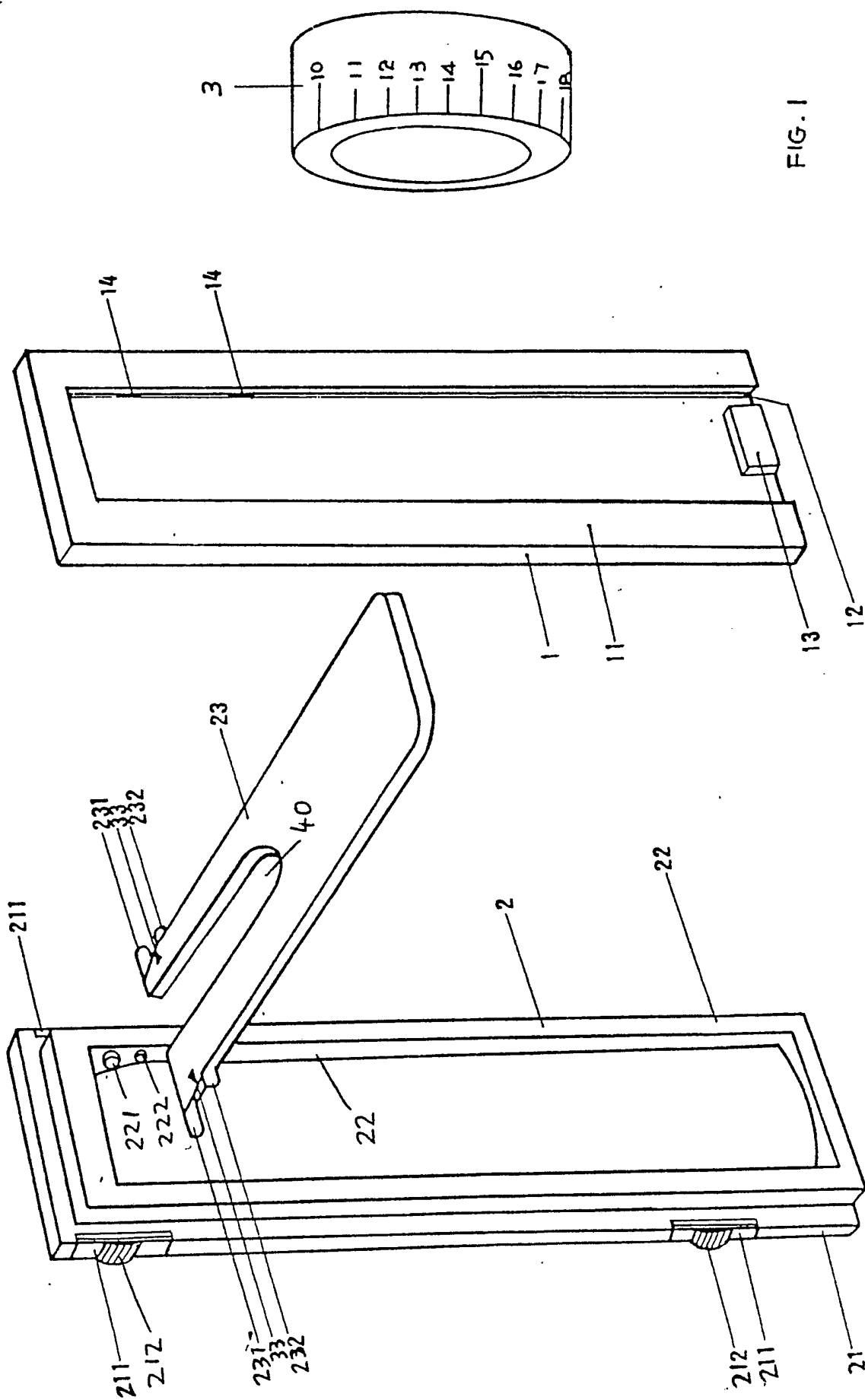


FIG. 1

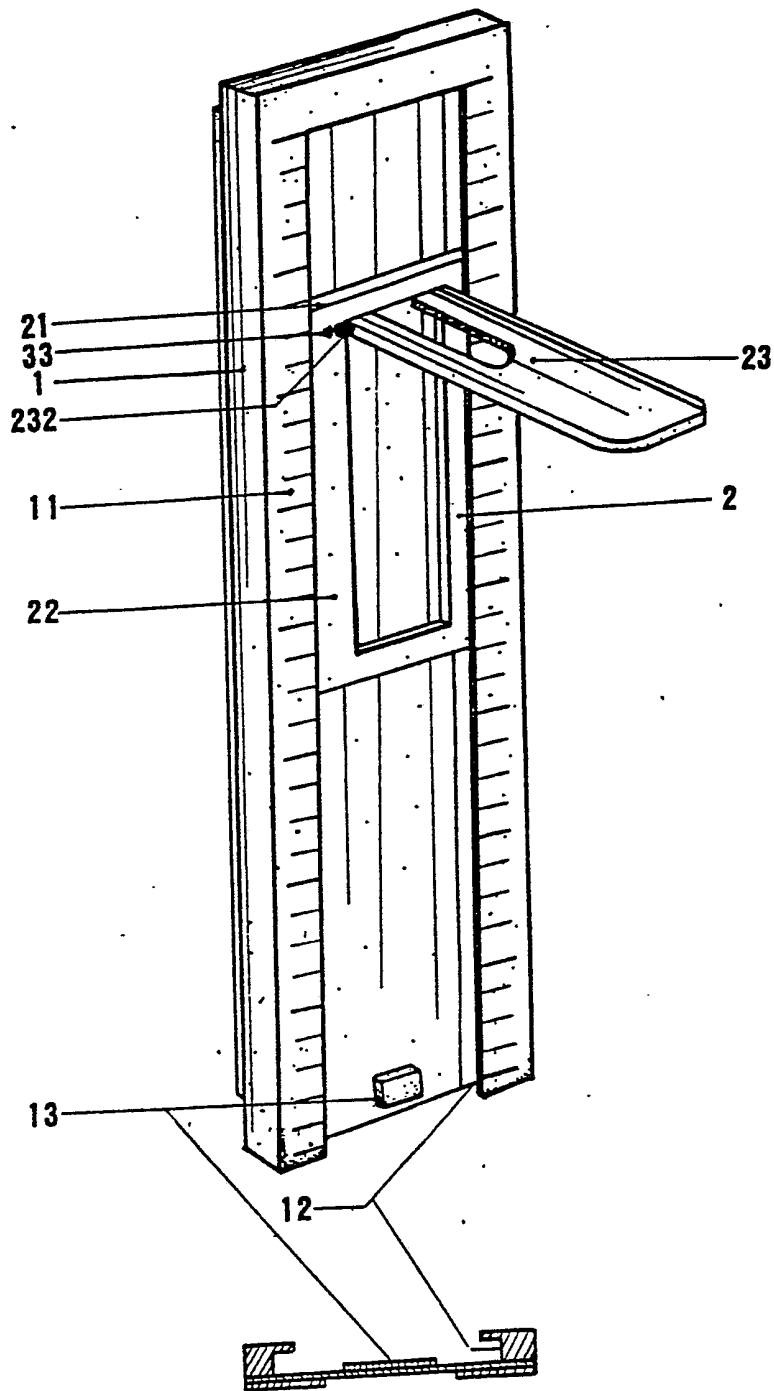


FIG. 2

A Device for Measuring Height

An important feature of any nation is the physique of the people. According to anthropologists' studies the development of people's physique generally varies with geographical location. Thus, according to the evolution process of struggling for survival and the law of natural selection, people who live in the frigid zones are stronger, and those who live in the torrid zones tend to be more short and fat.

For a long time every nation in the world has realized that, to establish a powerful nation, the people of the nation should improve their body strength, and the authorities are striving to improve people's health and body strength. At the same time, they are taking more care of the physical development of the next generation. In addition to nutrition and exercise, people also undergo physical examination periodically.

For the above reasons, medical studies take the averages of children's body weight and body height to evaluate their physical development and have concluded that the development of body weight and body height of the children has a close relation with the economic development of the country. This conclusion applies not only to a nation but also to a family. Currently, each family does not have a many children and the parents are taking more care of their children regarding their physical development. During adolescence, the parents are very concerned about the development of body weight and body height of their children. Also boys at school talk about their body height, and some of them measure and mark down their body height each day or periodically.

Currently, there are various measuring devices available in the market for the measurement of body height. Some of these devices incorporate a weight meter. These devices have the following disadvantages:

1. They are too heavy for convenient handling and occupy too much space in a room.

2. They are not feasible for self-help; they require other people to assist in the measurement.

3. They provide poor accuracy, and have no means for recording the results.

In view of the above problems of conventional measuring devices the present invention seeks to overcome or reduce one or more of the problems and to provide a compact device for measuring one's own height by oneself.

According to the present invention there is provided a device for measuring height comprising a support member arranged to be secured to a wall, and a frame member arranged to slide in the support member and having means for holding the frame member in an adjusted position, and a measuring plate member pivotally connected to the frame member so as to be pivotal between a first position in which it extends substantially perpendicularly to the frame member, and a second position in which it lies against or within the frame member substantially parallel therewith, means being provided for releasably holding the plate member in its first position.

The support member preferably comprises a flat base arranged to lie against the wall and two mutually-facing

parallel channels, the frame member being arranged to slide in the channels.

5 In a preferred embodiment the front surfaces of the means defining the channels of the support member are initially blank, and a measuring tape is provided for securing to at least one of the front surfaces after the device has been mounted on a wall at a desired height. The means for holding the frame member in the channels 10 may comprise at least one resiliently-biased element. The or each resiliently-biased element may comprise a projecting member and the frame member may comprise one or more holes for receiving the element(s) to more securely retain the frame member in a particular 15 position thereof.

In preferred arrangements the plate member has pivot pins at one end thereof which engage in corresponding pivot holes in the frame member, and further pins 20 adjacent said pivot pins to constitute the means for releasably holding the plate member in its first position. Adjacent the pivot holes in the frame member there may be provided further holes for receiving said further pins.

25 The channels of the support member may constitute the sides of a generally U-shaped member with a closed web at one end, and at the other end there may be provided a stop member to retain the inserted frame member.

30 At least some of, and preferably all, the parts of the device are made of polymeric material.

35 A preferred embodiment of the present invention will now be described, by way of example only, with reference to

the accompanying drawings of which:

Fig.1 shows an exploded view of a device for measuring heights in accordance with the present invention, with the frame member being shown at a much larger scale than the support member and with the measuring tape being shown at a larger scale than the frame member; and

Fig.2 shows a perspective view of the device of Fig.1 when assembled, and also a cross-sectional view thereof.

Referring to the drawings, a measuring device comprises a measuring support 1, a frame 2 and a roll of measuring tape 3, wherein the measuring support 1 and the measuring tape 3 carry adhesive for sticking.

The measuring support 1 is a double-layered flat structure, closed at the top end, which has a measuring strip 11 at each side to form measuring channels 12 with the bottom layer. Said measuring support 1 also comprises a protruding stopper 13 at the bottom on the front side for the retention of the measuring frame 2. The measuring frame 2 is a stepped flat strip. The step between the bottom and the upper portion forms a projection or tenon 21 for holding the measuring frame 2 in the measuring support 1 in a sliding relationship. The upper portion of the measuring frame 2 forms an open frame 22, which comprises a locating or pivot hole 221 and an engagement hole 222 at the top of each inner wall of the open frame. The measuring frame 2 also comprises a flat measuring plate member 23 which has an opening 40 at the front so as to make it resilient. The measuring plate member 23 comprises external locating pins 231 and engagement pins 232 to respectively align with the locating holes 221 and the engagement holes 222. The measuring plate member 23 has an arrowhead mark 33 at

the front for the indication of the measurement on said measuring tape 3. As shown in the drawings, each projection or tenon 21 slides in its respective measuring channel 12 of the measuring support 1. Each projection 21 has an elastic element 211 comprising a resilient wire and a location projection 212. The measuring strip 11 of the measuring support 1 has in the measuring channel two locating holes 14 which correspond to the locating projections 212 so that the latter can respectively engage in the locating holes 14 to prevent the fatigue of elasticity of the elastic element 211 while folding down plate member 23. For the assembly of the present device, as shown in Fig.2, it is very simple to place the measuring frame 2 in the measuring support 1 from below with each tenon 21 fitting in the respective channel 12 of the measuring seat, and then to stick on the stopper 13, and finally to stick the measuring tape 3 on the measuring strip 11 so as to make the device ready for measurement. The measuring tape 3 carries indicia according to the Imperial and/or Metric systems.

The locating of the above system is very accurate. When correctly placed, the device is firmly located. The combination of the firm attachment of the device to the wall with the sliding attachment between the frame member and the support member has a number of advantages. For example, with plate member 23 horizontal, children can easily measure the height to which they can jump; each time they jump up to touch plate member 23 from below it will slide upwardly until the limit of jumping is reached. The maximum height can then be read out easily and accurately. The height to which a person can kick, e.g. during rythm calisthenics or other exercises, can also easily be measured. To maintain the plate member 23 horizontal during such



measurements, pins 232 engage the front surfaces of frame 22.

While in use, one firstly chooses a blank wall for securing the device. For example, for a person approximately 159cm in height, the measuring support is first secured on the wall with the bottom of the measuring strip 11 located at 150cm above the floor. By sliding the measuring frame and the locating of the measuring plate member the person can accurately measure his or her body height without assistance. When the measuring process is finished, the height can be recorded in the blank area of the measuring support and the measuring plate member can be folded flat against the frame member so that the device is compact when not in use.

The above device is applicable for use in the home to stick on the wall of a bedroom or a study room for the children, or for use in school to stick on the wall of each classroom for the pupils to measure their body height by themselves at anytime. Furthermore, the device can also be combined with a thermometer, hydrometer or class schedule etc., to make it more diversified.

The above-described device is simple and can be used everywhere in the room, e.g. on a wall. By means of a measuring support, a measuring device is provided that can be arranged according to the actual height of the children, and is easy for collection, storage, and self-help operation. It is also very convenient for the children to measure their body height as a daily routine. It is easy to assemble, collapse and operate.

Various modifications may be made to the above-described device. For example instead of having adhesive on its rear surface, the support member 1 may have a hole therethrough to permit the device to be screwed or nailed to a wall. Alternatively two holes may be provided to enable the device to be hung on a wall. In another modification, the plate member 23 is pivoted to frame member 2 at a bottom region thereof, and the plate member 23 folds upwardly to be stored away. To hold the plate member 23 in its stored position, retention means may alternatively or additionally be provided in the region of the free end thereof. Any convenient sliding arrangement may be provided between the support and frame members; for example the support member may have projecting ribs and the frame member may have channels which slide over said ribs.

Claims

1. A device for measuring height comprising a support member secured to a wall, and a frame member arranged to slide in the support member and having means for holding the frame member in an adjusted position, and a measuring plate member pivotally connected to the frame member so as to be pivotal between a first position in which it extends substantially perpendicularly to the frame member, and a second position in which it lies against or within the frame member substantially parallel therewith, means being provided for releasably holding the plate member in its first position.

2. A device according to claim 1, wherein the support member comprises a flat base arranged to lie against the wall and two mutually-facing parallel channels, the frame member being arranged to slide in the channels.

3. A device according to claim 2, wherein the front surfaces of the means defining the channels of the support member are initially blank, and a measuring tape is provided for securing to at least one of the front surfaces after the device has been mounted on a wall at a desired height.

4. A device according to claim 2 or 3, wherein the means for holding the frame member in the channels comprises at least one resiliently-biased element.

5. A device according to claim 4, wherein the or each resiliently-biased element comprises a projecting member and wherein the support member comprises one or more holes for receiving the element(s) to more securely retain the frame member in a particular position thereof.

6. A device according to any preceding claim wherein the plate member has pivot pins at one end thereof which engage in corresponding pivot holes in the frame member, and further pins adjacent said pivot pins to retain the plate member in position.

7. A device according to claim 6, wherein adjacent said pivot holes in the frame member, there are provided further holes for receiving said further pins.

8. A device according to any preceding claim, wherein the channels of the support member constitute the sides of a generally U-shaped member with a closed web at one end.

9. A device according to claim 8, wherein the support member has a stop member at the other end, whereby to retain the inserted frame member.

10. A device according to any preceding claim wherein at least some of the parts are made of polymeric material.

11. A device for measuring body height, composed of:  
a measuring support, in double-layered flat structure,  
closed at the top, comprising at each side a measuring  
strip to form a measuring channel with the bottom layer,  
and also comprising at the top one locating hole each  
on both sides;

a measuring frame, of a stepped flat strip, having at  
each side a longitudinal rib for sliding in the  
respective measuring channel of the support each rib  
having at least one resilient wire and locating  
projection to hold the frame in an adjusted position in  
the support, the measuring frame having on each inner  
side wall a locating hole and a further hole;

a measuring plate comprising on each external side  
wall a locating pin and a retaining pin to  
respectively align with the locating hole and the  
further hole; and

a adhesive measuring tape, for sticking on the  
measuring strip of the measuring support.

12. A device for measuring body height as claimed in  
Claim 11, wherein the device is mainly made of high  
molecule materials.

13. A device for measuring body height as claimed in  
Claim 11 or 12, wherein said measuring plate has a  
locating hole for mounting on a wall, which measuring  
plate can also be drilled for an additional hole for  
hanging.

14. A device for measuring height substantially as  
herein described with reference to the accompanying  
drawings.