W. B. WOODRUFF.

LUMBER MEASURING DEVICE.

APPLICATION FILED MAY 7, 1908.

920,803.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

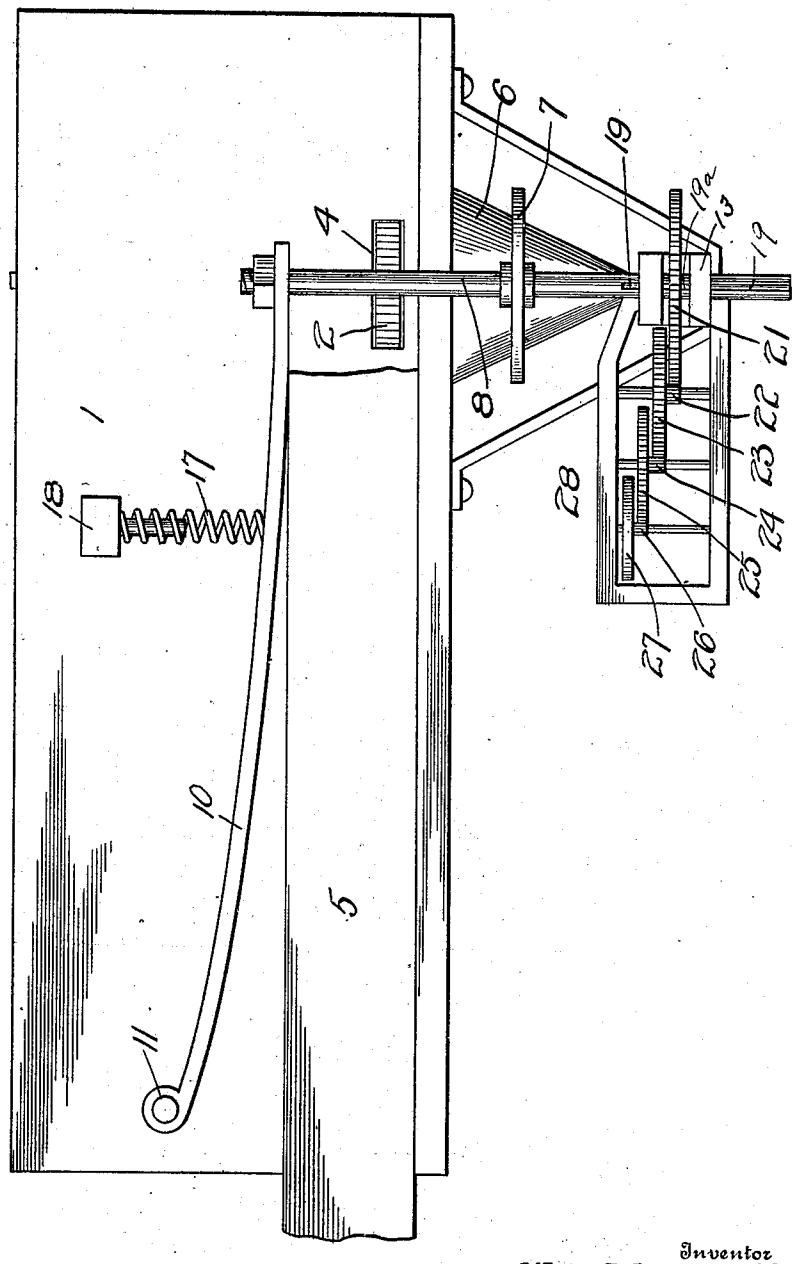


Fig. 1.

Witnesses

J. Lee Miller.

M. O. Bowling

Inventor

W. B. Woodruff.

By D. Swift & Co.

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

W. B. WOODRUFF.

LUMBER MEASURING DEVICE.

APPLICATION FILED MAY 7, 1908.

920,803.

Patented May 4, 1909.

2 SHEETS—SHEET 2.

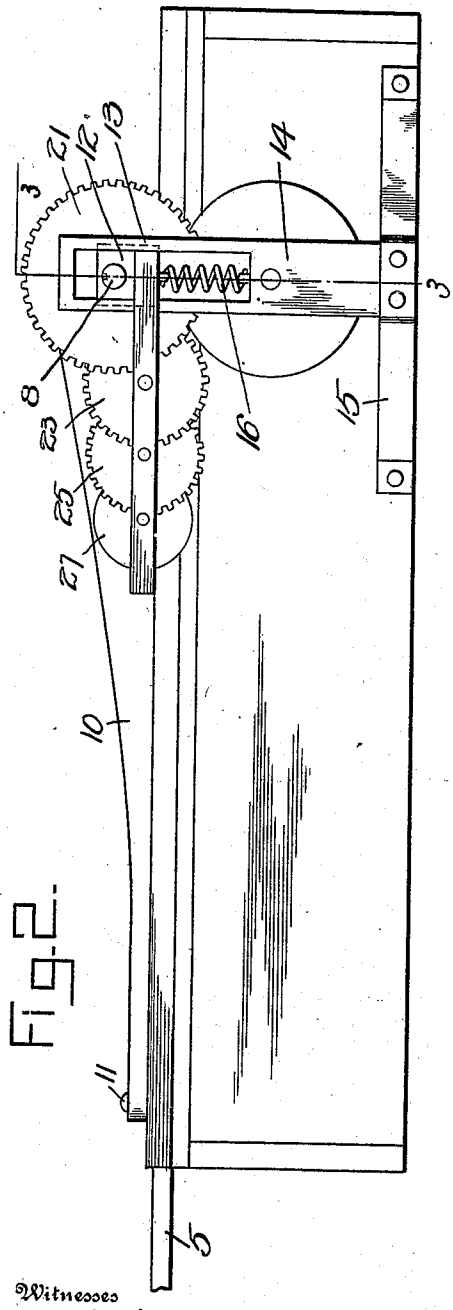


Fig. 2.

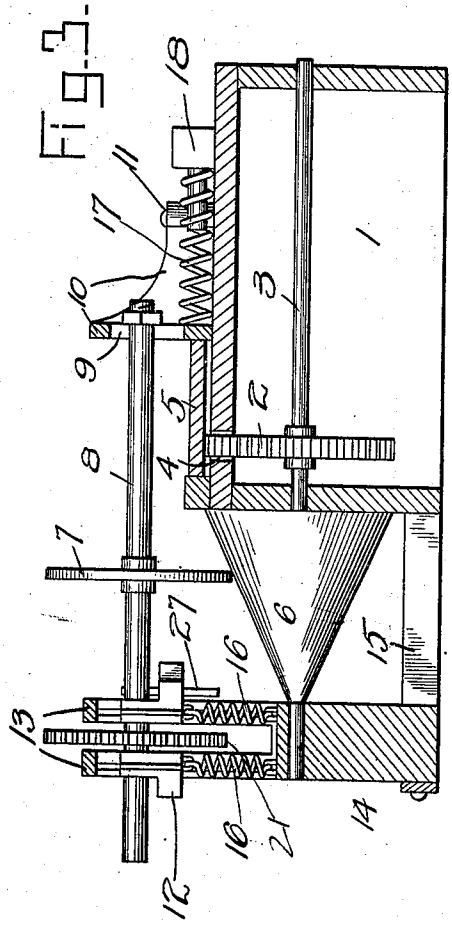


Fig. 3.

Witnesses

J. H. Miller.

M. O. Bowling

Inventor

W. B. Woodruff.

By D. Swift & Co.

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIS BYRON WOODRUFF, OF CADIZ, KENTUCKY.

LUMBER-MEASURING DEVICE.

No. 920,803. Specification of Letters Patent. Patented May 4, 1909.

Application filed May 7, 1908. Serial No. 431,484.

To all whom it may concern:

Be it known that I, WILLIS BYRON WOODRUFF, a citizen of the United States, residing at Cadiz, in the county of Trigg and State of Kentucky, have invented a new and useful Lumber-Measuring Device; 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.

My invention relates to improvements in lumber measuring appliances, which may be termed cyclometers.

It has for its object primarily to effect the automatic measurement of the actual or correct number of square feet of lumber of any width and length which may be passed through any kind of wood working machine, a sawmill, or planing mill, and whereby the operator, or others for that matter, may ascertain instantly, to the foot, the amount of material or lumber which has passed through the machine or saw-mill from one to a hundred thousand feet. It also has in view to carry out the aforesaid ends in a simple, economic and effective manner.

The invention consists of certain features or instrumentalities substantially as hereinafter fully described and defined by the claims.

In the accompanying drawing illustrating the preferred embodiment of my invention, Figure 1 is a plan view thereof as applied for actual use. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section produced through Fig. 2 on the line 3—3.

In carrying out my invention, I suitably arrange in a table or support 1, such as is usually employed in a planing or saw-mill, a spur or toothed wheel 2, with its shaft 3 bearing in the upright longitudinal members of said support or table and its perimetric or toothed portion extending upwardly through a slot 4 in the table-top, slightly beyond the upper surface of the latter or just sufficiently to be engaged by a board, say 5, which is being fed along the table for rotating said wheel and its shaft for a purpose presently made apparent. Suitably arranged with relation to said table and secured to an extension of the shaft 3, is a cone or tapered member 6 and therefore adapted to partake of the motion of the spur wheel and have the same rate of speed, the function of which will later appear. Said cone is preferably twelve inches long or in the direction of its axis and tapers from a foot diameter at one end to one inch at its opposite end in practice accordingly outlined or designated by numerals and lines upon its perimetric surface suggestive of that fact in inches.

A plane-faced second wheel or roll 7 is suitably supported in position to allow its following or moving along the inclined surface of the cone or tapered member 6, in the direction of its axis, as well as to be rotated by the latter, said wheel having its shaft 8 extending at one end through the vertical slot 9 of a slotted resilient or spring metal member or bar 10 suitably secured at its narrow end as at 11, to the table or support 1. The opposite end portion of the shaft 8 is carried and extended through movable bearings 12, having vertically slidable connection with the spaced-apart arms or portions 13 of a standard or support 14 preferably bracketed as at 15 to the table or support 1. Said bearings 12 are resiliently stressed downwardly by springs 16 connected thereto and to the standard or upright 14, and the spring member 10 is itself reinforced by an additional spring 17 suitably connected to a preferably pin-equipped bracket or member 18 fixed upon or to the table 1, the pressure thus exerted upon the shaft supporting member 10 serving to hold it automatically or yieldingly in contact with, and accommodate it to the width of the board being operated upon, while the downwardly stressing action of the springs 16 retains the wheel or roll 7 in effective contact with the cone 6 the purpose of which will next appear. It will be noted that the wheel or roll 7 being allowed rotatable contact with the cone or tapered member 6 as well as movement axially along the inclined surface thereof the square-foot measurement of the board is obtainable. The rotary motion of the member 6, depends solely upon the length of the board that is being measured, while the position of the wheel or roll 7 upon the said member 6, depends upon the width of the board, hence the rotary motion of the roll 7, depends upon both the length and width of the board, as will be clearly manifest. The gear 21 is splined or keyed to the shaft 8 by means of a key or feather 19^a, which engages a groove 19 formed in the shaft 8, as seen clearly in Fig. 1; in this manner, the shaft 8 is allowed to move bodily through the said gear 21, but

still allowing said gear 21 to intermesh with the pinion 22, as will be clearly evident upon examining Fig. 1 of the drawings. The record of such measurement is effected by the graduated train of gearing and their intermeshing pinions, said parts being designated 21, 22, 23, 24, 25, 26, 27 and whose shafts are suitably borne by a frame 28 fixed to, or integral with the bearings 12 carrying one end of the shaft 8. Said graduated gearing in practice has its units of value ranging in multiples of ten feet to one hundred thousand feet for thus determining the amount of material or lumber in square feet passed through the machine. It will be understood that the taper of the cone or member 6 provides as the boards or lumber lessen or vary in width, for accordingly varying the rate of speed of the wheel or roll 7 and thus varying the registering of the amount of feet.

The position or relation of the aforesaid parts to the work or lumber operated upon may be varied as may be desired, as is apparent, and the device may equally be used for obtaining the lineal measurement of the latter, by effecting the proper calculations in connection therewith. It is further noted that the instrument is automatically adjustable for any and all widths of lumber and provides for registering by actual square feet all lumber accurately; it is adjustable to board measurement in the minimum time; and it may be arranged in different positions with relation to the machine or mill either under, over, or at the side thereof, whichever may be the most convenient to dispose it out of the way. It requires but little space or attention, and may be adapted for use in the minimum time and is readily detachable from the planing machine or saw-mill in an appreciably, inconsiderable length of time.

It will be understood that the particular indicia or data herein recited may be changed or substituted for any other of a suggestive character, and that the structural details or the particular arrangement of the described parts may be varied without departing from the spirit of my invention and the latter yet remain intact and within the scope thereof.

I claim,

1. A device of the character described comprising a resilient bar-member, resiliently mounted bearings, a shaft equipped with a rotary member and carried by said resilient bar-member and said bearings, a shaft equipped with means for being fed by a board or lumber and with a cone arranged for contact with said rotary member, and a registering mechanism actuated by said first named shaft.

2. A device of the character described, comprising a resilient bar-member, resiliently mounted bearings, slotted supports for said bearings, a shaft borne by said bar-member and said bearings, and equipped with a rotary member, said bar member adapted to allow the vertical movement of said shaft therein, a second shaft also having fixed thereto a rotary member adapted for engaging and being fed by a board, and a cone carried by said second shaft and adapted for contact with the rotary member of the first referred to shaft, and a registering mechanism actuated by said first noted shaft.

3. A device of the character described, comprising a slotted spring bar vertically slidable bearings, a shaft carried by said spring bar and slidable bearings, a wheel or roller carried by said shaft, a spur-wheel having its shaft carrying a cone or tapered member, and said roller engaging said cone, and springs for stressing said slidable bearings, downwardly.

4. A device of the character described, comprising a slotted spring pressed bar, vertically slidable bearings, springs for downwardly stressing said slidable bearings, a shaft carried by said slotted spring pressed bar, and said slidable bearings, and itself carrying a roll or wheel, a spur wheel extending into a slot in the lumber feeding table a shaft bearing said spur wheel, and a cone also carried by the latter shaft and engaged by said roll.

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

WILLIS BYRON WOODRUFF.

Witnesses:

WALLIS G. SHAW,

J. S. WILSON.