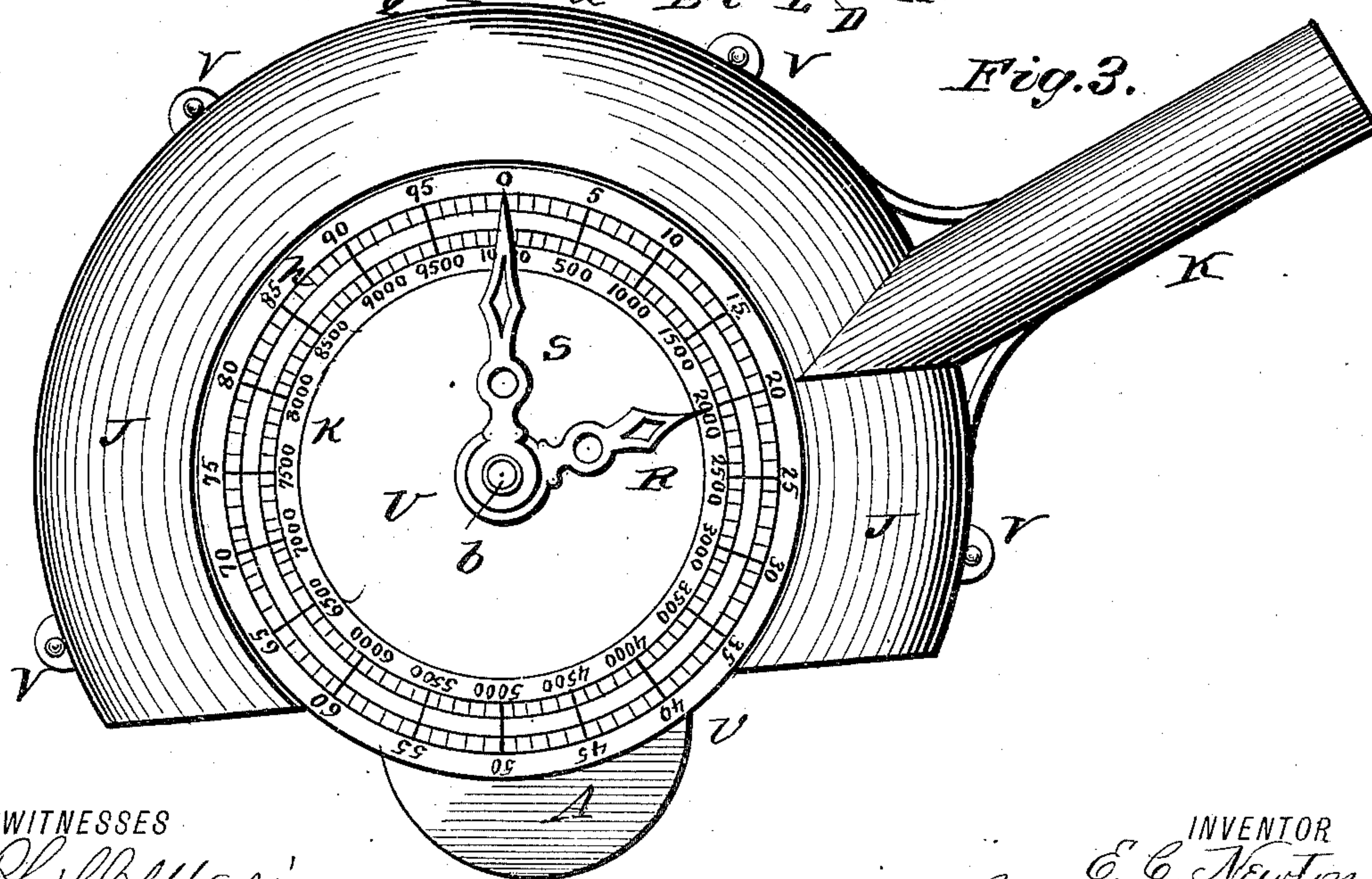
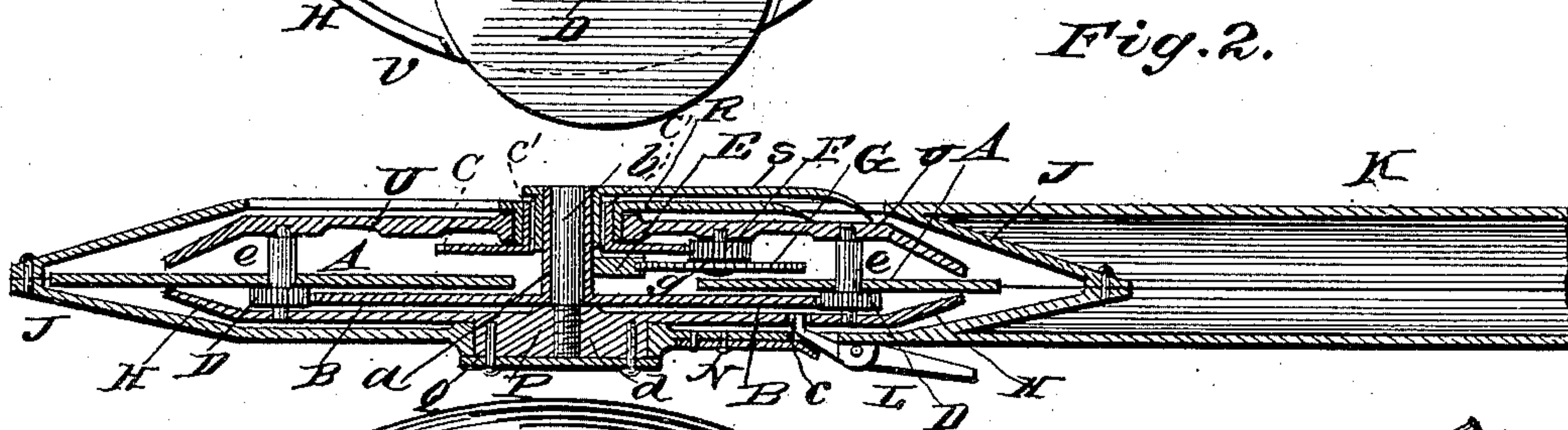
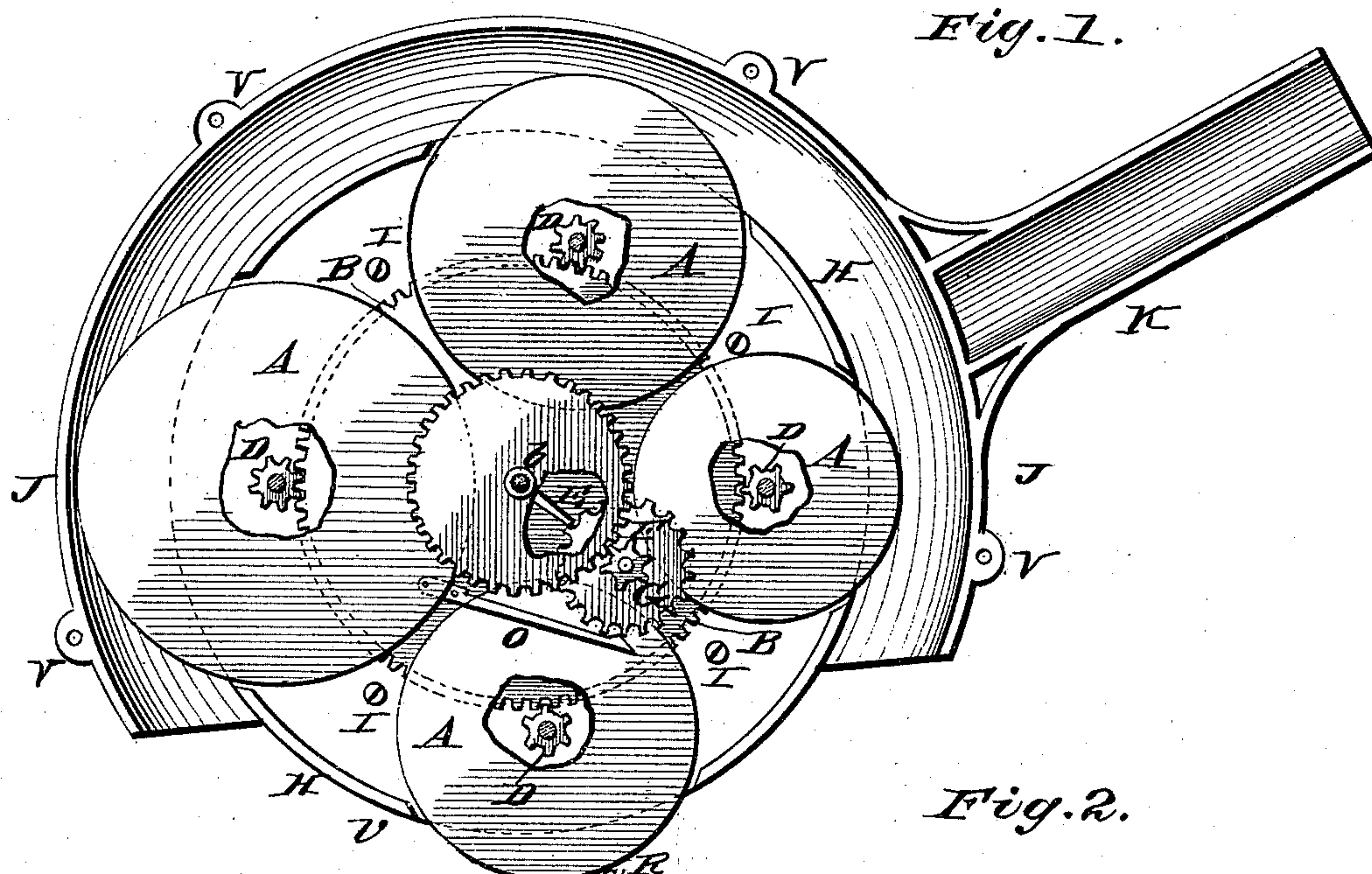


(No Model.)

E. C. NEWTON.
LUMBER MEASURE.

No. 307,675.

Patented Nov. 4, 1884.



WITNESSES
Phil Masi
E. H. Bates

INVENTOR
E. C. Newton
by *Anderson & Smith*
his ATTORNEYS

UNITED STATES PATENT OFFICE.

EARL C. NEWTON, OF BATAVIA, ILLINOIS.

LUMBER-MEASURE.

SPECIFICATION forming part of Letters Patent No. 307,675, dated November 4, 1884.

Application filed June 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, EARL C. NEWTON, a citizen of the United States, residing at Batavia, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Lumber-Measures; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of my device with one of the side faces removed. Fig. 2 is a longitudinal vertical sectional view of the same, and Fig. 3 is a side view.

This invention has relation to lumber-measuring machines; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and pointed out in the appended claims.

In the accompanying drawings, the letters A A A A represent traverse-wheels, which are made of different sizes to correspond with different lengths of boards, so that when one of said wheels is rolled across a board of corresponding length it will indicate the number of feet in the board on the dial U of the machine. Each traverse-wheel A is provided with a pinion, D, which engages the large cog-wheel B, and when the corresponding traverse-wheel is rotated moves said cog-wheel. The hub *a* of the cog-wheel B is seated on the center pin or pivot, *b*, and is provided with a striker-arm, E, which, at every revolution of the wheel B, engages a tooth of the tooth-wheel G, moving the latter one step. A pinion, F, is attached to the toothed wheel G, which engages and operates the cog-wheel C, which has its bearing on the aperture of the dial V.

H represents the inner case of the machine, which covers in all the mechanism except the outer portions of the traverse-wheels A.

J represents the outer-case wall, which covers all the traverse-wheels except that one which is to be used, an opening being left in the outer case for the traverse-wheel, which is brought to said opening by turning the inner case, H, on its center bearings.

O represents a spring-dog, which engages the toothed wheel G and keeps it from turning, except when moved by the arm E. The screws I connect the walls of the inner case, H, together.

To the hub of the wheel B is fastened the long indicator-hand S, which points out upon the dial the number of feet from one to one hundred. The short hand R is fastened on the hub C' of the cog-wheel C, and indicates on the dial the number of feet from one hundred to ten thousand. The dial U is formed on the front of the cam H.

L represents a latch, which is connected to the outer case, J, and is adapted to engage catch-bearings *c* of the inner case, H, to prevent the latter from turning. The latch L is held to its duty by a spring, N.

P represents that portion of the inner case which forms a journal revolving in the bearing *d* of the outer case, and Q is a plate which is secured to the journal portion P by screws, and serves to hold the case J to the case H. The traverse-wheels and their pinions are provided with journals *e*, which run in bearings in the front and back of the inner case, H. The toothed wheel G and its pinion run on a screw-stud, *g*, and the cog-wheel C runs in a bearing-aperture in the center of the dial U. There is, therefore, no connection or friction between the hands R and S. The dial U is provided with an outer scale, *h*, and with an inner concentric scale, *k*. The outer scale, indicated by the long hand S, shows the number of feet from one to one hundred. The inner scale, indicated by the short hand R, shows the number of feet from one hundred to ten thousand. The outer case is held together by the screws V V. The handle K is connected to the outer case.

In operating this device, first turn the hands so that they will both point to the cipher on the dial; then disengage the latch L and turn the inner case so that the largest wheel A will be in position for use. This wheel is designed to be of the proper size to measure boards twelve feet long. When rolled across a board ten inches wide, the long hand S will be moved ten points on the dial, indicating ten feet. When the wheel has been rolled across ten boards, each ten inches wide, the hand S will

have made one full revolution, and the arm E will move the wheel G one tooth, thus moving the hand R one point on the dial. This operation can be continued until the hand R has
 5 made one full revolution, indicating ten thousand feet on the dial. This is, of course, the surface measure, representing boards one inch thick. For thicker boards, it will be necessary to add to the amount indicated on the dial—
 10 as, for instance, if the boards are one and one-fourth inch in thickness, one-fourth of the amount indicated on the dial must be added thereto. If the boards are two inches thick, the amount indicated should be doubled. The
 15 traverse-wheels are designed for boards respectively twelve, fourteen, sixteen, and eighteen feet long. These are the most common lengths; but the machine may be made to measure other lengths of boards by adding
 20 other wheels. For long boards, the measurement may be made by addition—as, for example, in measuring twenty-foot boards, use the sixteen-foot wheel and add one-fourth to the amount indicated on the dial.

25 Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a board-measure, the combination, with traverse-wheels of different size, respect-

ively provided with pinions, of the toothed 30 wheel B and its long hand, the toothed wheel C and its short hand, the wheel G and its pinion, the arm E, the dog O, the adjustable rotary inner case, H, and its dial, substantially as specified.

2. In a board-measure, the combination, 35 with the outer case, of an adjustable inner case carrying a dial, traverse-wheels of different size, gearing, and indicating-hands, substantially as specified.

3. In a board-measure, the combination, 40 with the outer case, J, and the latch L, of the inner case, H, and its dial, the traverse-wheels of different size, their pinions, the cog-wheels B and C and their hands, the wheel G, its pinion, and the arm E and dog O, substantially 45 as specified.

4. In a board-measure, the adjustable traverse-wheels geared to move an indicator over a dial, and adapted to be rolled across boards 50 for the purpose of measuring the same, substantially as specified.

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

EARL C. NEWTON.

Witnesses:

W. A. WALCOTT,
 R. E. WINSLOW.