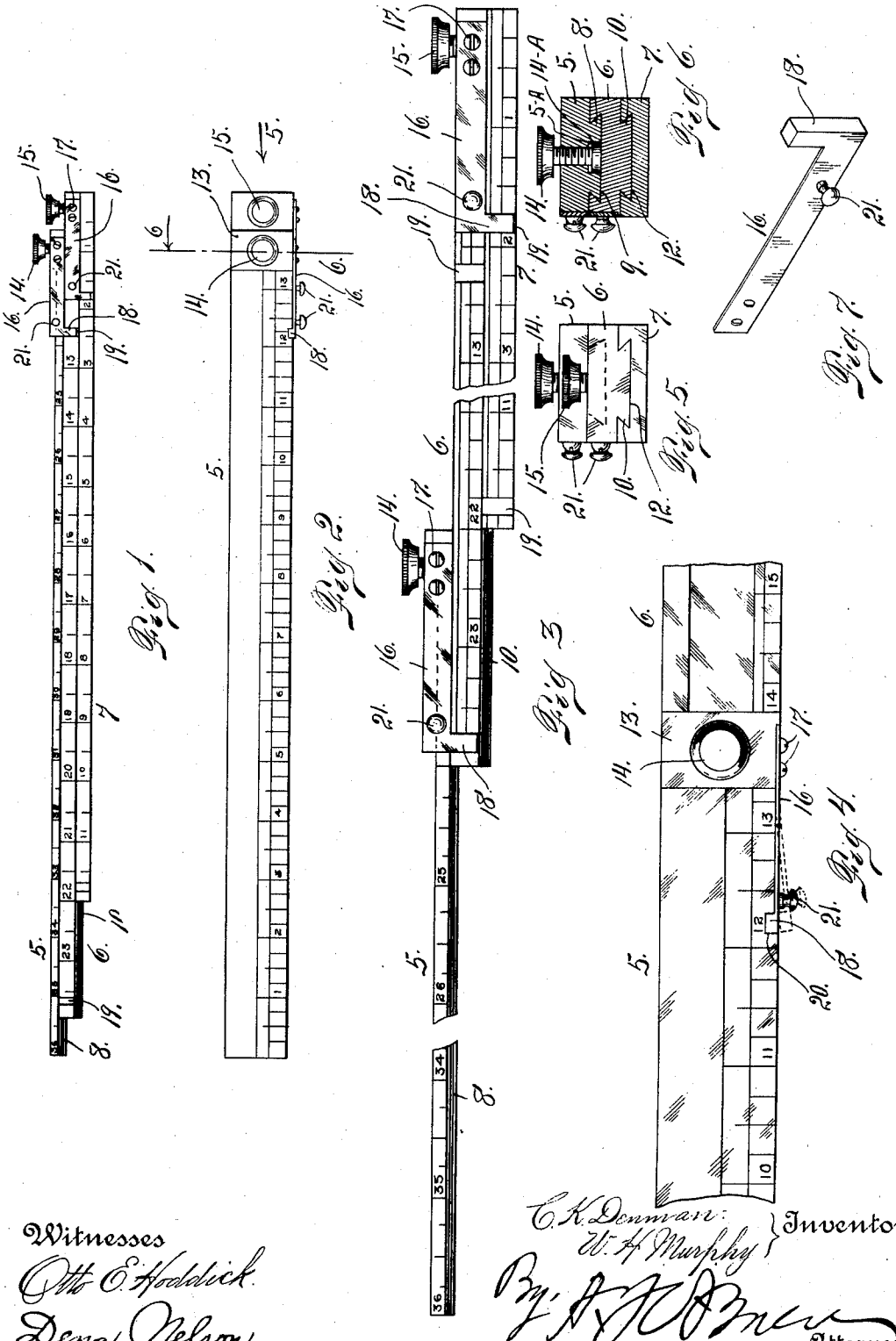
C. K. DENMAN & W. H. MURPHY.

EXTENSION RULE.

APPLICATION FILED DEC. 20, 1907.

909,068. Patented Jan. 5, 1909.



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EXTENSION-RULE.

No. 909,068. Specification of Letters Patent. Patented Jan. 5, 1909.

Application filed December 20, 1907. Serial No. 407,412.

To all whom it may concern:

Be it known that we, CLIFFORD K. DENMAN and WILLIAM HARVEY MURPHY, both citizens of the United States, residing at Greeley, in the county of Weld and State of Colorado, have invented certain new and useful Improvements in Extension-Rules; and we do 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 the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in extension rules, our object being to provide an instrument of this character adapted for measuring indefinite lengths.

The device is especially adapted for measuring distances between walls since it is only necessary to place the instrument in a position between the two walls and then extend it until its extremities engage the walls.

The device is composed of any desired number of members each of which may be of any desired length. The various members are slidably connected the one with the other and are so arranged that when the device is not in use it may be adjusted to occupy but little space whereby it may be easily placed within a chest or other receptacle for carpenters' tools or even carried in the pocket. While these members may be slidably connected in any suitable manner, we have illustrated them in the drawing connected by dove-tailed tongues and grooves. What we will term the top member of the device is plain or ungrooved, its lower surface being provided with a dove-tailed tongue adapted to fit a counterpart groove formed in the top of its engaging section. The bottom of the section having the top dove-tailed groove is in turn provided with a dove-tailed tongue engaging a counterpart groove in the member next below and so on until the desired number of members are obtained. The bottom member has its lower surface plain. All of the members except the bottom member are provided with fastening devices as set screws for locking the members in the desired position of adjustment after a measurement has been obtained. Each of the devices except the lowermost is also provided with a spring catch adapted to engage recesses formed in the adjacent members when the device is fully extended.

Having briefly outlined our improved device, we will proceed to describe the same in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of the rule shown in the closed position. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation showing the device on a larger scale and partly extended. Fig. 4 is a fragmentary top plan view of the device shown on the same scale as in Fig. 3. Fig. 5 is an end elevation looking in the direction of the arrow in Fig. 2, but shown on a larger scale. Fig. 6 is a cross section taken on the line 6—6 Fig. 2, the parts being shown on a larger scale. Fig. 7 is a perspective view in detail of one of the locking springs shown on a larger scale than in the other views.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the top member; 6 the middle member; and 7 the bottom member of our extension rule as illustrated in the drawing, three members only being illustrated. The top member has a flat top surface and is graduated adjacent one edge thereof to designate inches or other denominations of measurement. The bottom of this member is provided with a dove-tailed tongue 8 adapted to engage a counterpart groove 9 formed in the member 6. The bottom of the latter is provided with a similar tongue 10 engaging a counterpart groove 12 formed in the member 7. By virtue of this construction the members are longitudinally slidable the one upon the other thus making the instrument extensible in the direction of its length. The top member which is relatively thin, is reinforced at one extremity as shown at 13 and in this reinforced part is threaded a thumb nut 14 whose lower extremity is provided with an enlargement 14^A entering a recess 5^A formed in the bottom of the member, the said recess being slightly deeper than the enlargement thus allowing the thumb screw to be loosened to permit the two members to slide freely upon each other. The middle member 6 is provided at one extremity with a similar thumb screw 15 which is of the same construction as that just described and is adapted to engage the lower member 7. When these thumb nuts are tightened, the members are locked in the

adjusted position. Each member except the bottom member is provided with a locking spring 16 which is secured to the extremity thereof where the thumb screw is located by means of suitable fastening devices 17. The extremity of each locking spring remote from the fastening devices 17 is provided with a depending portion 18 adapted to enter a recess 19 of the member just below. Each member below the uppermost is provided with two recesses 19, one near each extremity. One of these recesses is so located that the depending part 18 of the spring engages it when the rule is in the closed position while the other recess 19 is engaged thereby when the rule is fully extended, thus making provision for fastening the members together when in either extreme position of adjustment.

The free extremity of each spring 16 is reinforced to engage the recesses 19. The member to which the spring is attached is also provided with a recess 20 (see Fig. 4) adapted to register with one of the recesses 19 in the adjacent member, when the rule is in the closed position. This is necessary since the entire free extremity as well as the depending part is reinforced and in order to allow the free extremity of the fastening spring to enter the recess 19, the member to which the spring is attached must be provided with a corresponding recess. The free extremity of each spring 16 is also provided with a small knob 21 to facilitate the outward movement of the spring for the purpose of releasing the parts to allow them to be freely extended.

The members of the rule are graduated on the top and on one edge thereof. The numbers of these graduated surfaces increase from right to left on the edges of the members and from left to right on the top thereof.

From the foregoing description the use and operation of our improved device will be readily understood. Assuming that the device is in the closed position as shown in Fig. 1, if it is desired to extend the same, the free extremities of the locking springs 16 are drawn out of their recesses, thus allowing the members to slide freely the one upon the other. Under such circumstances it is assumed that the set screws have not been tightened, since while the device is in the closed position there is no necessity for tightening these screws as the locking springs 16 hold the parts in the assembled relation. When the device is extended, however, to the desired position, the set screws are tightened for the purpose of holding it in this position. These set screws are necessary until one or more members of the rule are fully extended, since the fastening spring of any member is not allowed to enter a recess 19 of another member until one of the members has been extended to the limit of its movement.

Attention is called to the fact that while these rules may be made of any suitable material, it is preferred to make them of steel. It will also be understood that they may be made of any desired number of sections and that these sections may be of any desired length, width and thickness.

As shown in the drawing each spring fastening device 16 is preferably secured to the rule member by two screws 17 thus preventing the tendency of the device to turn as might be the case were a single screw employed.

Having thus described our invention, what we claim is:

1. An extension rule composed of a plurality of slidable members arranged one above another, each member except the lowermost being provided on its top face and near one extremity with a set screw adapted to engage an adjacent member, whereby the various members may be locked in the desired position of adjustment, each member except the lowermost having a spring catch mounted on its edge, each adjacent member having a recess formed in its edge and adapted to be engaged by said spring, the members being graduated and numbered on their upper surface and edges the numbering on the top of the members increasing from left to right and on the edge from right to left, substantially as described.

2. An extensible rule composed of a plurality of slidably connected members arranged one above another, each member except the lowermost being provided on its top face and near one extremity with a set screw adapted to engage the adjacent member, whereby the various members may be locked in the desired position of adjustment, each member except the lowermost having a spring catch mounted on its edge and each member except the uppermost having a recess formed in its edge and adapted to receive the spring of the adjacent member, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CLIFFORD K. DENMAN.
WILLIAM HARVEY MURPHY.

Witnesses:
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