

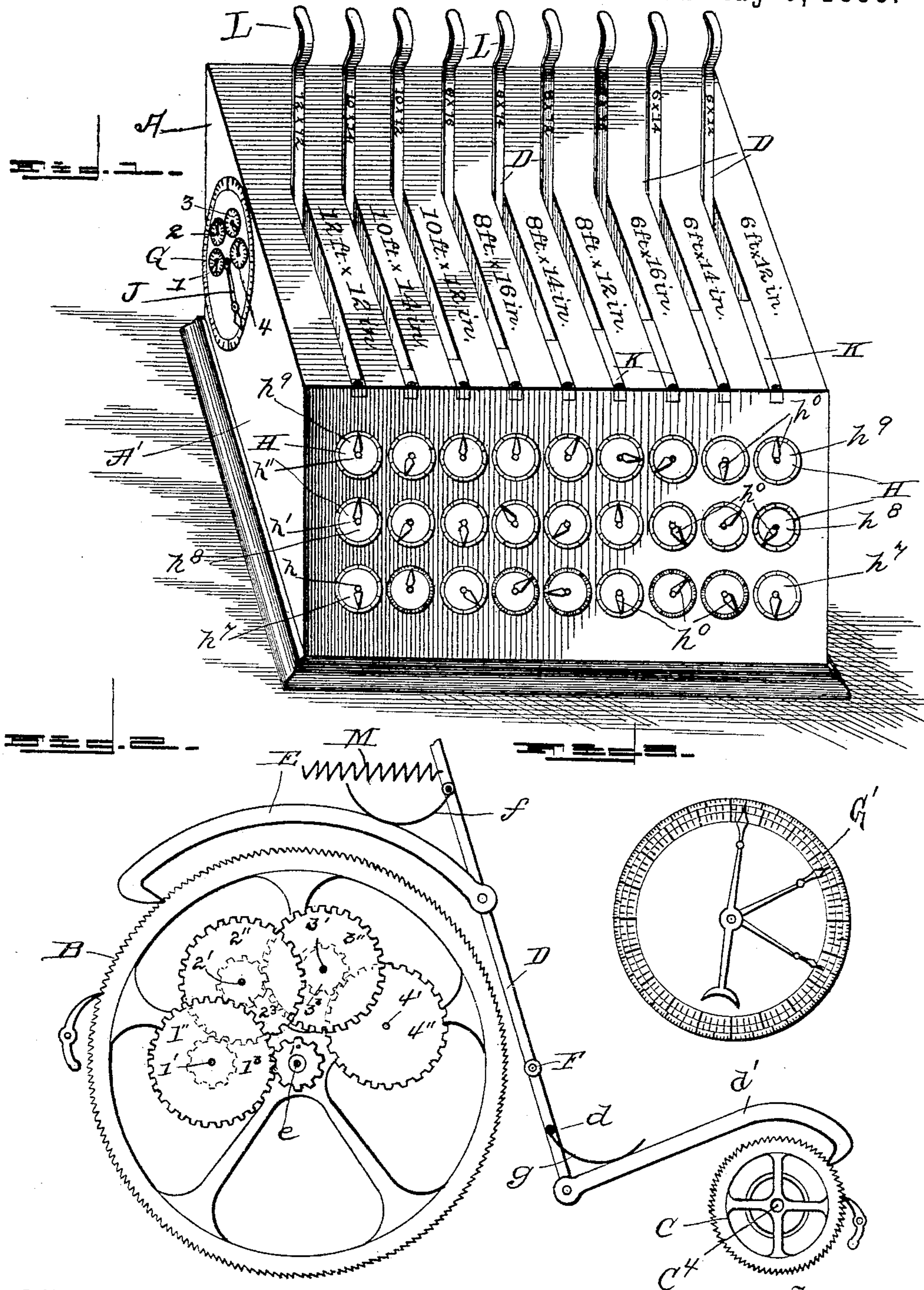
(No Model.)

2 Sheets—Sheet 1.

M. RHODES.
LUMBER TALLYING MACHINE.

No. 496,980.

Patented May 9, 1893.



Witnesses
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Chas. H. LaForte.

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Malon Rhodes
by Walton H. Co.
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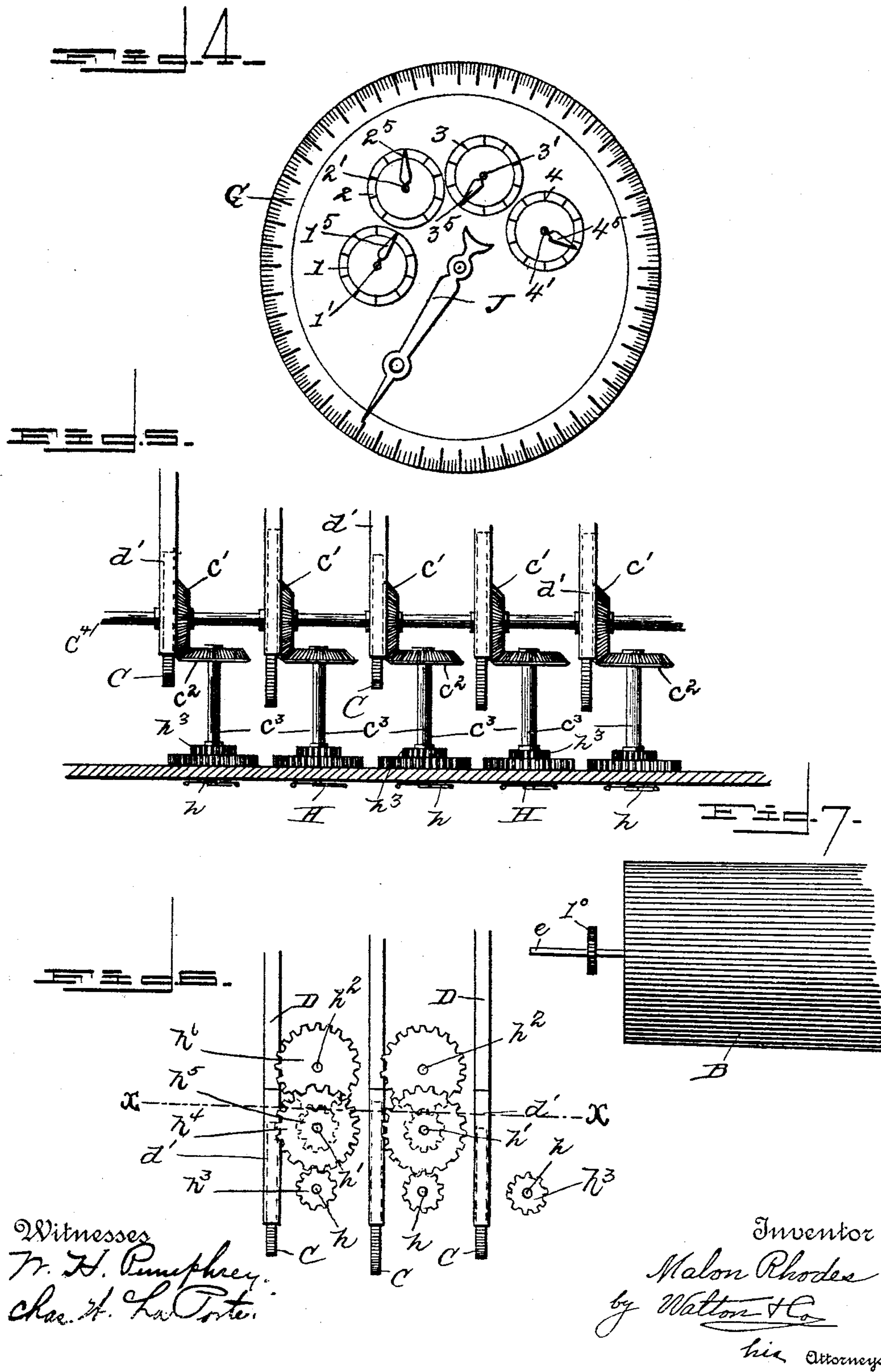
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UNITED STATES PATENT OFFICE.

MALON RHODES, OF MARENGO, WISCONSIN.

LUMBER-TALLYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 496,980, dated May 9, 1893.

Application filed October 26, 1892. Serial No. 450,023. (No model.)

To all whom it may concern:

Be it known that I, MALON RHODES, a citizen of the United States, residing at Marengo, in the county of Ashland and State of Wisconsin, have invented certain new and useful Improvements in Lumber-Tallying Machines; 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.

The object of my invention is to provide a simple and accurate machine for counting or tallying lumber which will tally lumber of different dimensions in feet and fractions of a foot, and so arranged that lumber of different dimensions is registered, each dimension by itself, in feet, and fractions of a foot, when fractions occur, in connection with a register for tallying the total amount of feet and fractions thereof of all dimensions of lumber measured, so that it can be readily determined by referring to indicators the number of feet, and fractions of a foot where fractions occur, of any particular dimension, as well as the total amount counted.

My invention relates more particularly to the peculiar mechanism shown for operating the chain of gears or cylinder and toothed wheels which transmit motion to the several pointers.

Reference is to be made to the accompanying drawings in which: Figure 1 represents a perspective view of the tallier. Fig. 2 is a view in side elevation of the milled or grooved surface cylinder, gearing for the large indicator, one of the small toothed wheels, and levers and pawls for revolving the cylinder and small toothed wheel. Fig. 3 represents a modified form of a dial which may be used to represent hundreds, thousands, tens of thousands, &c., in place of the dials shown in Fig. 1. Fig. 4 is the dial face of the large indicator for representing the total amount of lumber of all dimensions tallied. Fig. 5 is a sectional view of a form of gearing which may be used to connect each registering lever with the lower or first dial pointer of its series for registering the amount of lumber of a particular dimension by itself. Fig. 6 is a front detail view with dial removed of the gearing to operate the upper dial pointers or indicators

from the first indicator. Fig. 7 is a view in side elevation of the cylinder, its axis and gear wheel, parts being broken away for better illustration.

Like parts are indicated by the same reference letters and figures throughout the several views.

A is the tallying machine inclosed in a rectangular shaped casing A'.

B represents the milled or grooved surface cylinder fixedly mounted on a transverse rod the ends of which are suitably mounted in the side walls of the machine. The cylinder extends the width of the machine and revolves with the shaft on which it is mounted.

C represents small toothed wheels, there being one for each lever D, and the wheels are all loosely mounted to revolve in place on a common shaft C¹ fixedly secured in the machine in front of cylinder B.

E represents a ratchet pawl, each lever D being provided with such a pawl similarly arranged to engage the grooves on the surface of the cylinder B.

Levers D are suitably mounted near their ends on a rod F which extends from one to the opposite side wall of the machine. The lower ends *d* of the levers have secured at their lower extremities ratchet pawls *d'* to engage toothed wheels C which work independently of one another, but each, when its lever is pulled forward, in unison with the cylinder B. These pawls are held in engagement by means of springs *f*, *g*, in a usual manner which permits the remaining pawls E to slide over the grooved cylindrical surface without registering when any one lever is pulled.

G is the large dial face on the side of the machine for indicating the total number of feet and fractions of a foot of lumber tallied.

G' is a modified form of a dial face, (see Fig. 3.)

1, 2, 3, and 4 represent the successive smaller dials on the face of the large dial with pointers 1⁵, 2⁵, 3⁵, 4⁵, see Fig. 4, on shafts 1', 2', 3' and 4'. These shafts, see Fig. 2, have large and small gears 1'' 1³, 2'' 2³, 3'' 3³, and 4'' forming a well known form of chain gearing. As it is usual to manufacture lumber into boards of dimensions of even feet and even inches, it is evident that when fractional dimensions

- in feet and inches occur in obtaining the total number of feet and inches in an inch board by multiplying the length by its breadth the fractions will, in any case, be one or two thirds.
- 5 The more usual dimensions of boards are indicated on the spaces between the lever slots I on the top of the measuring device or machine, see Fig. 1 and the levers may be correspondingly marked, as shown.
- 10 The cylinder B has three hundred grooves cut in its outer surface, and the smaller toothed wheels C, connected with levers D which represent fractional dimensions have three hundred teeth on their circumferences.
- 15 The other toothed wheels have but one hundred teeth each for reasons which are hereinafter set forth. The outer circumference of face G is divided into three hundred equal parts each representing a third of a foot, and
- 20 pointer J is fixed to the axis of cylinder B, so that when the cylinder has made one revolution, the pointer has also made a revolution and indicates one hundred feet measured.
- K represents stops adjustable in any well
- 25 known manner in the forward ends of the lever slots to regulate and limit the play of the levers when pulled forward.
- L represents handles of curved shape used for operating the lever.
- 30 M are springs which have a tendency to pull and keep the levers back in the position shown, see Fig. 2. These springs are suitably secured to the levers and to the rear wall of the box or case.
- 35 Each lever D, d and the pawls are so regulated and arranged in with the grooved cylinder and toothed wheels and their play forward so limited that when one of the handles is pulled forward to its stop it will revolve
- 40 the cylinder as many grooves as there are thirds of a foot of lumber in the dimensions of the piece of lumber marked on the lever, and at the same time the lower end d , of this lever will revolve its toothed wheel, the lower
- 45 one of the series, indicating on its dial the number of feet or fractions of a foot, as the case may be. It is, therefore, to be observed that each time a lever is pulled, the large dial G registers an amount equal to the amount
- 50 registered on a particular small dial, and in this manner the total number of feet of lumber tallied is registered on the large dial, and the total number of feet of each dimension also registered on its separate dial or dials.
- 55 There are several small dials on the large dial for registering the number of hundreds, thousands, tens of thousands, &c., of feet. This is accomplished by having a small cog wheel 1° fixed on the cylinder axis e with ten cogs
- 60 or teeth which engage a cog wheel with a hundred cogs $1''$ to operate the pointer of dial plate 1, and a cog wheel 1^3 with ten teeth on the pointer axis of dial plate 1 to engage a cog wheel $2''$ with a hundred teeth on the
- 65 next axis, dial plate 2, and so on. Likewise the axes h of the pointers h^0 on the smaller lower dial registers h^7 on the front of the machine are connected with upper axes $h' h''$ of the dials $h^8 h^9$ for registering amounts higher than a hundred, by means of gear wheels h^3 , h^4 , h^5 , and h^6 , see Fig. 6. Where fractions occur the lower row of dial plates H are marked thirds and register thirds.
- It is evident that by changes in the mechanism, pointers, and dials may be arranged 75 similarly to the hour, minute, and seconds hands of a clock, see Fig. 3.
- The toothed wheels C, loosely mounted to revolve in place on a transverse shaft C^4 common to all, have fixedly attached thereto and 80 revolving with the toothed wheels small bevel cog wheels C' which engage corresponding bevel cog wheels C^2 suitably mounted on shafts C^3 at right angles to the transverse shaft to revolve the former. Shafts C^3 are mounted on 85 bearings of any well known form. These bevel cogs correspond in numbers to the number of teeth on their respective toothed wheels. The pointers on the lower dials are fixedly connected with ends of these shafts C^3 . 90
- The lower dial plates on the front face of the machine indicate numbers up to a hundred, the next dial plates indicate hundreds. The upper dial plates similarly indicate thousands. 95
- When dial plate G' is used with any well known clock mechanism, it is evident that higher numbers may be readily counted or indicated. It is further evident that I may make use of any well known clock mechanism and pointers to register the number of 100 feet tallied, also that with slight changes higher numbers may be registered.
- The operation of the machine is as follows: To count or tally a board six feet long by 105 twelve inches wide, the right hand lever D is pulled forward by handle L as far as it will come and then let go, spring M drawing it back to its normal position. As the lever is drawn forward, ratchet pawl E revolves the 110 grooved cylinder eighteen grooves registering eighteen thirds of six feet by pointer J on the large dial face. At the same time ratchet pawl F revolves the left hand toothed wheel C six grooves, there being but one hundred teeth 115 on this wheel as there are no fractions to register, by means of the bevel gearing before described, and the left hand lower pointer indicates six feet on its dial plate. If it is next desired to register a board eight feet long by 120 sixteen inches wide the lever marked 8×16 is likewise pulled forward and let go, revolving the cylinder thirty-two grooves registering on the large dial plate thirty-two thirds or ten and two thirds feet in addition to the 125 number already registered. Where there are fractions the toothed wheels have three hundred instead of one hundred teeth in order that thirds of a foot may be registered. As the mechanism for registering amounts higher 130 than one hundred feet has been referred to before and is well known and clearly shown, further description thereof is not considered necessary.

It is evident that many changes can be made in the gearing dials and arrangements of the parts without departing from the spirit of the invention.

5 What I claim, and desire to secure by Letters Patent, is—

1. In a lumber tallying machine, the combination of a rectangular shaped casing, a grooved surface cylinder transversely mounted to revolve upon a shaft in one end of the casing, a series of toothed wheels independently mounted to revolve in place on a transverse shaft in the opposite front end of the casing and connected by gear wheels with pointers mounted on dial plates on the front of the casing, a dial plate on one side of the casing, smaller dial plates on the face of the large dial plate, a pointer for the large dial plate fixedly mounted on the end of the cylinder shaft, a chain of gear wheels mounted in the casing in rear of the large dial plate, a gear wheel on the cylinder shaft to operate the chain of gears and to revolve pointers on the small dial plates, a series of levers mounted near their lower ends on a transverse shaft in front of and in proximity to the cylinder, said levers having upper ends extending through slots in the top of the casing, pawls attached to these levers, above and below their shaft, and engaging the grooves on the cylinder and the toothed wheels respectively to revolve the same simultaneously to operate the dial pointers, when the levers are pulled forward in the slots, substantially as described and set forth.

35 2. The combination in a lumber tallying machine, of a rectangular shaped casing, a

grooved surface cylinder fixedly mounted to revolve on a shaft in one end of the casing, a series of toothed wheels mounted to revolve independently in place on a fixed transverse shaft in the opposite front end of the casing, gear wheels fixedly secured to the toothed wheels and in mesh and connection with gear wheels on shafts in the front end of the casing, pointers on the ends of these shafts, dial plates on the front of the casing, a dial plate on one side of the casing, smaller dial plates on the face of the large dial plate, a pointer on the large dial plate fixedly secured to the end of the cylinder shaft, a chain of gears mounted in the casing in rear of the large dial plate, a gear wheel fixedly mounted on the cylinder shaft to operate the chain of gears and pointers on the smaller dial plates, a series of levers mounted, near their lower ends, on a transverse shaft in front of and in proximity to the cylinder, said levers having upper ends extending through slots in the top of the casing, adjustable stops in the slots, pawls attached to the levers, above and below their shaft, and engaging grooves on the cylinder and the toothed wheels to revolve the same simultaneously to operate the dial pointers, when the levers are pulled forward in the slots, as and for the purposes set forth.

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

MALON RHODES.

Witnesses:

GEORGE H. MCCLOUD,
FRANK J. WILLIARD.