2 Sheets—Sheet 1.

J. F. COMLY.

Registering Tape-Measure.

No. 209,658. Patented Nov. 5, 1878.

Fig. 1.

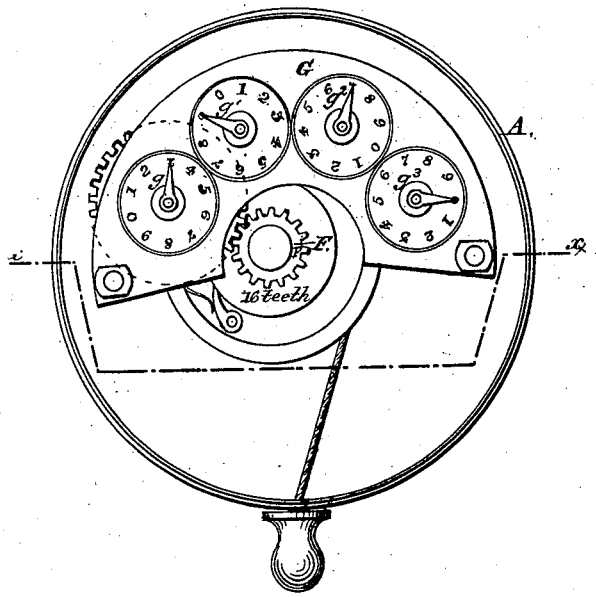


Fig. 2.

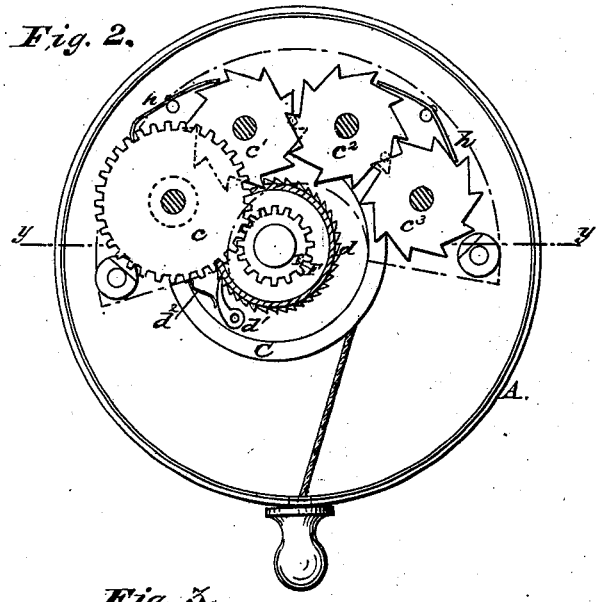
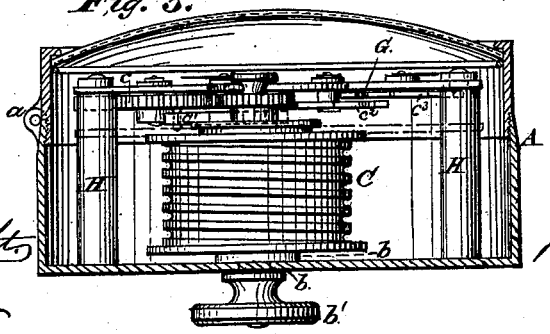


Fig. 3.



Witnesses:

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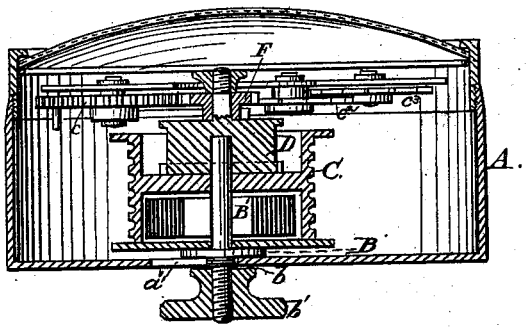
2 Sheets—Sheet 2.

J. F. COMLY.

Registering Tape-Measure.

No. 209,658. Patented Nov. 5, 1878.

Fig. 4.



14 teeth.

20 teeth.

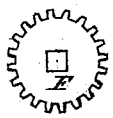
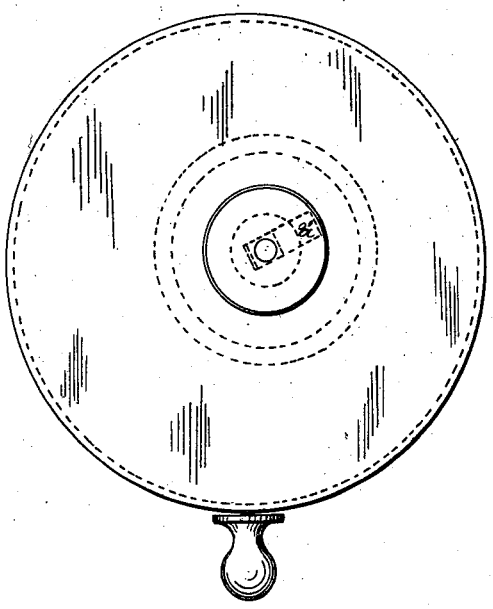


Fig. 5.



12 teeth.

18 teeth.

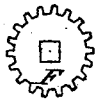
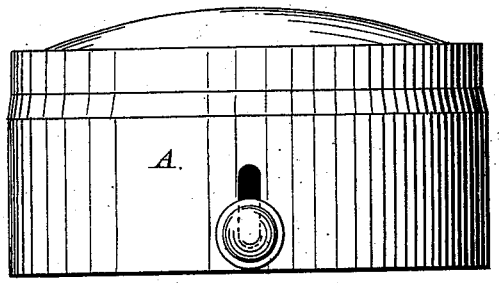


Fig. 6.



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Inventor:
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UNITED STATES PATENT OFFICE.

JAMES F. COMLY, OF NEW LEXINGTON, OHIO.

IMPROVEMENT IN REGISTERING TAPE-MEASURES.

Specification forming part of Letters Patent No. **209,658**, dated November 5, 1878; application filed October 11, 1878.

To all whom it may concern:

Be it known that I, JAMES F. COMLY, of New Lexington, in the county of Perry and State of Ohio, have invented a new and useful Improvement in Measuring-Registers and Calculating-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which—

Figure 1 is a top view. Fig. 2 is also a top view, with the dial-plate removed. Fig. 3 is a vertical sectional view on the line *x x*, Fig. 1. Fig. 4 is a vertical sectional view on the line *y y*, Fig. 2. Fig. 5 is a bottom view, showing the adjusting-slab in dotted lines. Fig. 6 is a view in perspective.

My invention relates to devices for measuring, recording, and calculating the superficial contents of lumber and other like materials; and it consists in providing the tape-reel on which the measuring cord or tape is wound with a single adjustable bearing, whereby it can be moved toward or from the first registering cog-wheel.

It consists, further, in the interchangeable calculating cog-wheels, attachable to the upper end of the reel, and to mesh into the first registering cog-wheel, whereby I am enabled to interpose one of the calculating cog-wheels for specified lengths of the material to be measured, and accurately determine the contents thereof.

It consists, further, in certain details of construction, hereinafter more fully described.

Referring to the drawings, A is a case of suitable construction, made in two parts, and hinged at *a*. The top part of said case is provided with a glass top or cover. The bottom of the case A is provided with a slot, *a'*, in which an arm or projection, *b*, of the disk B is seated, and secured at any point desired by a set or thumb screw, *b'*. On the stem or projection B' of the disk B, I loosely mount the grooved tape-reel C, on which is wound the measuring cord or tape.

The tape-reel is provided with an ordinary spiral spring, by which the cord or tape is wound on the reel when released from the hand of the operator.

On the upper part of the stem or projection B' of the disk B, and in a recess in the tape-reel, I secure a sleeve or drum, D, provided with ratchet-teeth *d*, which are operated upon by the pawl d^1, secured on the end of the tape-reel, and kept in contact with the ratchet-teeth by a strap-spring, d^2.

It will be seen that by drawing out the cord or tape, the tape-reel, drum, calculating cog-wheel, and the whole chain of registering-gearing are acted upon; but when the tape is released it is wound again on the tape-reel by the action of the spring without moving or disturbing the other parts of the device.

The interchangeable calculating cog-wheels F are mounted on an upwardly-projecting stem or stud on the upper end of the sleeve or drum D, and are attached thereto by making the stem or stud at that point square, and the perforations in the cog-wheels F correspondingly square, and secured by a screw-nut. Any strong reliable device may be resorted to for securing the calculating-wheels to the stem or stud; but I prefer the one above described.

By the above-described arrangement of parts I am enabled to move the axis of the tape-reel and drum toward and from a given point of contact with the first registering-wheel, *c*, and permit the interposition of the interchangeable calculating cog-wheels.

The cog-wheels are made of varied diameters, and have a varied number of cogs made thereon, which, when secured on the stem or stud of the drum D, mesh into the first registering-wheel, *c*. By having these wheels of varied diameters and with varying numbers of cogs capable of being mounted interchangeably on the stem or stud of the drum D, I am enabled to ascertain the superficial contents of bodies of a given length in a simple and convenient manner. Should it be desirable, for instance, to measure a lot of lumber twelve feet in length, I then use a calculating-wheel having twelve cogs. If the length of the lumber be sixteen feet, I interpose a wheel with sixteen cogs, and so on.

The first registering-wheel, *c*, the spindle or axis of which carries an index-finger for registering units, is provided on its face with a downwardly-projecting pin, which engages with the notches on the second registering-

wheel, c^1. The spindle of the wheel c^1 carries an index-finger, which registers the tens. The wheel c^1 is provided on its face with an upwardly-projecting pin, which engages with notches in the third registering-wheel, c^2, the spindle of which carries the index for registering hundreds. The wheel c^2, is also provided on its upper face with an upwardly-projecting pin, which engages with notches on the fourth registering-wheel, c^3, the spindle of which carries the index for registering thousands. It will be readily seen that when the wheel c has made one revolution, its projecting pin will come in contact with the notches on the wheel c^1, moving it around one point, registering ten; and when the second wheel has made a revolution, its pin will move the wheel c^2 one notch, and record a hundred, and so on.

For registering the number of feet I use four dials, g g^1 g^2 g^3, each provided with an index-finger. The dials are provided with a series of numbers, indicating or representing different values, the first, g, indicating units; the second, g^1, indicating tens; the third, g^2, indicating hundreds; and the fourth, g^3, indicating thousands. The lumber or other material measured is thus tallied on the dials and can be read at a glance. Any number of dials may be used; or I may use dials with numbers indicating the superficial contents in feet or in yards, and other dials indicating the amount in money value of the articles measured, without departing from the spirit of my invention. The plate G, on which the dials are printed or stamped, is a metallic segment, and is supported at each end on the posts H H, the said posts being firmly secured in the base-plate of the device. I may in practice use a similar metallic segment for supporting the lower ends of the axis of the registering-wheels. To prevent the registering-wheels from turning in a reverse direction, and thus confusing the count, I employ double spring-pawls h, which engage with the notches of the registering-wheels. The reel-wheel C is, by preference, five inches in circumference, so that in one revolution of said wheel five inches of the measuring cord or tape is paid out. This insures a perfect working device.

Having thus described my invention, I claim—

1. In a measuring, registering, and calculating machine, the tape-reel provided with a single adjustable bearing, whereby the said reel is capable of being moved toward and from the first registering-wheel, c, to admit of the interposition of various-sized interchangeable calculating cog-wheels for measuring and recording specified lengths of material, substantially as described, and for the purpose set forth.

2. In a measuring, registering, and calculating device, the interchangeable calculating cog-wheels F, each wheel being constructed with reference to specified lengths of material, substantially as described.

3. The combination of the adjustable tape-reel C and drum D with the interchangeable calculating cog-wheels F, when constructed and arranged substantially as described, and for the purpose set forth.

4. The combination of the adjustable tape-reel C and drum D with the interchangeable calculating cog-wheels F, registering-wheels c c^1 c^2 c^3, and the index and dial-plate, when constructed in the manner described, and for the purpose set forth.

JAMES F. COMLY.

Witnesses:
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WM. P. YOUNG.