

(No Model.)

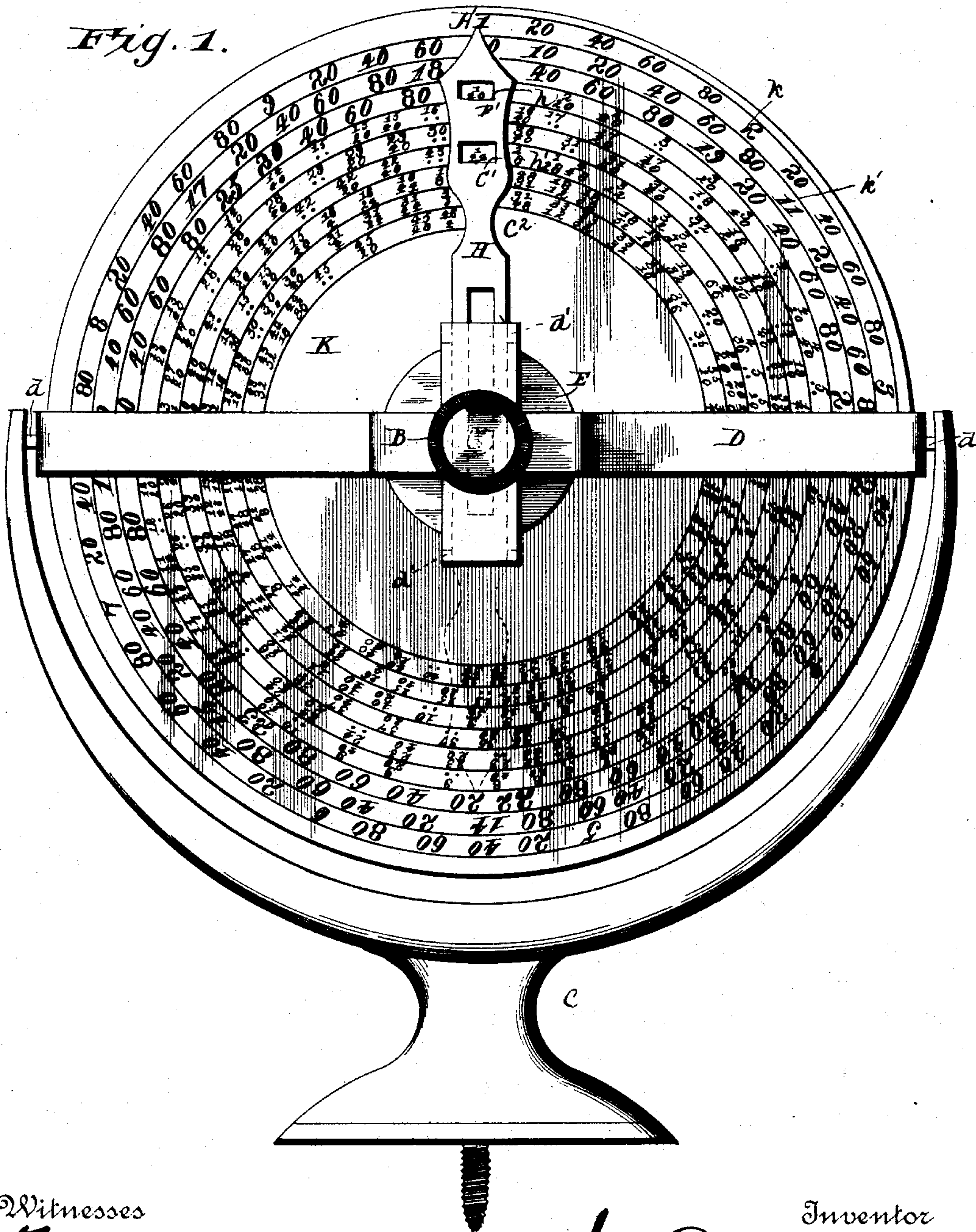
2 Sheets—Sheet 1.

J. BARKER.  
GRAIN RULE.

No. 414,365.

Patented Nov. 5, 1889.

Fig. 1.



Witnesses

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*St. F. Riley*

Inventor

*Jos. Barker*

By his Attorneys

*Chas. H. Snow & Co.*



(No Model.)

2 Sheets—Sheet 2.

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*Fig. 2.*

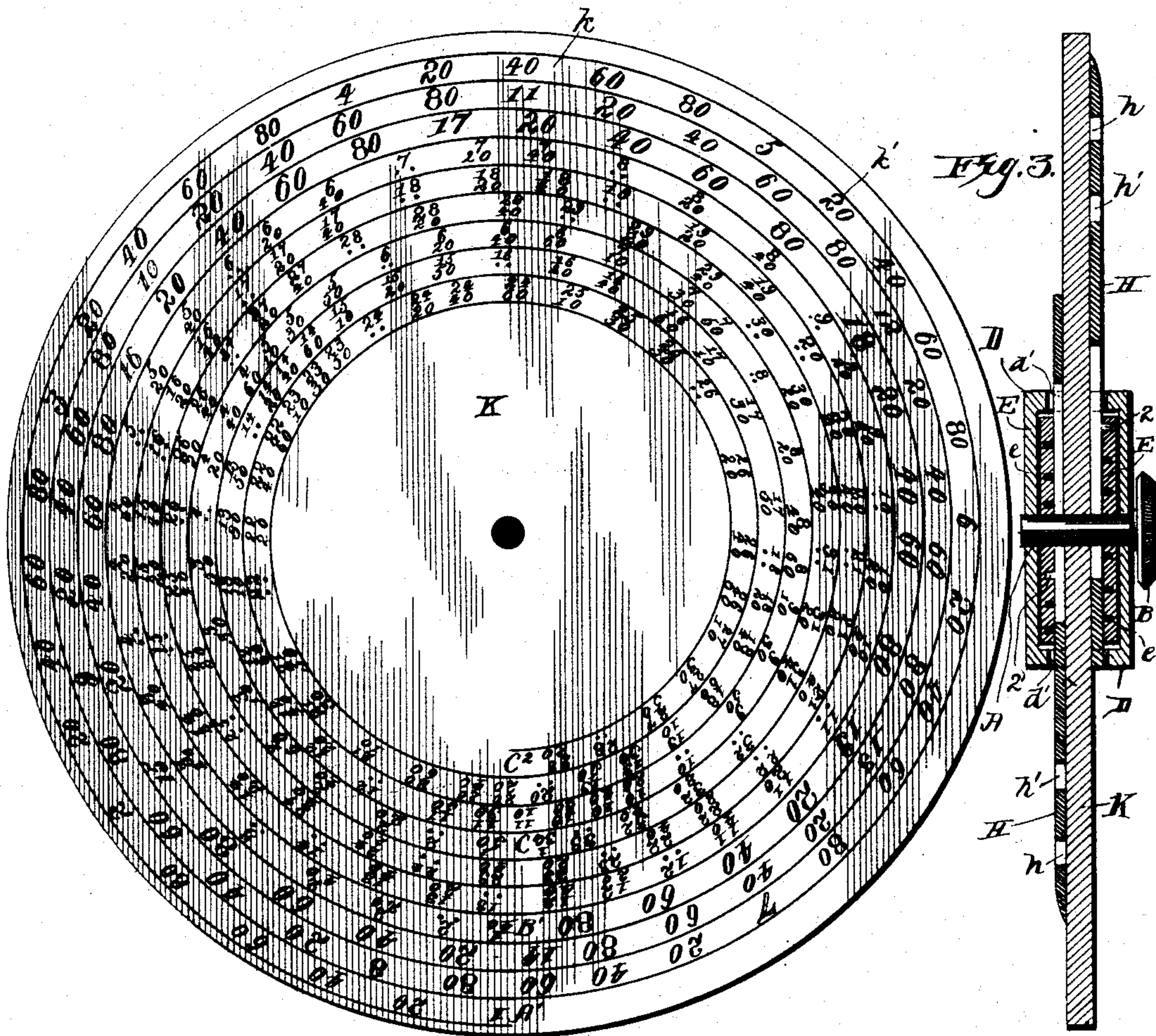
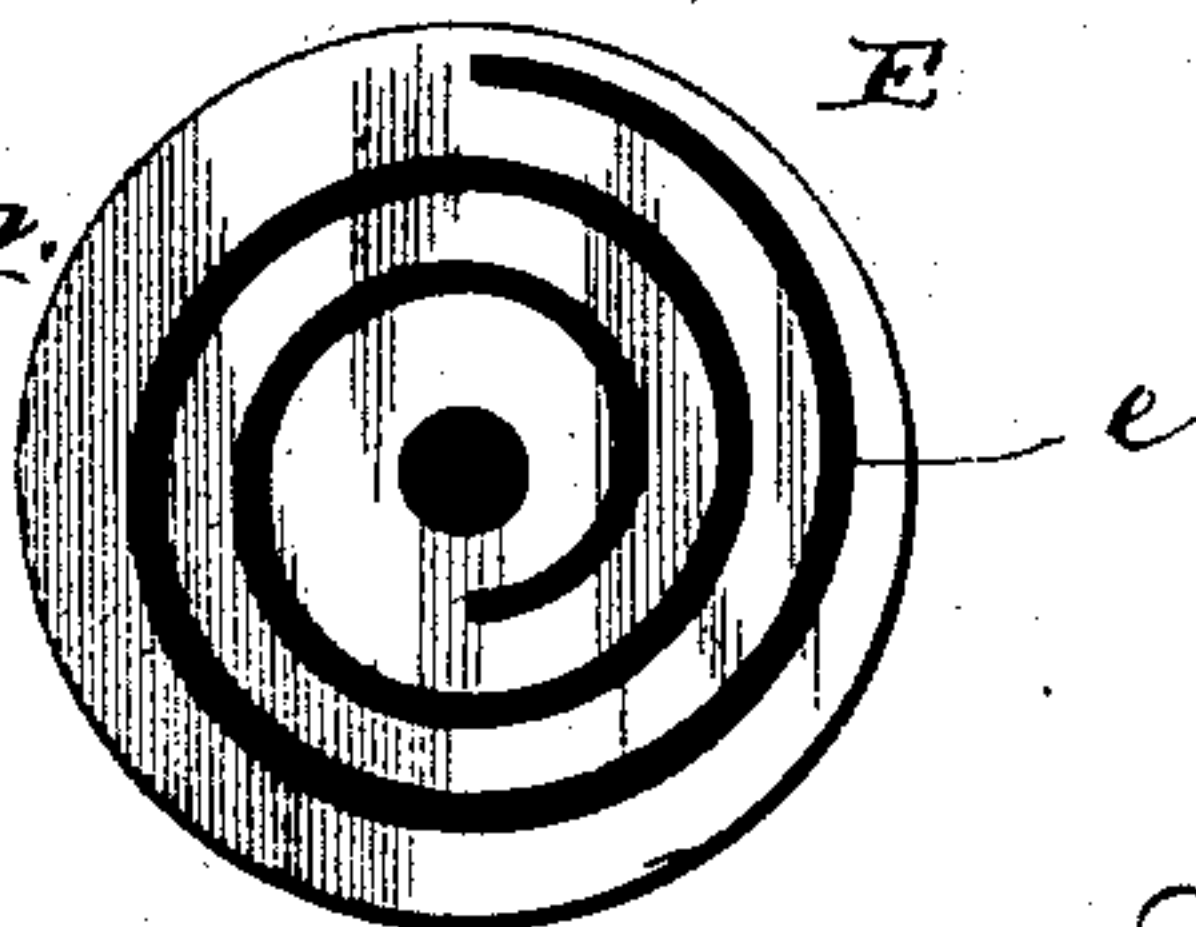


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH BARKER, OF CARSON CITY, NEVADA.

## GRAIN-RULE.

SPECIFICATION forming part of Letters Patent No. 414,365, dated November 5, 1889.

Application filed June 24, 1887. Serial No. 242,406. (No model.)

### *To all whom it may concern:*

Be it known that I, JOSEPH BARKER, a citizen of the United States, residing at Carson City, in the county of Ormsby and State of Nevada, have invented new and useful Improvements in Grain-Rules, of which the following is a specification.

The invention relates to improvements in grain-rules; and it consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

The object of the invention is to provide a convenient and simple form of grain-rule adapted for the use of dealers who buy and sell grain in wagon-load lots.

In the drawings, Figure 1 is a front elevation of my improved grain-rule. Fig. 2 is a similar view of the reverse side. Fig. 3 is a transverse vertical sectional view, and Fig. 4 is a side elevation of one of the grooved disks.

K indicates a circular plate constructed of suitable material, and embraced by a metallic strip or casing D, which has trunnions *d*, that are pivotally mounted in the circular arms of a base-rest C. The metallic strip or casing D, which embraces the said disk K, passes around both sides thereof, and a shaft A passes through the central portion, upon which a hand or index H is mounted, and is adapted to be moved vertically by a milled nut B, secured to one end of the shaft, the index-hand being guided in its vertical movements and prevented rotating by projections *d'*, extending inward from the casing D. The upper end of the index or hand H is provided with two apertures *h h'*, and, as indicated in the drawings, are adapted to present the measure of wheat or corn.

The circular plate K is divided into a series of spirally-arranged spaces *k*, which bear tables to adapt the device for the measurement of bushels or pounds with an increase from tens to hundreds in the pounds-table. The reverse side of said plate K to that shown in Fig. 1 has its spiral lines arranged in a reverse direction for a purpose which will be hereinafter fully described. It is customary in weighing grain on grain-scales to brake on

ten pounds, and these tables which the plate K bears agree with the weights thus arranged, the numeral-table, which is marked upon the outer three spaces, increasing by twenties for convenience. The figures of the tables are stamped or otherwise marked on the plate K, and as heretofore described the spaces for the said tables are formed by drawing a space-line *k'* a predetermined number of times around the said plate, but, as shown, preferably, to make nine spaces. The three outer spaces bear the numeral-table of pounds, which commences at the top at A' to the right of the index, as seen in Fig. 1, and at the bottom of the plate K, on Fig. 2, and spacing three times around the plate to B'. The next three inner lines of spaces, commencing at B' and running around the plate to C', contain the wheat-table, and give the number of pounds indicated by the end of the index or hand H reduced to bushels and pounds of wheat or other grain, the corresponding pounds and bushel appearing on the same radial line, the former at the point or top of the index H and the latter at the apertures *h h'*. The next three inner lines of spacing, commencing at C' and running three times around the plate to C<sup>2</sup>, contain a table for some other grain—such as ear-corn—and also correspond with the outer lines of numerals.

The central or enlarged portion of the casing D is hollowed out and incases a disk E, which is provided with a spiral groove, which runs around three times in the central portion of the said circular disk E and operates in connection with the index or hand H, which is provided with a small pin 2, engaging with the spiral groove thus formed in the disk E, which is incased in the central portion of the casing D. When the shaft A is revolved by means of the nut B, the grooved disk E, keyed to said shaft A, engages the pins and causes the index on one side of the plate K to move toward the center thereof, while the indices on the opposite side of the plate K are moved toward the rim. This central spiral groove *e* is gaged to correspond with the spiral spaces *k* on the circular plate K, and if the circular plate should be turned to the left the upper point of the index would follow



the spiral spaces  $k$  until the plate would be revolved nearly three times around.

The device is operated by turning the circular plate K, Fig. 1, to the right or left, bringing the number of pounds to be reduced to bushels directly above the point of the index H. The number of pounds reduced to bushels will be given in the apertures of the index or hand H. The circular plate revolves to the right or left on its axis, which passes through the casing D and is turned by the milled nut B, which is attached to the axis. A numeral-table increasing by tens or by twenties, as shown, and two grain-tables, are marked upon the reverse side of the circular plate, as hereinbefore set forth; but in this instance the spiral line commences on the bottom of the plate, as will be seen in Fig. 2. When the tables on the opposite side are used, the circular plate is revolved laterally on its axis, bringing the opposite tables to the front.

Tables of different cereals are designated to be marked in the spiral spaces, as described, the number of pounds and the reductions to bushels and pounds being on the same radial line, the former appearing at the point or end of the hand H and the latter at the apertures, and the said spiral spaces may be increased to permit any number of grain-tables to be employed, there, of course, being a corresponding number of apertures in the hand or pointer H. When the index is properly mounted, its end is at A', the starting-point of the first series of spiral spaces  $k$ , and the apertures  $h$  and  $h'$  will be at B' and C', respectively, the starting-points of the other series of spiral spaces, while at the opposite side of the plate  $k$  the end of the pointer will be at B', the end of the first series of spiral spaces, and as the plate  $k$  revolves the point of the index will traverse the first of a series of spiral spaces—viz., those between A' and B'—and the apertures  $h$  and  $h'$  will traverse the inner series of spiral spaces, whereby, when the index, by the rotation of the plate K, is brought to one of the numerals, the apertures  $h$  and  $h'$  will expose the corresponding characters of the inner tables and show at a glance the number of pounds indicated by the point of the index or hand H reduced to bushels and pounds.

The lower parts of the device are designed

to be made of metal and fastened down to a table or desk by means of a wood-screw  $b$ , projecting from the base.

From the foregoing description and the accompanying drawings the construction, operation, and advantages of the invention will readily be understood.

Having thus described my invention, I claim—

1. In a grain-rule, the combination of the casing having trunnions at its ends and adapted to be rotated, the reversible circular plate mounted in the frame and having its faces divided into series of spiral spaces designed to bear tables, and the vertically-movable indexes arranged upon each side of the plate and moving in opposite directions, substantially as described.

2. The combination of the base-rest, the casing trunnioned therein, the plate provided with a series of spiral spaces, the shaft forming an axis for the plate, the index provided with a projection, and the spirally-grooved disk engaging said projection, whereby the index is moved vertically, substantially as described.

3. The combination of the base-rest, the casing trunnioned therein, the circular reversible plate provided on its faces with spirally-arranged spaces, the vertically-movable indexes arranged upon each side of the disk, and mechanism for causing one of said indexes to be moved toward the center of the plate while the other is moved toward the rim, substantially as described.

4. In a grain-rule, the combination of the pivotally-mounted frame having the projections  $d'$ , the plate  $k$ , provided with series of spiral spaces, the indexes arranged upon each side of the plate and moving in opposite directions between the projections  $d'$  and provided with apertures, the spirally-grooved disks arranged within the casing upon each side of the plate and engaging the indexes, and the shaft adapted to rotate the spirally-grooved disks, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOSEPH BARKER.

Witnesses:

ABRAM COHN,  
W. H. CRISLER.