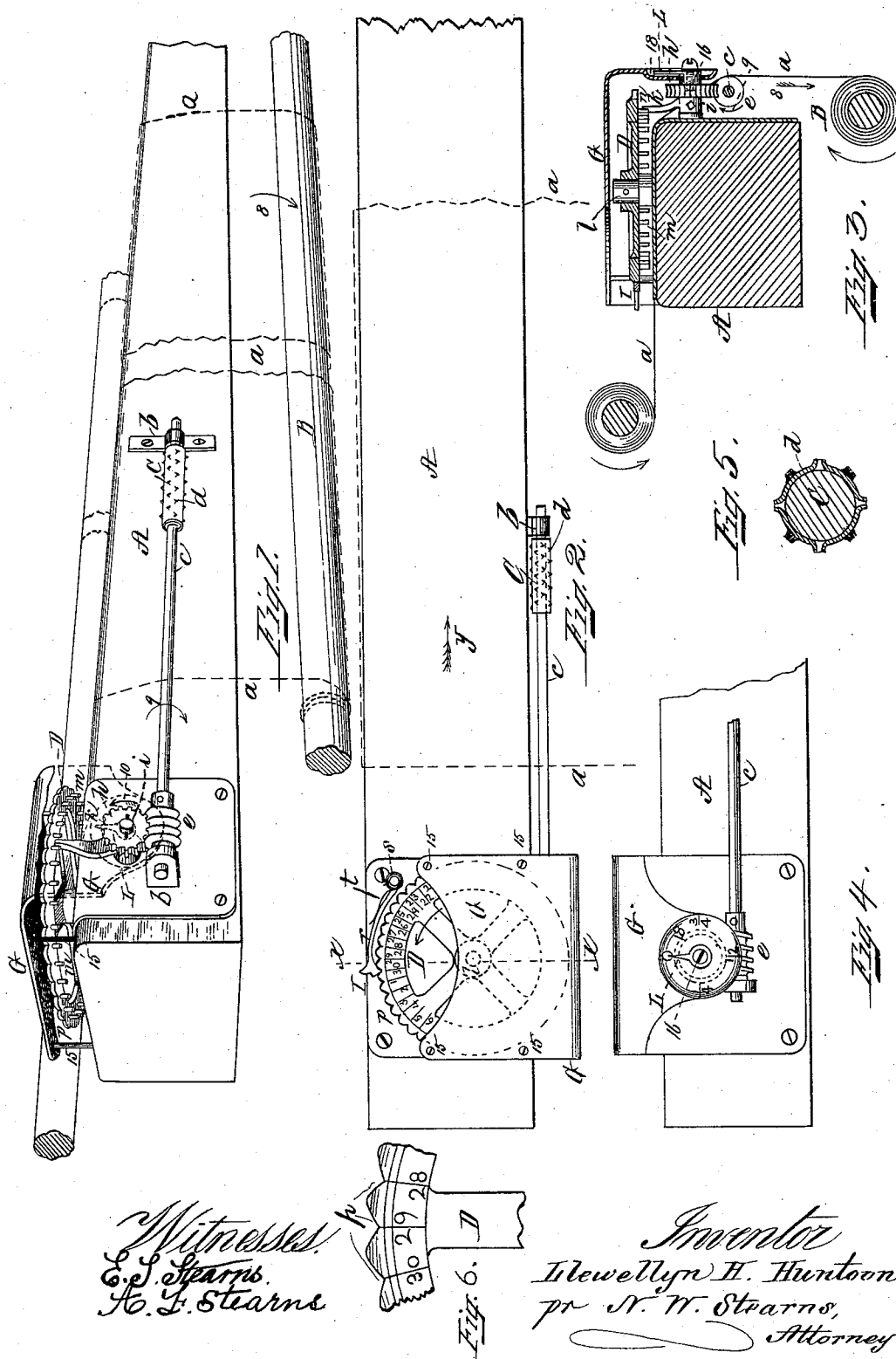


(No Model.)

L. H. HUNTOON.
FABRIC MEASURING DEVICE.

No. 479,091.

Patented July 19, 1892.



UNITED STATES PATENT OFFICE.

LLEWELLYN HENRY HUNTOON, OF MADISON, MAINE.

FABRIC-MEASURING DEVICE.

SPECIFICATION forming part of Letters Patent No. 479,091, dated July 19, 1892.

Application filed March 3, 1892. Serial No. 423,559. (No model.)

To all whom it may concern:

Be it known that I, LLEWELLYN HENRY HUNTOON, of Madison, in the county of Somerset and State of Maine, have invented certain Improvements in Fabric-Measuring Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a perspective view of a cloth-measuring apparatus constructed in accordance with my invention and designed to be attached to a loom. Fig. 2 is a plan of the same; Fig. 3, a vertical section on the line
15 *x x* of Fig. 2, looking in the direction of the arrow *y*. Fig. 4 is a front elevation of a dial representing fractions of a yard; Fig. 5, a transverse section, enlarged, through serrated roll; Fig. 6, a detail to be referred to.

20 The utility of fabric-measuring devices attached to looms and operated by the passage of the material during the process of its manufacture will be recognized by weavers and manufacturers of woven or textile fabrics—
25 such as cloth (silk, woolen, cotton-straw, or wire) and other flexible materials—for the following reasons, viz: First, the operative can always at a glance keep informed of the amount of work he is doing and be constantly
30 stimulated thereby to diligence, the consequence of which is he will weave a greater number of yards of material per day than if he did not have such incitement to exert himself, the result being greater remuneration
35 for himself and greater production for the employer; second, the employer knowing the amount of cloth being produced possesses a check whereby he can prevent the abstraction of a portion of the fabric by any party inclined to be dishonest; third, any predetermined number of yards may be severed to
40 form a roll or bolt of the size required.

My present invention has for its object to provide a simple measuring device of the
45 character referred to which may perform its function whether attached to a loom during the process of weaving or when disconnected therefrom for measuring the material after being woven; and my invention consists in the combination or association of certain elements in a peculiar manner relatively to each
50 other, to be hereinafter described and claimed.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the way in which I have carried it 55 out.

In the said drawings, A represents the breast-beam of a loom over which the cloth *a* as it is woven is drawn to the take-up roll B, the tension of the cloth being that adapted 60 to its weaving condition. Preferably to the breast-beam and on one side thereof are secured the bearings *b b*, in which rest the ends of a horizontal shaft *c* of small diameter, carrying at one end a roll C, provided (see Fig. 65 5) with a cover *d* of metal, having a roughened or serrated outer surface, over and in contact with which passes the cloth *a* as it is guided down over the breast-beam, (see arrow 8,) the motion of the cloth causing the shaft 70 *c* to revolve in the direction of the arrow 9. The other end of the shaft *c* carries a worm-gear *e*, which engages with a pinion *h* on a horizontal stud *i* at right angles to the shaft *c*, the pinion making one revolution in the 75 direction of the arrow 10, while the serrated roll C revolves sixteen times. On the stud *i*, inside the pinion *h*, is a bent arm or finger *k*, which moves in common with and at the same rate of speed as the pinion *h*. 80

D is a horizontal dial-wheel free to revolve on a vertical stud *l*, the under side of the dial D near its periphery being provided with a series of cogs or pins *m*—for instance, thirty— 85 which project down vertically therefrom, the path of the pins being tangent to the path described by the outer end of the revolving finger *k*, whereby one revolution of the pinion (and finger simultaneous therewith) effects a partial revolution of the dial-wheel D 90 equal to the distance between two contiguous pins. The upper side of the dial D is divided into as many spaces, Fig. 6, as there are spaces between the pins, and the numerals from “1” to “30” are represented on the up- 95 per side at points located immediately in vertical lines thereover. The outer peripheral edge of the dial-wheel D is provided with a series of notches *p*, corresponding in number to that of the pins *m*, and in the same lines 100 radially with the points at which the numerals “1” to “30” are located, and into these notches is successively pressed the end of an index I on an arm *r*, pivoted to a short stud *s*,

a spring t being employed for creating just sufficient friction to hold the wheel D from being accidentally turned until the force of the actuating-finger overcomes said friction and causes the partial revolution of the dial D, thus bringing a new notch in line with the index I and a new figure indicating the completion of the weaving of an additional yard of cloth, the diameter of the serrated roll C, that of the pinion h , the number of teeth in the latter, and number of pins m on the wheel D being so proportioned as to insure this result.

G is a cover or guard of the form seen in Figs. 1 and 3 for protecting the dial-wheel D and pinion h from dust and from being hit by stray shuttles or by the weaver in passing the same. This cover may be hinged or otherwise secured—for instance, by screws 15—to the breast-beam, a portion of said cover being horizontal and extending over the greater part of the dial D, leaving exposed to view some of its figures and notches p , with the index I resting in the one of the latter whose corresponding numeral represents the exact whole number of yards woven. (See Fig. 2.) This guard G has a vertical portion which extends down in front of the pinion h , which has a hub 16 of sufficient length to project through the guard and has secured thereto a hand or index L, the guard at this point being slightly depressed to form a dial 18 similar to the dial for the seconds-hand of a watch, said dial 18 being graduated into four or more divisions numbered to represent the fractions of a yard

of cloth that is woven and then in the loom, the index L revolving in common with the pinion. I prefer to make the serrated roll of wood with its cylindrical surface covered with metal—such as a strip of tin or brass—with holes punched therein, Fig. 5, and applying said cover with the sharp edges of the punched holes outside, as when the roll is entirely of wood with pins or brads driven therein it is quite liable to split.

The construction of my measuring device is extremely simple and it may be applied to either side of the breast-beam to adapt it for a right or left hand loom, or it may be disconnected from a loom for measuring any woven or flexible fabric already made by simply passing the material in contact therewith.

I claim—

In combination, the wheel D, with its pins m , notches p , index I, graduations, and dial-figures, the pinion h , with its finger k and index L, the shaft c , with its serrated roll C and worm e , and the guard G cut away to expose to view the index I and the numeral on the dial of the wheel D expressing the whole number of yards woven, said guard having, also, a dial 18, graduations, and figures expressing the fractional portion of a yard, as and for the purpose set forth.

Witness my hand this 30th day of January, 1892.

LLEWELLYN HENRY HUNT00N.

In presence of—

CLARK G. BOVEE,

WARREN G. SAWYER.