J. C. HANSEN, JR.

LEVELING DEVICE.

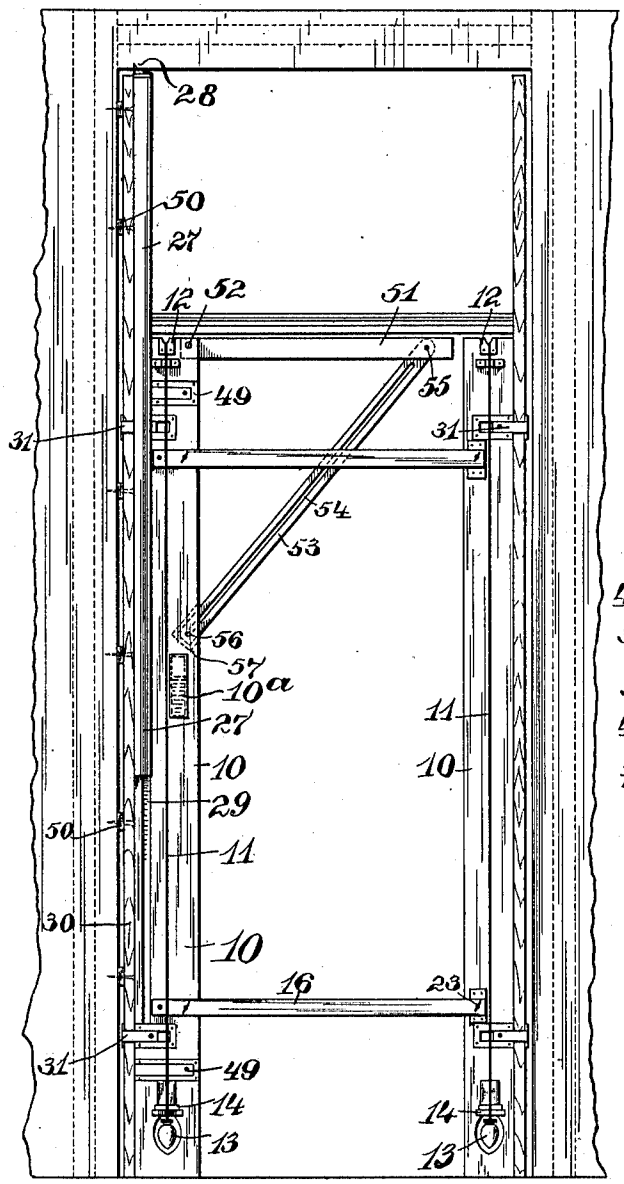
APPLICATION FILED AUG. 5, 1911.

1,066,606.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



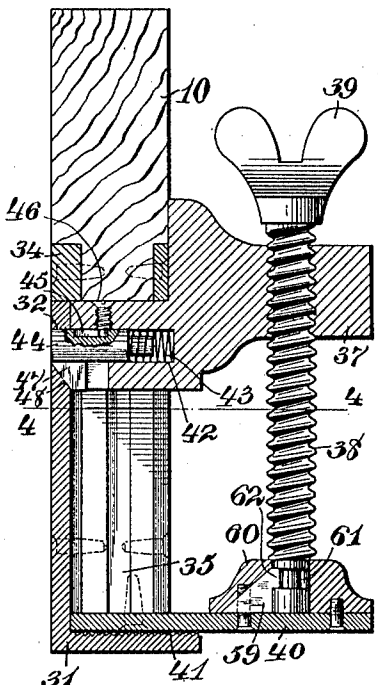


Fig. 3.

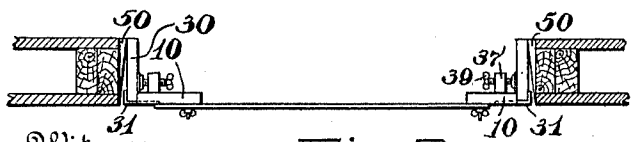


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 4.

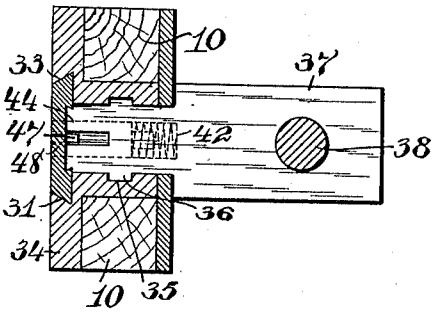


Fig. 5.

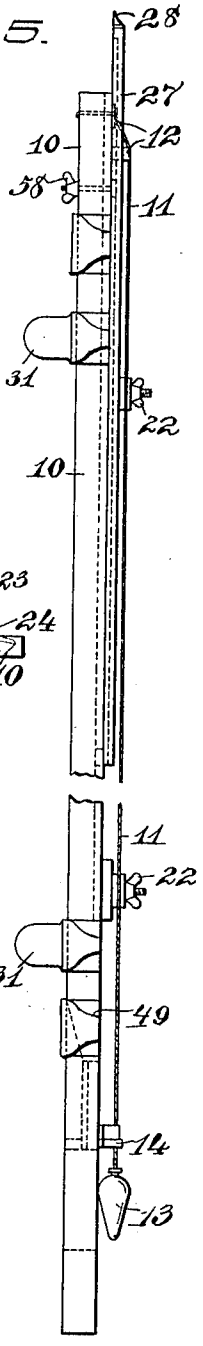


Fig. 6.

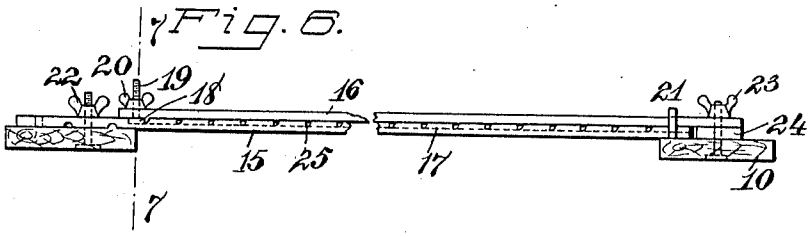


Fig. 7.

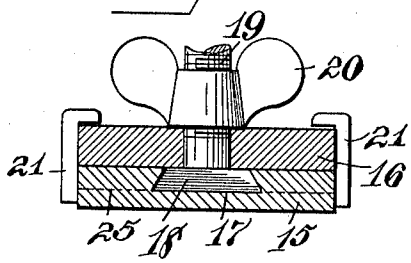
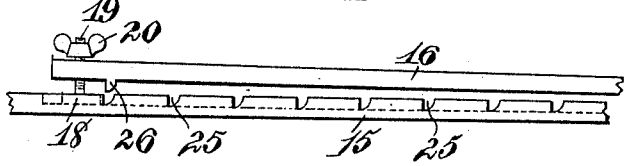


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN C. HANSEN, JR., OF NEWARK, NEW JERSEY.

LEVELING DEVICE.

1,066,606. Specification of Letters Patent. Patented July 8, 1913.

Application filed August 5, 1911. Serial No. 642,567.

To all whom it may concern:

Be it known that I, JOHN C. HANSEN, Jr., a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Leveling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in leveling devices, and consists of plumb-rules with means connecting them to hold them in parallel relation, the said means also acting to hold the plumb-rules apart various distances so that the plumb-rules can be used at the same time on different sized openings between elements, the device being particularly adapted for use in setting the side jambs of doors, and also fixing the position of the transom-rail.

The device is intended to be fastened to the side jambs by grasping devices which preferably slide on the plumb-rules transversely to their longitudinal edges.

This invention is an improvement over my prior device illustrated and described in Patent No. 977,735, issued Dec. 6, 1910.

The invention further consists in an improved form of grasping slide providing for a quick replacing of the slide by another if desired, whereby they are easily interchangeable and no time is lost in unscrewing screws or similar devices to take off or put on a slide. This removal is sometimes necessary when an unusually thick element is to be grasped at the edge or sides of the plumb-rule.

The invention is further designed to provide means for holding the plumb-rules apart, which means is adapted to be spaced in divisions that insure a separation of the plumb-rules at a predetermined distance without the use of an additional rule.

The invention is designed to provide a leveling device with a pair of plumb-rules, one of which is provided with an extension which slides on one of the plumb-rules and is provided with a top edge so that it can be forced in engagement with the top of a support, such as the head jamb of a door-opening, to assist in holding the plumb-rules in their vertical position.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a door-opening with the side jambs in place, the leveling device also being in position and clasping the side jambs of the door. Fig. 2 is a top view of the device shown in Fig. 1 with the sides of the door-opening in section. Fig. 3 is a longitudinal section through one of the clasps for grasping the side jambs of the door. Fig. 4 is a section on line 4, 4, in Fig. 3. Fig. 5 is a side view broken away of the leveling device. Fig. 6 is a top view of the means for spacing the plumb-rules apart. Fig. 7 is an enlarged view through line 7, 7, in Fig. 6, and Fig. 8 is an enlarged view of one end of Fig. 6 showing the means for spacing the plumb-rules apart in its released position so as to permit the plumb-rules to be moved toward and from each other.

The device consists of a pair of plumb-rules 10 which consist of the ordinary and usual stock adapted to be vertically placed on their bottom edges and having the plumb-lines 11 which are fastened to suitable pieces 12 at the top, these pieces being notched at the center of the plumb-rule 10 and having the plumb-bob 13 suspended at the bottom. The plumb-lines coöperate with suitable markers 14 to indicate when the plumb-rules are vertical. The plumb-rules are connected by means for holding them parallel, said means being adjustable to vary the distance between the plumb-rules. On each of the plumb-rules is a strip, these strips 15 and 16, respectively, being fastened at one end to a plumb-rule and overlapping each other as shown more particularly in Figs. 6 and 8. The strip 15 is provided with a groove 17 which is preferably dove-tailed, and a head 18 is adapted to slide in the groove, the head 18 having a bolt 19 thereon, and a nut 20 is screwed on the bolt 19. On the projecting or free end of the strip 15 are a pair of guide-pins 21 between which the strip 16 slides.

Suitable fastening devices 22 and 23 pivotally secure the strips 15 and 16, respectively, to the plumb-rules 10, the strip 16 resting on a block 24 the thickness of the strip 15 so that its inner face will slide on the outer face of the strip 15. One of the strips, as 15, is provided with notches 25, and a tongue 26 fits in each of the notches.

When the nut 20 is unscrewed the slide-piece 16 can be raised to bring the tongue 26 above the surface of the face of the strip 15, and the head 18 can slide in the slot 17 and the plumb-rules 10 can be moved apart or together as desired. The notches 25 are preferably placed equal distances apart, or rather are spaced apart by measurement so that when the tongue 26 is set into a certain notch it indicates that the outside edges of the plumb-rules 10 are at predetermined distances apart. This prevents the use of a tool in adjusting the separation of the plumb-rules. When the tongue 26 is placed in the desired notch 25 the nut 20 is screwed down and the two strips 15 and 16 are tightly bound together as shown in Figs. 6 and 7. I prefer to use two of these separating means, one near the top and one near the bottom of the plumb-rule so as to hold them apart near their opposite ends and insure their parallel relation.

When the plumb-rules have been set apart the required distance, that is, they are apart at their outside edges equal to the distance between the side jambs of the door-frame that is to be set, the plumb-rules are set in place as shown in Fig. 1, and when they indicate by their plumb-bobs 13 that they are vertical, an extension 27 with a pointed end 28 is slid upward to force the point 28 in engagement with an upper support, preferably the head jamb of the door. The extension 27 has a projection which slides in a slot 29 and can be fastened by any usual means in any position. The plumb-rules are adapted to grasp the side jambs 30 by means of the clasps 31. Each clasp is shown in detail in Figs. 3 and 4. The clasps 31 are preferably L-shaped and are provided with an opening 32. Each clasp is also inclined on its side edges, as at 33, to fit in a similarly shaped or dovetailed groove in the plumb-rule 10. The preferred form is illustrated in Fig. 4 where the groove is placed in a face-plate 34, the face-plate having slots 35 on opposite sides of its inner opening to receive projections 36 on the slide-plate 37. The slide-plate 37 is actuated by the screws 38 having the handle 39 thereon, the screw 38 being fastened to an end-plate 40. It will thus be seen that when the handle 39 is turned to permit the screw 38 to revolve, the slide-plate 37 slides in the slots 35 and forces the clasps 31 outward from the position shown in Fig. 3 to provide a space between the inner roughened face 41 of the L-shaped part of the clasp and the outer face of the end-plate 40.

To preferably secure the clasp 31 to the slide-plate 37 I provide the slide-plate 37 with a recess 42 in which is placed a spring 43 abutting on the end of the recess 42 and acting to normally force a pin 44 outward, the movement of the pin being limited by the slot 45 in the pin and a screw or pin 46 in the slide-plate. The pin 44 has a beveled nose 47. When a clasp is to be put in place it is simply placed with its side edges 33 inside the groove in the face-plate 34, and as it slides in its edge engages the inclined face of the nose 47 and the pin 44 is forced inward against the action of the spring 43. When the perforation 32 comes in line with the pin 44 and the nose 47 is in line with the slot 48 of the clasp 31, the pin 44 is snapped into place and the clasp 31 is securely held in the position shown in Fig. 3. When it is desired to withdraw the clasp a nail or other suitable tool is used to push on the head of the pin 44, and when the pin is pushed in the clasp can be slid out from its slot in the face-plate 34 and can be replaced by another if necessary.

I provide pockets 49 in which long clasps can be fitted and be held out of the way for use when they are desired, the shorter clasp 31 being shown in operation in Fig. 1. These pockets 49 permit the carrying on the plumb-rules of different sizes of clasps to be used under varying conditions, as will be evident.

It will be seen from this description that the leveling device can be used to set the side jambs of a door at the same time, that is, both sides of the door can be arranged in their proper positions after the leveling device is once set, and can be held in position until they have been securely fastened. This adjustment and fastening is usually done by a carpenter using wedges 50 shown in Fig. 2, and when these have been properly forced into place to fix the side jambs in their true positions the side jambs are nailed in place and the plumb-rule can be removed.

If desired I may also fix the transom-rail in position at the same time by means of the arm 51 which is pivoted at 52 to the top edge of one of the plumb-rules and has a supporting-arm 53 with a slot 54 therein, the slotted supporting-arm being pivoted at 55 near the outer end of the arm 51. The slot 55 permits the supporting-arm to be slid down over a pin 56 when it is desired to permit the arm 51 and the supporting-arm 53 to hang vertically alongside the plumb-rule 10. When the arm 51 is to be put in place, the lower end of the supporting-arm 53 is placed in the socket 57 and the arm 51 is thus held out at right-angles or perpendicular to the plumb-rule to which it is fastened, and necessarily perpendicular to the other plumb-rule on account of the two plumb-rules being held in parallel relation.

The edge of the extension 27 and the edge of the plumb-rule 10 to which it is secured are in line so that when the extension is slid out in extension of the plumb-rule a

long, alined surface is presented. This can be used either vertically or horizontally as a plumb-rule or as a level by using the spirit level 10^a or its equivalent as an indicator. The plumb-rule and the extension when slid apart to their limit can be used as a floor level and in any of the numerous other positions or situations where such level is desirable. This increases the field of operation of this device, and permits its use for other purposes besides the setting of door-jambs and similar vertical structures.

The extension 27 is preferably held in its adjusted positions by a nut 58 on a set-screw which has a head in the slot in the extension. This is seen particularly in Fig. 5. To secure the screw 39 to the end-plate 40 I place a boss 60 on the inner side of the end-plate, fastening it thereto in any usual manner, preferably by screws, and providing the end of the screw with a recess 61 into which the nose 62 of a key 59 is set, and when the collar 60 is fastened to the end-plate the plate 59 and its nose 62 prevent longitudinal movement of the screw in relation to the end-plate and the whole device is concealed.

Having thus described my invention, what I claim is:—

1. A leveling device comprising a pair of plumb-rules adapted to be arranged side by side, a pair of strips, each strip being fastened at one of its ends to one of the plumb-rules, the strips being adapted to slide on each other, one of the strips having a series of notches therein, a tongue on the second strip, the notched strip also having a groove running longitudinally therein, a head adapted to slide in the groove, a bolt on the head passing through the second strip, a nut on the bolt, the nut being adapted to bear on the second strip to force the tongue in any of the grooves, and an extension-piece sliding vertically on one of the plumb-rules, the extension-piece having a point on its top edge whereby it can be seated in a support above the plumb-rules.

2. A leveling device comprising a plumb-rule, a slide-plate in the plumb-rule, means for moving the slide-plate on the plumb-rule, the slide-plate having a groove therein, a clasp adapted to slide in the groove, the clasp being perforated, and a spring-actuated pin adapted to enter the perforation in the clasp to hold it in place.

3. In a leveling device, a plumb-rule, a slide-plate in the plumb-rule, the slide-plate having a groove therein, a clasp, the clasp having a perforation, a pin in the slide-plate, a spring for actuating the pin, an inclined nose on the pin adapted to be engaged by the clasp when the clasp is slid in place, and means for limiting the outward movement of the pin, the pin being adapted to be seated in the perforation of the clasp when the clasp is slid into place.

4. In a leveling device, a plumb-rule, a slide-plate in the plumb-rule and adapted to be slid therein, a clasp on the slide-plate and adapted to coöperate with the edge of the rule for grasping an element, an end-plate on the plumb-rule, a screw passing through a screw-threaded perforation in the slide-plate, a handle on the screw, a collar on the inner face of the end-plate, the screw having an annular recess within the collar, and a plate seated in the collar and having a nose to enter the groove in the screw.

In testimony, that I claim the foregoing, I have hereunto set my hand this 4th day of August, 1911.

JOHN C. HANSEN, Jr.

Witnesses:
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ADOLPH F. NARQUIER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."