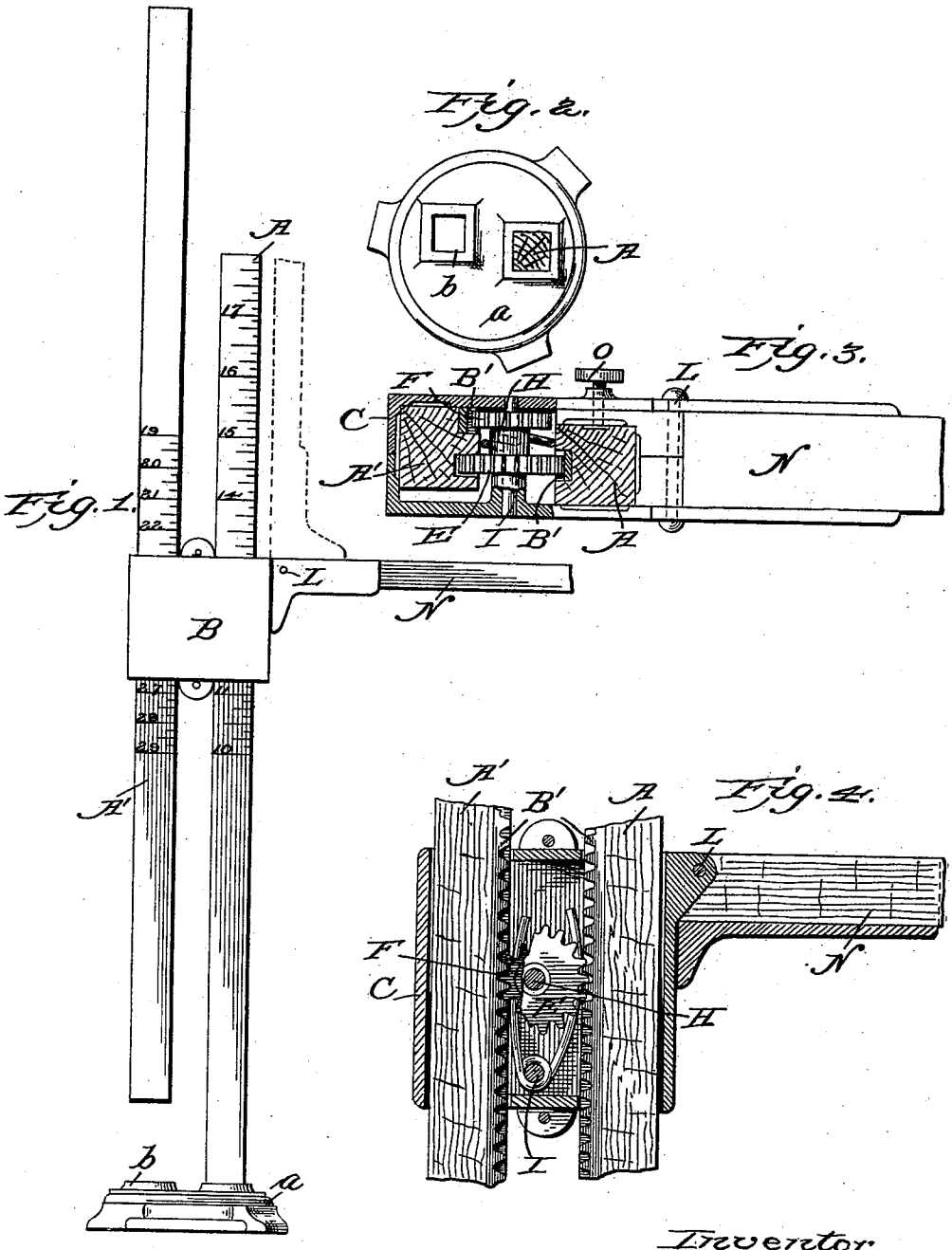
No. 618,888. Patented Feb. 7, 1899.

A. D. LINN.

PROPORTIONAL SLIDE RULE GAGE.

(Application filed Aug. 5, 1897.)

(No Model.)



Attest.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALLEN D. LINN, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE GRAND RAPIDS SCHOOL FURNITURE COMPANY, OF SAME PLACE.

PROPORTIONAL SLIDE-RULE GAGE.

SPECIFICATION forming part of Letters Patent No. 618,888, dated February 7, 1899.

Application filed August 5, 1897. Serial No. 647,233. (No model.)

To all whom it may concern:

Be it known that I, ALLEN D. LINN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Proportional Slide-Rules, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention is designed particularly to provide a proportional slide-rule for use in adjusting school seats and desks to the children who are to occupy them and to permit of the proper measurement being taken by the teacher or janitor, so that the seats and desks may be properly adjusted to and accord with these measurements after school-hours; but while I have designed the rule for this particular purpose I do not limit myself in the use of the device, and with little or no change it may be made capable of use in many other situations.

The invention includes two graduated parts, one movable and the other stationary, and a connecting-bracket having a geared connection with the two parts, whereby in the movement of said bracket upon the stationary part vertical movement will be given to the movable part equal to that imparted to the bracket and in addition a proportional increase through the gear connection, as will be more fully and completely explained hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of the rule. Fig. 2 is a plan of the base. Fig. 3 is a section of Fig. 1 just below the arm N, looking upward; and Fig. 4 is a vertical section centrally through Fig. 3.

I use two graduated parts A A', the graduations on A increasing upwardly and reversed on A'. The standard A is secured in the base *a*, while the standard A' is movable vertically, but when at rest is fitted at its lower end to a socket *b* on the base, thus keeping the standard straight and preventing it from warping or becoming irregular. A bracket B encircles the two standards and is provided with an arm N, pivoted at L, and this arm is adapted to be folded, as shown in dotted lines, Fig. 1, up against the standard A. The bracket is composed of a shell C, made of two or more parts fastened together and encircling the standards. The inner faces of the standards carry racks B', and a shaft H, extending between the side plates of the bracket and intermediate of the two standards, carries two gear-wheels E F, one smaller than the other. One of the gear-wheels E engages the rack on the standard A, and the gear F engages the rack on the standard A'. It will thus be seen that in the vertical movement of the bracket upon the stationary standard A the movable standard A' will not only move up with it, but this movement will be greater than the movement of the bracket and in a certain proportionate increase by reason of the positive engagement of the gear F with the rack of said standard A'. The bracket is kept in any position by means of a set-screw G. (Shown in Fig. 3 as contacting with the side of the bracket A.)

The arm N is in the particular use of the device intended to be used to indicate the distance from the floor to the cords on the under side of the limb when the foot is at rest on the floor, and the desk can then be set to the measurements indicated by the standard A'.

Within the casing C and between the standards A A', I provide a spring encircling a pin I, and the two ends of the spring are adapted to bear against the standards and keep the parts from rattling while in use. The two gears may be made of different sizes and in such proportion as may be desired to effect the adjustment of the seats and desks in relation to each other.

By this device it will be observed that I secure in a very simple manner a positive proportionate adjustment, self-registering upon the graduated standards as they appear immediately above the line of the casing *c*. The parts are few in number, and when not in use the device can be compactly folded, occupying but little space. I do not limit myself to the use of the pivoted arm, as in certain uses the arm may not be found necessary.

What I claim is—

A proportional measuring device comprising a base adapted to rest upon the floor, a stationary standard extending therefrom, a

bracket movable on said standard and having an extending arm, a second standard carried by the bracket and vertically movable, racks on the inner face of the standards out of line with each other, a shaft extending between the walls of the bracket, a large and small gear carried by said shaft parallel to each other, each gear meshing with the rack of one standard, the said gears being located between the standards and inclosed by the walls of the bracket, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALLEN D. LINN.

Witnesses:
L. T. GIBSON,
L. N. OLMSTED.