

WILLIAM E. WALTON.

Improvement in Lumber Measures.

No. 120,685.

Patented Nov. 7, 1871.

Fig. 1

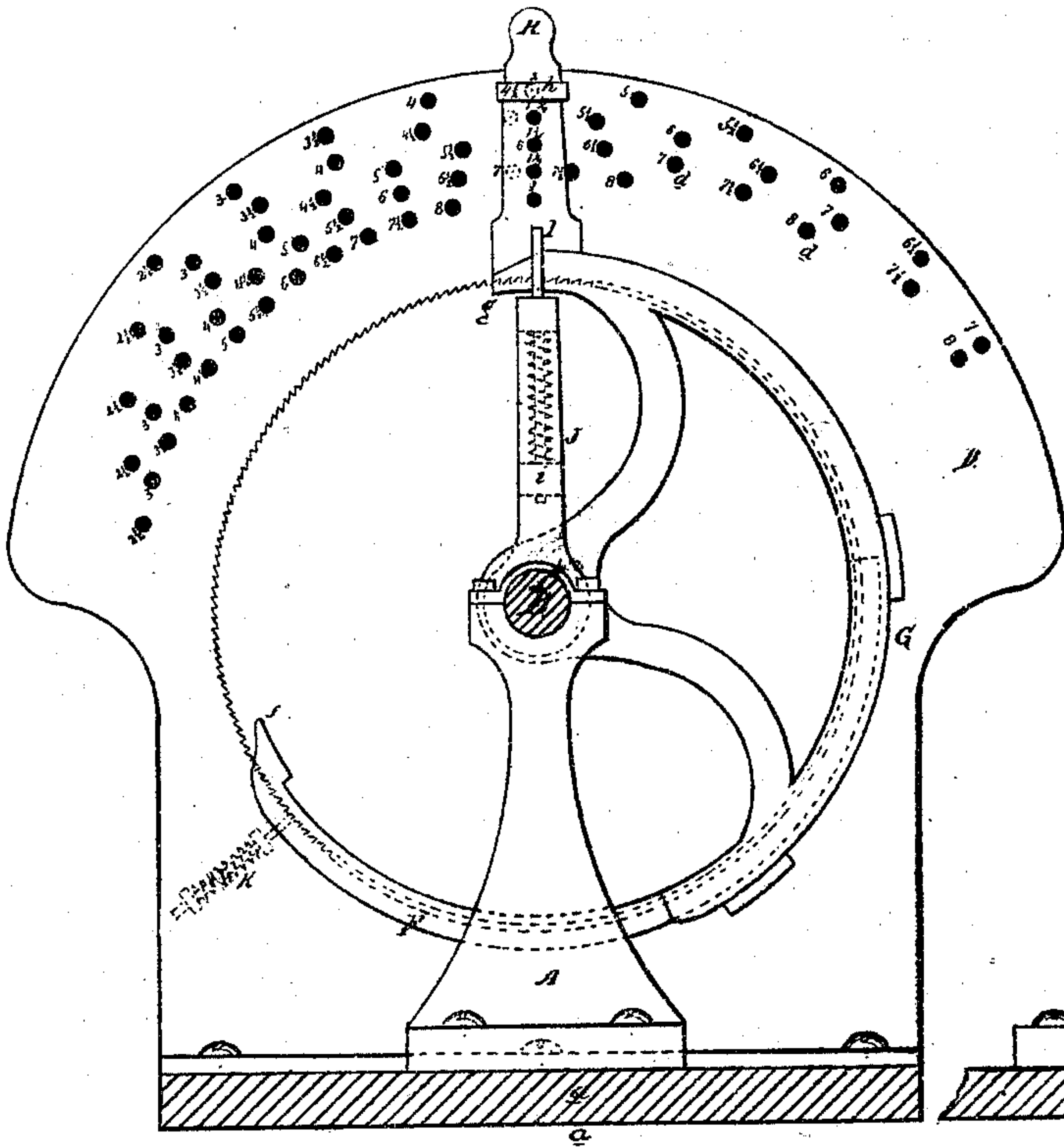


Fig. 2

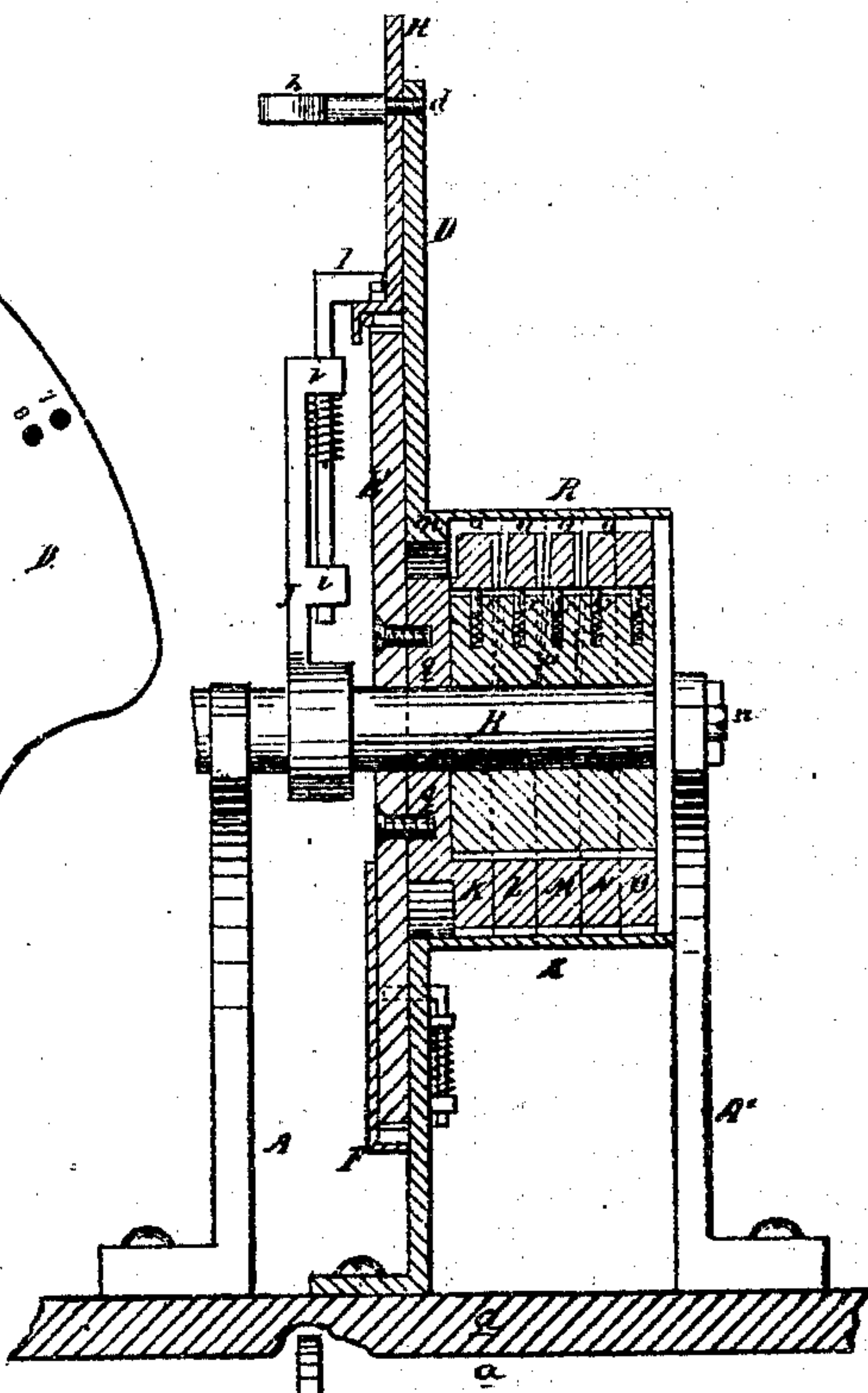


Fig. 3

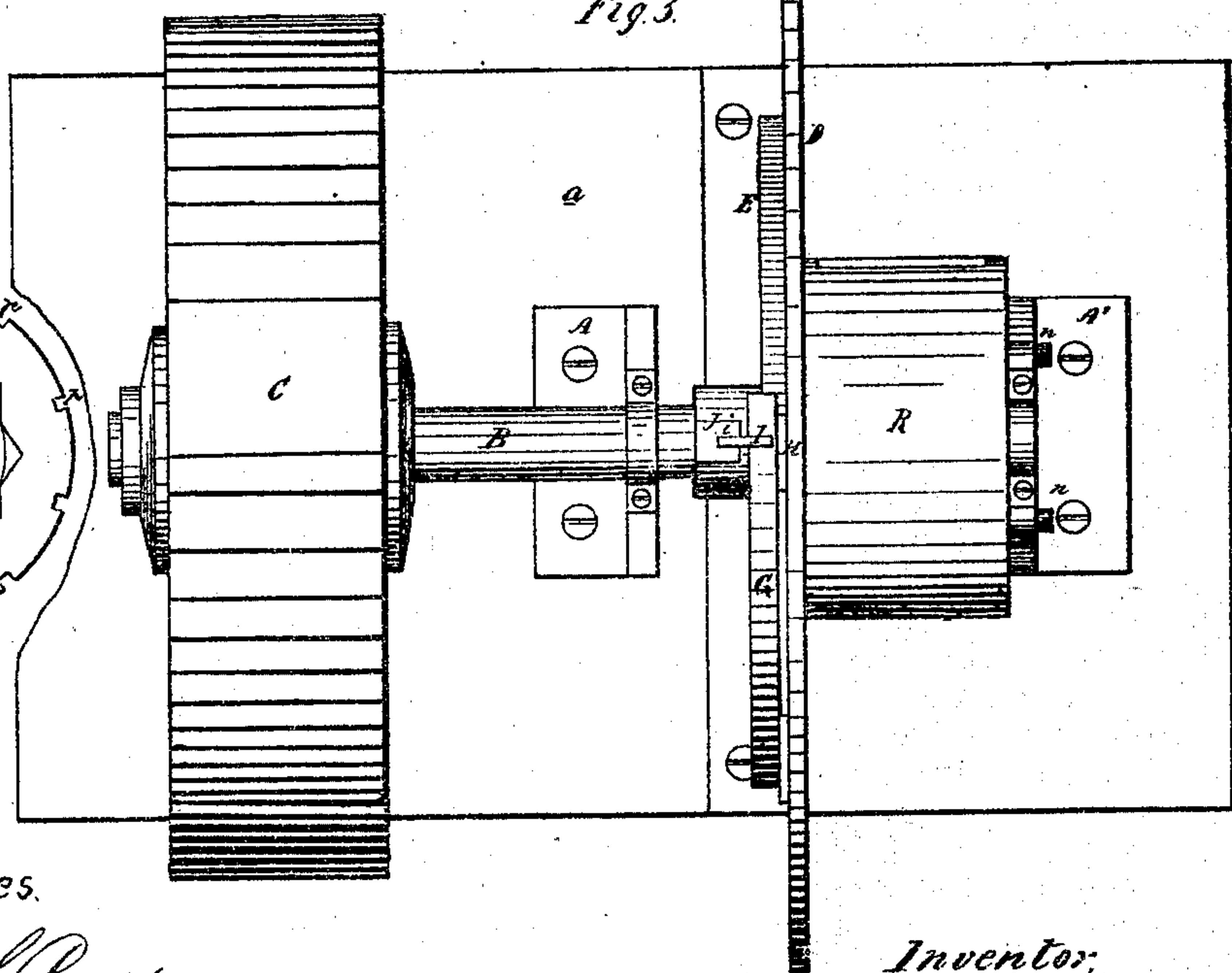
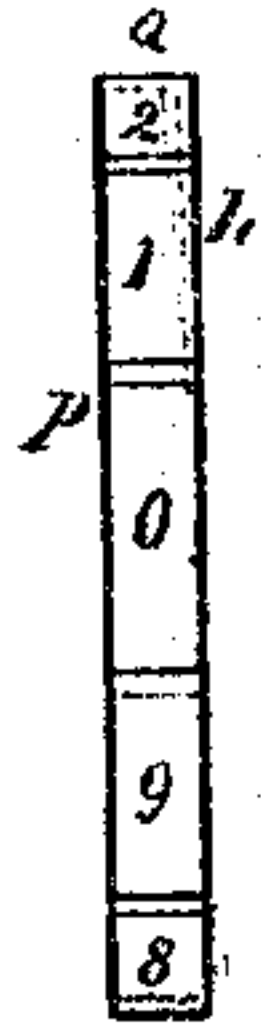


Fig. 4



Witnesses.

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IMPROVEMENT IN LUMBER-MEASURES.

Specification forming part of Letters Patent No. 120,685, dated November 7, 1871.

To all whom it may concern:

I, WILLIAM E. WALTON, of Chester, in the county of Delaware and State of Pennsylvania, have invented a new and Improved Lumber-Measurer, of which the following is a specification:

My invention relates to a mode of calculating and registering the number of feet (board-measure) of lumber as it passes through a planing or sawing-machine; and consists in so arranging a roller of a certain circumference in connection with a ratchet-wheel, pawl, guides, and an indicator, that the latter will show the quantity of lumber that passes through the machine.

Figure 1 is an end view with the roller removed. Fig. 2 is a side section, also without the roller. Fig. 3 is a plan, and Fig. 4 shows the manner of constructing the indicating-wheels.

A and A' are brackets screwed to the bed-plate *a*, and support the shaft B. Upon this shaft is secured a roller, C, of wood or other suitable material, measuring precisely four feet on its circumference. D is a metal plate, also screwed to the bed-plate. Against this metal plate, and revolving loosely on the shaft B, is a ratchet-wheel, E, which is provided with two hundred and forty teeth. F is a stationary guide attached to the plate D, and G is a movable guide rotating on the shaft B and against the plate D. These guides are semi-circular in form, and are arranged to cover a portion of the teeth of the ratchet-wheel E, the number of teeth left exposed being determined by the position of the movable-guide G, which is moved by the lever H, and is secured in any desirable position by the pin *h* in the holes *d* in the plate D. There are five holes in the lever H in a perpendicular line, and five rows of corresponding holes in the plate D. The holes in the lever are marked, respectively, commencing at the bottom, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, and 2, and each row of holes in the plate D 2, $2\frac{1}{2}$, 3, and upward. The holes in the lever are marked to show the operator in which to place the pin *h* according to the thickness of the boards about to be planed or sawed, and those in the plate show in which to secure the pin to correspond with the width of said boards. I is a spring-pawl sliding in brackets *i* on the arm J, said arm being firmly secured to the shaft B and revolving with it. The pawl I is arranged to fit in the exposed teeth of the ratchet-wheel E, and carries the latter with it during its revolu-

tion, but bears against the outside of the guides F and G when opposite the teeth which are covered. The ends *f* and *g* of the guides F and G are beveled in order to lower or raise the pawl I gradually into or out of the teeth of the ratchet-wheel. *k* is a spring-catch to prevent the ratchet-wheel from revolving backwards. K, L, M, N, and O are indicating-wheels which revolve upon the collar P, the said collar being held stationary by means of screws *n n* in the bracket A'. Each of these wheels is divided into ten equal parts, stamped, respectively, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and ten slots *p*, in one of which is placed a spring-catch, Q, arranged so that when not pushed forward from its natural position the wheel to which the spring is attached can revolve without interfering with the next adjoining wheel, but when slid into the slot of the next wheel will cause it to revolve also. The first wheel K is permanently attached to the ratchet-wheel E by means of the shoulder *q*. *m* is a projection on the plate D which operates on the spring-catch of the indicating-wheel K during the revolution of the latter, and causes said spring-catch to slide into the slot of the next wheel L. R is a covering projecting from the plate D, and has a slot or opening only large enough to expose one figure of each wheel to view at a time. The small spring-catches *r* serve to retain the indicating-wheels in the position to which they have been carried.

Suppose the operator is about to plane or saw a quantity of boards 2 inches thick and $4\frac{1}{2}$ inches wide: The indicating-wheels are turned until the figure 0 is exposed on each. He then places the pin *h* in the hole marked 2 in the lever H, and moves the lever along until the pin meets the hole marked $4\frac{1}{2}$ in the corresponding row of holes in the plate D and secures the lever, by means of said pin *h*, firmly in this position. This is the position in which the machine is shown in Fig. 1 of the drawing, and leaves seventy-two teeth of the ratchet-wheel exposed to the action of the revolving pawl. The boards as they come from the planing or sawing-machine bear on the roller C and cause it to revolve, and as the circumference of the roller is four feet, every four lineal feet of board will cause it to make one revolution; during this revolution it has carried with it the ratchet-wheel E a distance equal to the length of seventy-two of its two hundred and forty

teeth; or, in other words, has caused it to make three-tenths of a full revolution; and as this ratchet is permanently attached to the first indicating-wheel K the latter also makes three-tenths of a revolution, or until the Fig. 3 is opposite the opening in the cover, which shows that three feet, board measure, of lumber has passed over the roller C. As the boards continue to pass over the roller the indicating-wheel K still continues to revolve in the same manner until it has made a complete revolution, when the figure 0 appears at the opening and the Fig. 1 is brought forward on the next wheel L by means of the spring-catch Q being operated upon by the projection *m*. In like manner the other indicating-wheels, M, N, and O, assist in performing the work of simple addition, and is a system employed in paging-machines and other registering apparatus.

In the working machine instead of the brackets A and A' being screwed to a base-plate they are made to fit the end of the planing or sawing-machine to which the measurer is to be attached, and clamped thereto in such a position that the boards will bear on the roller C as they come from the machine.

I do not desire to lay any claim to the mode of adding or registering by means of indicating-wheels, as shown in the drawing and described in this specification, as I am aware that similar de-

vices are already in use for different purposes; neither do I wish to confine myself to that particular kind of indicator, as dial-plates with hands similar to those used in ordinary gas-meters would answer the purpose equally well. And although the wheel or roller C is shown and described as being four feet in circumference, any other-sized roller may be employed on the same principle by altering the registering apparatus to suit.

But what I claim and desire to secure by Letters Patent, is—

1. The ratchet-wheel E with the guides F G and pawl I, in combination with the roller C, the whole arranged, substantially as set forth, in connection with an indicating apparatus for the purpose of calculating and registering the board-measure feet of lumber that pass through a planing or sawing-machine.

2. The mode herein described, or any equivalent to the same, of arranging the holes *d* in the plate D, in combination with the lever H and movable-guide G for the purpose of securing the latter in position to leave any desired number of teeth in the ratchet-wheel E exposed to the action of the pawl I.

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Witnesses:

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