No. 740,653. PATENTED OCT. 6, 1903.

E. HIPOLITO.

RULE FOR MEASURING OPENINGS.

APPLICATION FILED OCT. 12, 1900.

NO MODEL.

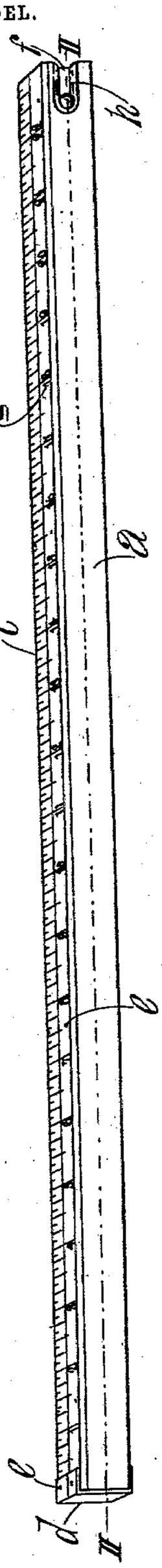

Fig. I.

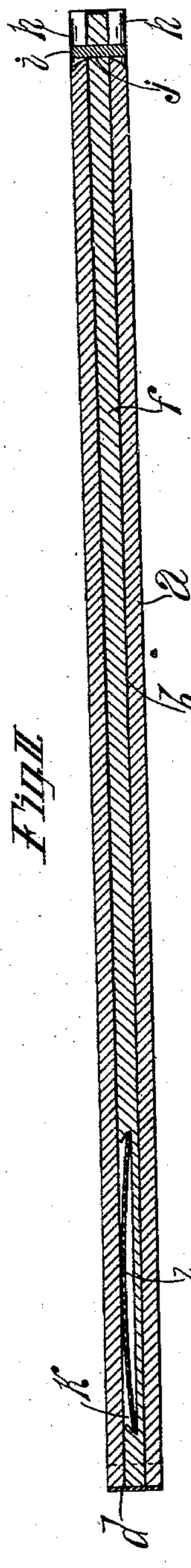

Fig. II.

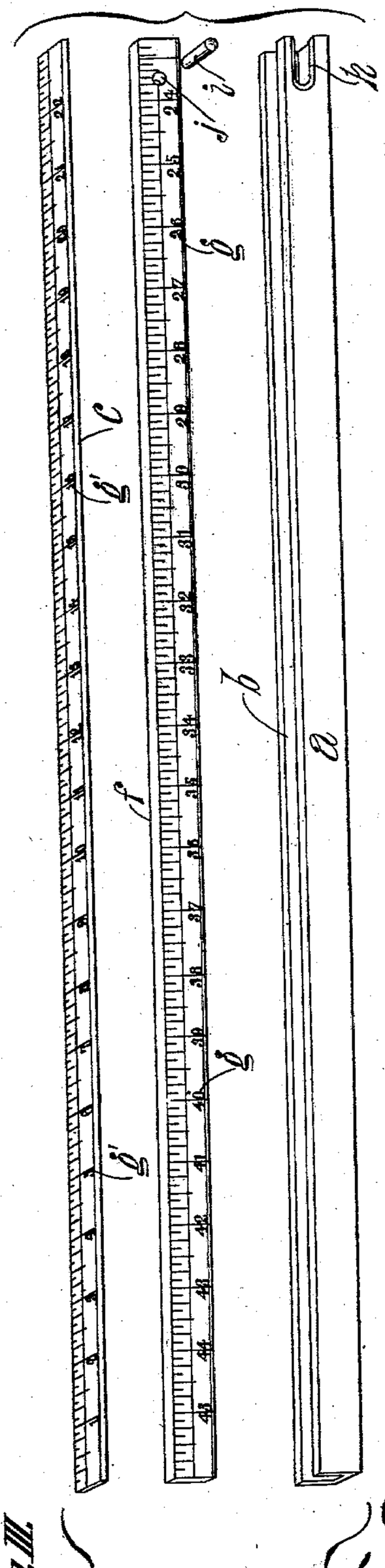

Fig. III.

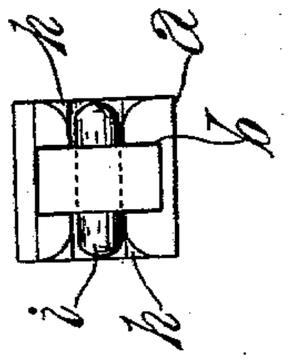

Fig. IV.

Witnesses
Geo. J. Ingman.
John A. Morris.

Inventor:
Espiridion Hipolito
by Townsend Bros.
his attys.

No. 740,653. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

ESPIRIDION HIPOLITO, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO THE HIPOLITO SCREEN AND SASH COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

RULE FOR MEASURING OPENINGS.

SPECIFICATION forming part of Letters Patent No. 740,653, dated October 6, 1903.

Application filed October 12, 1900. Serial No. 32,850. (No model.)

To all whom it may concern:

Be it known that I, ESPIRIDION HIPOLITO, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Rule for Measuring Openings, of which the following is a specification.

The object of my invention is to provide an extremely cheap, easily-manufactured, simple, light, durable, and convenient measuring-stick for measuring the width of window and door openings and the like.

The accompanying drawings illustrate my invention. Figure I is a view of my measuring-stick contracted for insertion in the opening to be measured. Fig. II is a longitudinal mid-section of the same on line II II, Fig. I. Fig. III is a view showing the parts of the measuring-stick detached from each other. Fig. IV is an end view of the rule looking at the open end of the case.

a indicates a wooden member channeled from end to end by a channel *b*, which is rectangular in cross-section.

c indicates a slab to form a cover for the same to fit over and completely cover the mouth of the channel *b*, thus, together with the member *a*, forming an opened-ended tube, sheath, or case. By preference the channeled member *a* and the cover *c* are made of hard strong wood, the channel being cut by an ordinary grooving-machine.

d indicates a combined end closure and fastening device consisting of a cap formed of a piece of sheet metal equal in width to the width of the cover and bent into U form to embrace and fit tightly upon the slab and the grooved member at the end of the tube to close the same.

e indicates brads fastening the cap, cover, and grooved member together.

f indicates a sliding bar inserted into the tube at the open end and furnished with length-designating marks *g*, increasing toward the inner end of the bar, each of said marks indicating the total length of the stick when the bar is drawn out to bring such mark to register with the end of the tube. The side walls of the tube are respectively furnished with a notch *h* at the open end of the tube.

i indicates a pin inserted through a hole *j*, extending through the bar. The pin *i* is substantially equal in length to the width of the case *a* and fits into the notches *h* when the bar is fully inserted into the tube. The notches are sufficiently deep to allow the pin to be set far enough from the end to avoid any danger of splitting and yet allow the end of the bar to come flush with the end of the case when the stick is fully contracted. The bar *f* is furnished at its inner end with a spring-holding seat *k*. *l* indicates a spring in said seat. Preferably this spring is a bow-spring made of a bowed piece of spring-wire. The spring-seat *k* is preferably a narrow channel or groove cut into the face of the bar *f* and extending lengthwise of the bar. The wire *l* is simply inserted in the seat *k* thus formed therefor.

In practical use to measure an opening the rule will be brought into the opening and extending crosswise thereof, and the operator will grasp the pin *i* between his thumb and finger applied to the opposite ends of the pin and will then extend the bar, holding it in the opening to be measured, and will bring the ends of the rule against the inner walls of the opening to be measured. When the ends of the rule are both in contact with the sides of the opening to be measured, the length of the stick or rule will be read from the face of the bar. When the measurement has been determined, the bar will be slid into the case therefor, returning the pin *i* to its seat in the notches. When the bar is thus inserted in the case, the length-indicating marks are entirely protected from wear, and the bar, with the tube therefor, forms a strong and substantial rule.

The frictional device comprising the spring *l* serves to hold the bar in true position when inserted into the case or partially drawn out.

The rectangular cross-section of the bar and channel enables the entire appliance to be made at a minimum cost of labor and material.

The slab can be most conveniently supplied

with length-designating marks g'. These are arranged increasing toward the open end of the case. By this construction both members which are furnished with the length-designating marks are solid and are therefore adapted for the printing or stamping of said marks thereon without injury.

From the foregoing description it is evident that the three main members of which my device is composed may each be manufactured very cheaply, as they may be given their cross-sectional form in long pieces and cut therefrom instead of being shaped individually. It should also be noted that I provide a construction for extensible wooden rules in which the rule is furnished with a substantial base adapted to receive a sliding tongue, the base being formed in a single piece, so that the tendency to warp in either direction is reduced to a minimum and provide for the recess or chamber of the base a cheap, substantial, and easily-applied cover to complete the body of the rule, forming a closed way for the extensible bar, keeping out dirt and dust.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A measuring-stick composed of a member channeled from end to end; a cover fastened over said channel to thereby form a tube; a cap fastened across one end of said tube to close the tube at that end; a sliding bar inserted into the tube from the other end and furnished with length-designating numbers increasing toward the closed end of the tube and furnished with a spring-seat at the inner end; and a spring in said spring-seat and pressing against the inner wall of the tube.

2. A measuring-stick comprising a member grooved from end to end and furnished with oppositely-arranged notches at one end of the side walls of said groove; a cover to close the open side of said groove; a cap to close the end of the tube opposite the notches; a bar fitted in the tube and furnished with length-indicating numbers increasing toward the inner end of said bar; a pin inserted through the end of the bar to fit into the notches when the bar is fully inserted; and frictional means for holding the bar in the tube.

3. A measuring-stick comprising in combination a wooden member channeled from end to end with a channel which is angular in cross-section; a slab fixed to said channeled member over the mouth of said channel; a cap fastened over and closing one end of the closed tube thus formed; and a bar angular in cross-section fitting the tube and furnished on one side with length-indicating numbers increasing toward the inner end of the bar.

4. The combination of a member furnished on one side with a channel rectangular in cross-section extending from end to end of the member, oppositely-arranged notches being provided in the side walls of said channel; a cover for the channel fixed on said member; a bar fitted in the tube thus formed, and furnished with length-indicating numbers increasing toward the inner end of said bar; and a pin through said bar to enter said notches.

5. A measuring-stick comprising in combination a case formed of a channeled wooden member; a wooden slab fastened on said member to close the open mouth of the channel, and a metal sheet bent into U form and embracing the slab and channeled member, and extending over one end of the case to close the same and assist in holding together said slab and channeled member.

6. The combination of a wooden member channeled on one side; a wooden slab fixed on said member over the mouth of said channel; a bar furnished with a groove and fitted in said channel; and a bow-spring in said groove to press against the side wall of the channel.

7. A measuring-stick comprising a member grooved from end to end, said groove being rectangular in cross-section, and furnished with a chamfered notch cut into the end of the groove at right angles therewith; a bar fitted in the tube and furnished with length-indicating numbers; a pin transversely fixed to the bar near the end thereof to fit into the notch when the bar is fully inserted; and frictional means for holding the bar in the tube.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 6th day of October, 1900.

ESPIRIDION HIPOLITO.

Witnesses:
JAMES R. TOWNSEND,
JULIA TOWNSEND.