L. O. HAYWORTH.

GRAIN REGISTER.

No. 62,845. Patented Mar. 12, 1867.

Fig. 1.

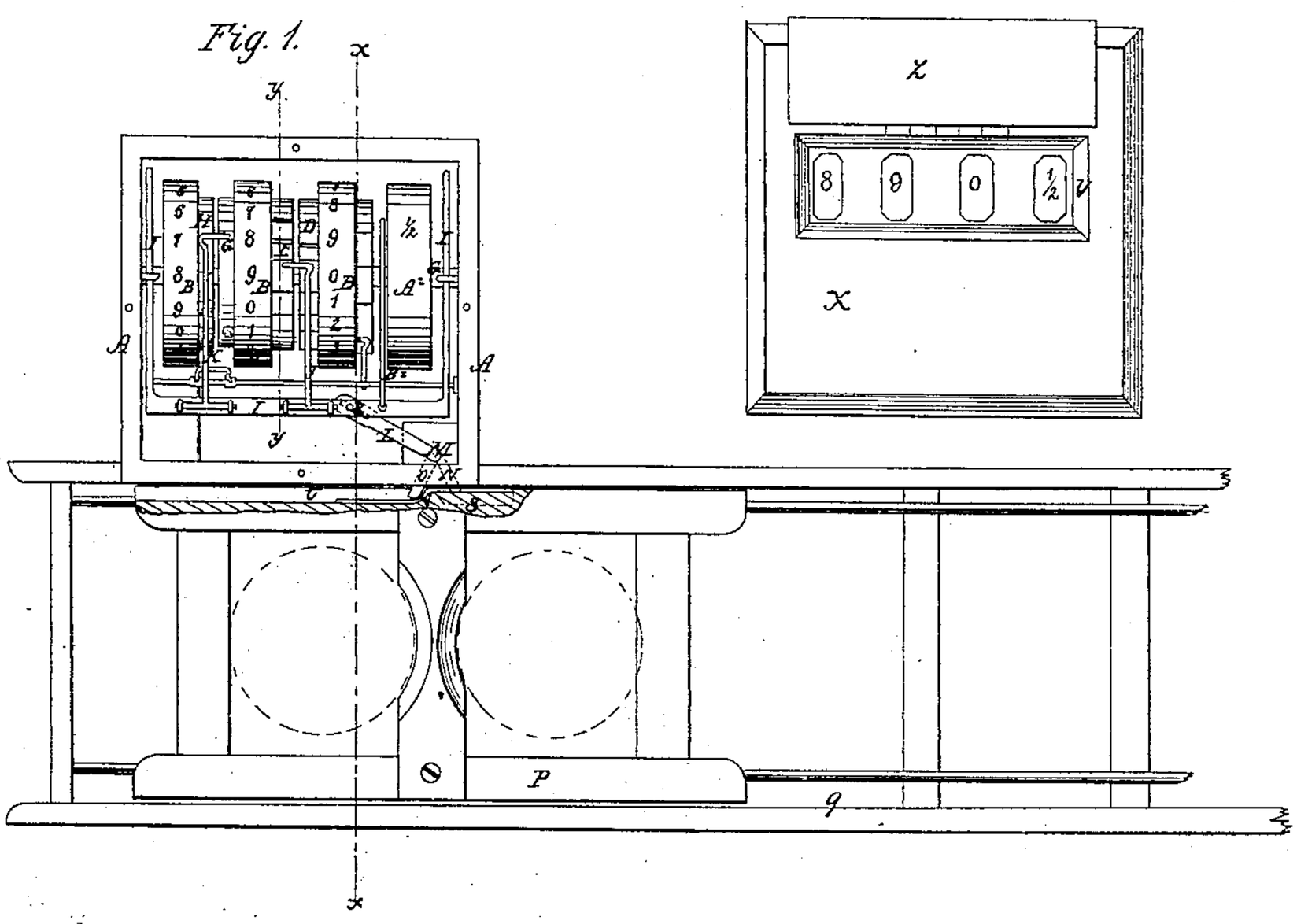


Fig. 2.

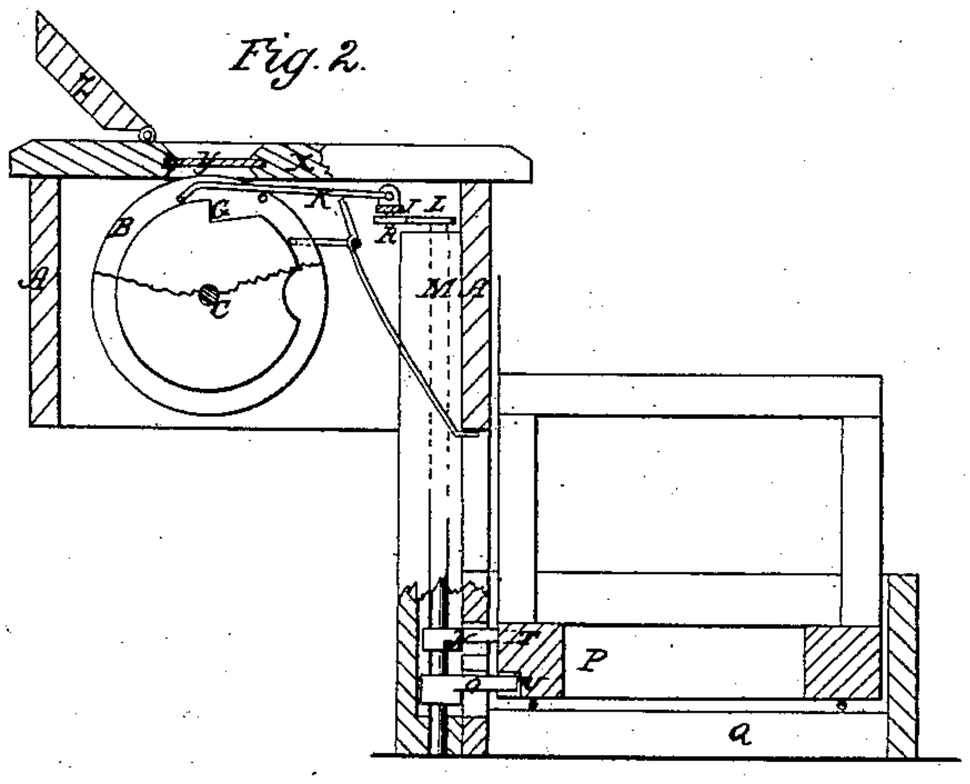
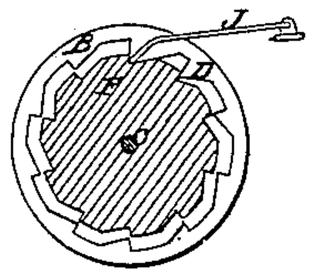


Fig. 3.



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LEE O. HAYWORTH, OF NEW CUMBERLAND, INDIANA.

Letters Patent No. 62,845, *dated March* 12, 1867; *antedated February* 28, 1867.

IMPROVEMENT IN GRAIN REGISTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, L. O. HAYWORTH, of New Cumberland, in the county of Grant, and State of Indiana, have invented a new and "Improved Grain-Measuring Implement or Device;" and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a measuring device or implement, especially intended for use in connection with the measuring of grain, but can be used for other and various articles; and it consists in a novel arrangement of circular disks or wheels, placed in a line with each other, all of which are similarly numbered from "0 to 9," inclusive, and are so connected together that when properly operated, and the first and right-hand disk of the series has completed a revolution, the second or disk next adjoining will be revolved or turned one division or graduation, and so on each time the first wheel completes a revolution, until, the second wheel having made a complete revolution, the third, or wheel next adjoining and to the left of the second, will then be revolved one division in conjunction therewith, and so on until, the third wheel having thus made a complete revolution, the next and fourth wheel will then be revolved one division, and so on for any number or series of wheels, according to the numerical extent which it is desired the measuring device shall have.

In accompanying plate of drawings, my improved measuring implement or device for grain, etc., is illustrated—

Figure 1 being a plan or top view of the implement.

Figure 2, a transverse vertical section, taken in the plane of the line *x x*, fig. 1; and

Figure 3, a transverse section in detail and in the plane of the line *y y*, fig. 1.

Similar letters of reference indicate like parts.

A, in the drawings, represents the box or casing for the operating parts, and numbered disks or wheels, B B, of the measuring device. The wheels B are of the same diameter, and are placed upon a common centre-shaft, C, that at each end is fixed in the ends of the box A, and the periphery of each wheel is numbered from "0 to 9," inclusive, the several numbers of each wheel being placed at equal distances apart, and extending entirely around their respective peripheries. The first or right-hand wheel, B, of the series of wheels B, has upon its face or side, opposite to the next or second wheel, a raised ratchet or toothed edge or centre piece, D, the number of teeth corresponding to the number of figures upon the wheel periphery, with that tooth of the series between the numbers 9 and 0 cut considerably deeper than the other teeth. To the end or side of the second wheel, toward the ratchet-face of the first wheel, a raised ratchet or toothed edge or centre piece, F, is formed, having a number of teeth corresponding to the number of figures upon its periphery, which raised centre piece is less in diameter than that of the first wheel, and of such a diameter that the depth of its teeth is similar to that of the deepest tooth of the first wheel-ratchet, but the extreme diameter of such teeth less than the inner diameter of the ratchet D of the first wheel. Upon the end of the second wheel, toward the third wheel, a raised centre piece is formed that at a point, G, between the figures 9 and 0 of such wheel, is notched to a depth corresponding to the depth of the teeth H upon the adjoining face or side of the third wheel, forming a raised ratchet edge thereto, the number of teeth composing which corresponds to the number of figures marked upon such wheel. I, a sliding frame, arranged upon the interior of the box A at its upper portion, so as to move in a horizontal plane, and toward and away from the series of numbered wheels or disks B, arranged in such box, as above explained, which sliding frame carries two swinging pawls, J and K, one of which, J, rests upon the toothed ratchet of the first wheel of the series, and engaging with its teeth, and the other upon the notched edge of the second wheel, as plainly shown in fig. 1 of the drawings; both pawls at their ends, which bear upon the wheels B, as explained, being sufficiently wide to extend across and embrace the ratchet of the wheels next adjoining. L, a slotted arm, upon the upper end of a vertical shaft or spindle, M, extending down through the box, with two arms, N and O, placed upon its lower end at an angle to each other, and in line with the travel of the carriage P, upon the guide-frame or way Q therefor, on which carriage the grain is carried or transported from the machine in which it is thrashed to be delivered to any other suitable place. The slotted arm L is engaged with a fixed pin or stud, R, of the under side of the sliding frame of the wheel-box. The side bar S of the grain-carriage P, which bears against the side of its guide frame, from which the angular arms of the ver-

tical shaft M project, has grooves, T and U, made in it, by means of which, as the carriage is moved forward and backward in the frame Q; the angular arms N are struck by their respective ends, V, and thus made, through the connection of their common shaft M with the sliding frame carrying the pawls J and K, to so turn such shaft as to cause it to move the said sliding frame toward and away from the series of numbered wheels; the pawls, as the carriage moves forward, revolving such wheels of the series with the teeth of which they may be interlocked, when, the frame then moving backward, the pawls are again brought in position for again revolving the wheels as before, and so on as long as the said sliding frame is operated as explained; it being here remarked that the length of movement of the sliding frame should be only sufficient to revolve the wheel or wheels according to the number of the series its pawls are engaged with, each time it moves forward through a space equal to one of the divisions or graduations of the wheels. If the several wheels be first so adjusted in position that the zero figure of all the wheels will be in the same line with each other, and toward the upper end of the wheel-box, and the sliding frame be then moved forward and backward by running the carriage forward and backward upon its guide-frame, the first or right-hand wheel of the series (the figures on which represent the "units") will be first intermittently rotated, bringing each figure of its series in turn in line with the zeros of the other wheels, until its figure 9 having been brought into such position, the pawl by which said wheel is turned, upon the next forward movement of the sliding frame, carries not only the first or "unit" wheel around with it, but also the second wheel, or that the figures of which represent the "tens," thereby bringing the one of such wheel into line, while the unit wheel then standing at 0, the number 10 is shown, that, as is obvious, is the exact number of times which the carriage has been moved forward; this movement of the second or "ten" wheel being secured or produced, from the fact that the increased depth of the tooth of the unit-wheel, between its figures 9 and 0, allows the pawl to fall sufficiently far to become engaged with the tooth of the "ten" or second wheel, as is obvious without further explanation. If the movement be still continued as before, the unit wheel will be again revolved by itself until its figure 9 having been brought into the same relative position with the upper figure of the other wheels, the second wheel is then again revolved in conjunction with it, and so on until the second wheel having been revolved, until its figure 9 is uppermost, the third wheel then revolves forward in conjunction with it, as it is next time revolved, thus bringing the figure 1 in line, as is obvious without any further explanation; the revolution of the third wheel, in conjunction with the movement of the second, being accomplished by the falling of the pawl K, owing to the notch in the second wheel, into position to engage with the teeth of the third or "hundredth" wheel, and thus carry it around.

From the above description it is plainly apparent that by means of my improved register, a complete record of the forward and backward movement of the grain-carriage can be had, thus enabling the quantity of grain carried upon such carriage, if uniform measures are used for it, to be exactly and accurately computed at any time desired, by simply reading off the number indicated upon the several wheels of the register from left to right. In order to render the reading of the numbered wheels or disks more easy, I use, upon the box on which they are arranged, a lid or cover, X, having a glass face, Y, at a suitable point, to expose the proper figures of the numbered wheels or disks to view, a cover or lid, Z, being provided for this glass face to protect it from injury. In connection with the wheels B, hereinabove described, a wheel, A^2, is arranged upon their common centre shaft G, on which the figures ½ are marked; this wheel being used to indicate the half bushels of grain, and is revolved through the arm or rod B^2, connecting it with the sliding frame I.

I claim as new, and desire to secure by Letters Patent—

The combination of the wheel B B B with ratchet centre pieces of varying diameters and teeth, the wheel A^2, sliding frame I, swinging pawls J K, rod B^2, slotted arm L, and arms N O, operating with the grooved side bar S of the carriage P, substantially as described for the purpose specified.

The above specification of my invention signed by me this day of 1865.

LEE O. HAYWORTH.

Witnesses:

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