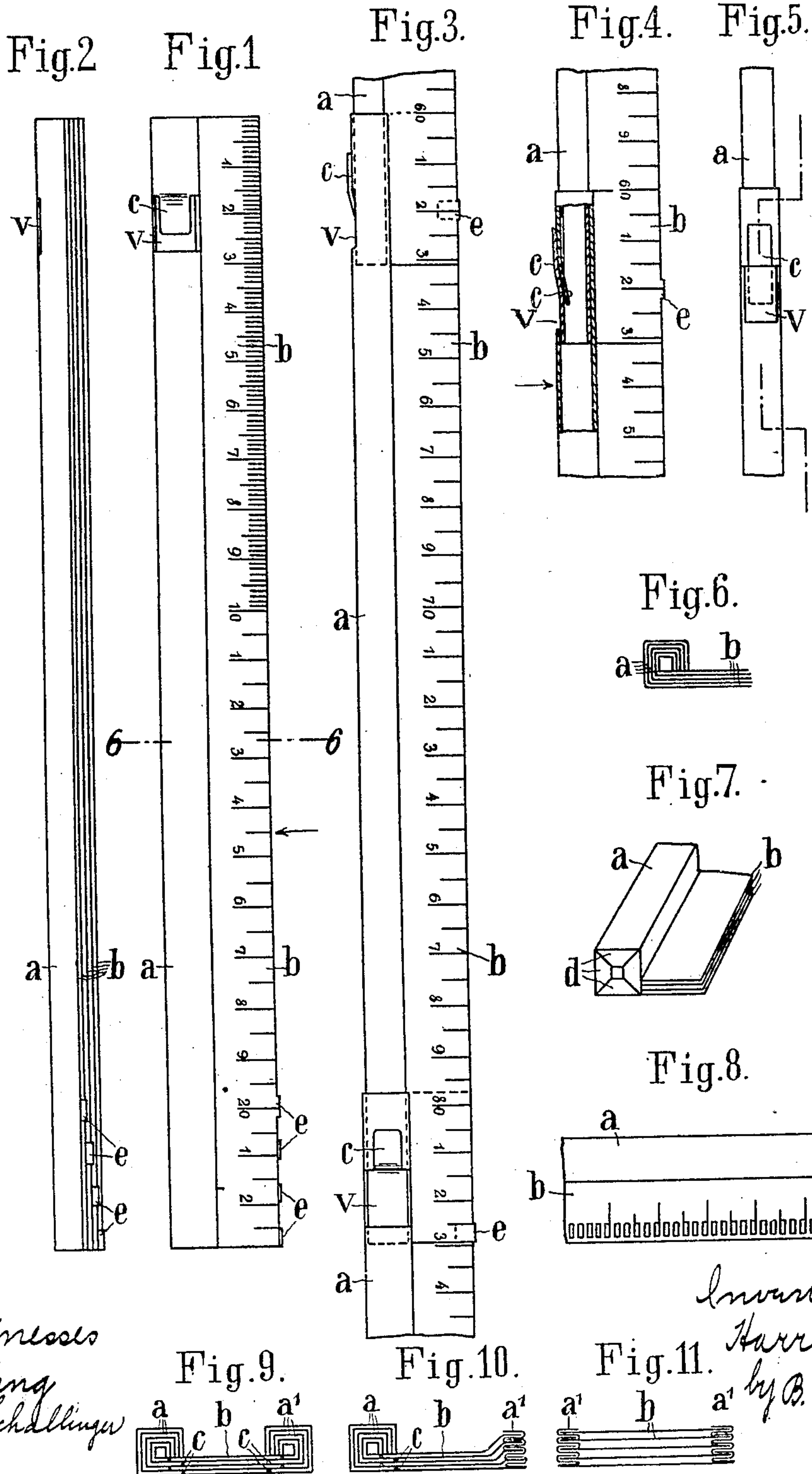


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MEASURING ROD.  
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904,830.

Patented Nov. 24, 1908.



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# UNITED STATES PATENT OFFICE.

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## MEASURING-ROD.

No. 904,830.

Specification of Letters Patent.

Patented Nov. 24, 1908.

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*To all whom it may concern:*

Be it known that I, HARRY BOECK, citizen of Prussia, residing at Berlin S. W. 12, Blücherstrasse, have invented new and useful Improvements in Measuring-Rods, of which the following is a specification.

This invention relates to a measuring rod for land-surveying and other purposes. It takes up only a very small space and can be easily stored away and when in use it is extremely rigid. Measuring rods which telescope are already generally known, but previous constructions have been found to be objectionable because the graduations marked upon the separate pieces are worn away in time in consequence of the unavoidable entrance of dirt or dust. The present invention combines the advantages of the rigid measuring pole and those of the telescoping measures and avoids their disadvantages.

In the accompanying drawings Figure 1, illustrates my improved measuring pole in elevation as the same appears when contracted. Fig. 2, is a similar view looking in the direction of the arrow, of Fig. 1. Fig. 3, is a similar view showing the parts extended. Fig. 4, is a fragmentary side elevation, partly in section, showing an improved spring catch device. Fig. 5, is a view looking in the direction of the arrow of Fig. 4. Fig. 6, is a sectional view on line 6—6 of Fig. 1. Fig. 7, is a perspective view of one end of the measure pole. Fig. 8, is a plan view showing a modified form of graduations. Figs. 9, 10 and 11 are cross sectional views illustrating modifications of my invention.

The separate parts of which the measure is composed are indicated as follows: (b) indicates the graduated part to which the box part (a) is affixed. At the ends of the box shaped part there is provided an aperture (v) which in the construction illustrated is produced by stamping out the material, and so that at the one side of the aperture thus stamped out a spring piece (c) is left projecting like a tongue, which on the drawing engages behind a corresponding tongue of the adjacent part and thus prevents the parts from being drawn away from one another. In order that these apertures may not all lie one above another, they are arranged alternately at the rear (Fig. 3, upper) and at the side (Fig. 3, lower end) of the box portion of the measure. On being extended

there is consequently prevented any drawing apart of the separate portions of the measure.

In order to prevent the pushing out of the separate limbs of the measure in the opposite direction when the measure is retracted, other provisions are necessary. For this purpose the ends of each box-shaped part are either entirely closed or there is a ridge (d) provided so that in this direction also the measure cannot be pushed too far.

The graduation is either notched upon the rib part or attached thereto in a suitable manner; or it may be made directly in the form of a perforated stamping. The numerals may be stamped out in like manner.

In order that the rods, which all lie together in the closed position, may not separate one from another, there is provided in each a little overlap e which engages above the next lowermost rod so that on being closed up all the rods are held firmly against one another.

The method of use of this measuring rod is briefly as follows. The separate parts are successively drawn out as far as possible until the corresponding tongues engage firmly one with the other and this is repeated until the end of the measuring rod reaches to or projects beyond the point to be measured. By means of the box-shaped construction of the basal part, the whole measure has the action of an angle piece whereby is attained that it possesses even in the direction of its flat side, an extraordinary stiffness so that even with a length of three meters the measure remains straight. It is immaterial how the construction of the box-shaped part is arranged, that is whether it is round, flat, triangular, polygonal and so forth. It is also possible to construct the measuring rod of telescopically closing round or angular tubes.

In Figs. 9, 10 and 11 further constructions of the measuring rod are shown, whose advantages consist in providing projections in the measuring limbs, so that, instead of said limbs bearing for their whole length on each other, a certain space is obtained between the limbs. By this means friction is avoided between said limbs and the scale is not so liable to be worn off.

In these figures b represents the limbs and a the box shaped part described with reference to the former figures of the drawing. a<sup>1</sup> designates the new formation of the box



shaped part, while *c* shows the projections, which prevent the measuring limbs from lying on each other.

The parts *a*<sup>1</sup> are so formed that the end of the limb has an S-shaped part, which on the one hand serves to stiffen said limb and on the other hand acts as a guide for the adjacent limb and lastly keeps each of said limbs a certain distance apart.

10 Claims.

1. Measuring rod, comprising in combination, measuring limbs and box shaped parts attached to one edge of said limbs and adapted to slide in each other, substantially as, and for the purpose, set forth.

2. Measuring rod, comprising in combination, measuring limbs, box shaped parts attached to one edge of each of said limbs and adapted to slide in each other, and tongues cut in said box shaped parts to limit the sliding movement of said box shaped parts, substantially as set forth.

3. Measuring rod, comprising in combination, measuring limbs, box shaped parts attached to one edge of each of said limbs and adapted to slide in each other, and tongues cut in said box shaped parts and so disposed as not to come into engagement when said box shaped parts are pushed into one another, substantially as, and for the purpose set forth.

4. Measuring rod, comprising in combination, measuring limbs, box shaped parts attached to one edge of each of said limbs and adapted to slide in each other, and an overlap attached to said measuring limb and adapted to project over the edge of the adja-

cent limb, substantially as, and for the purpose, set forth.

5. Measuring rod, comprising in combination, measuring limbs provided with stamped out graduations and intermediate units, and box shaped parts attached to one edge of said limbs and adapted to slide in each other, substantially as, and for the purpose, set forth.

6. Measuring rod, comprising in combination, measuring limbs, and a box shaped part along each edge of said limbs, substantially as, and for the purpose, set forth.

7. Measuring rod, comprising in combination, measuring limbs, projections on said limbs, and box shaped parts along each edge of said limbs, substantially as, and for the purpose, set forth.

8. Measuring rod, comprising in combination, measuring limbs, a box shaped part along each edge of said limbs, and a box shaped part at the ends of said limbs, substantially as, and for the purpose, set forth.

9. Measuring rod, comprising in combination, measuring limbs, a box shaped part along one edge of said limbs, and an S-shaped boxlike part along the other edge of said limbs, substantially as, and for the purpose, set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY BOECK.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.