

G. W. ATKINS.

Grain Tally.

No. 20,186.

Patented May 11, 1858.

Fig. 1,

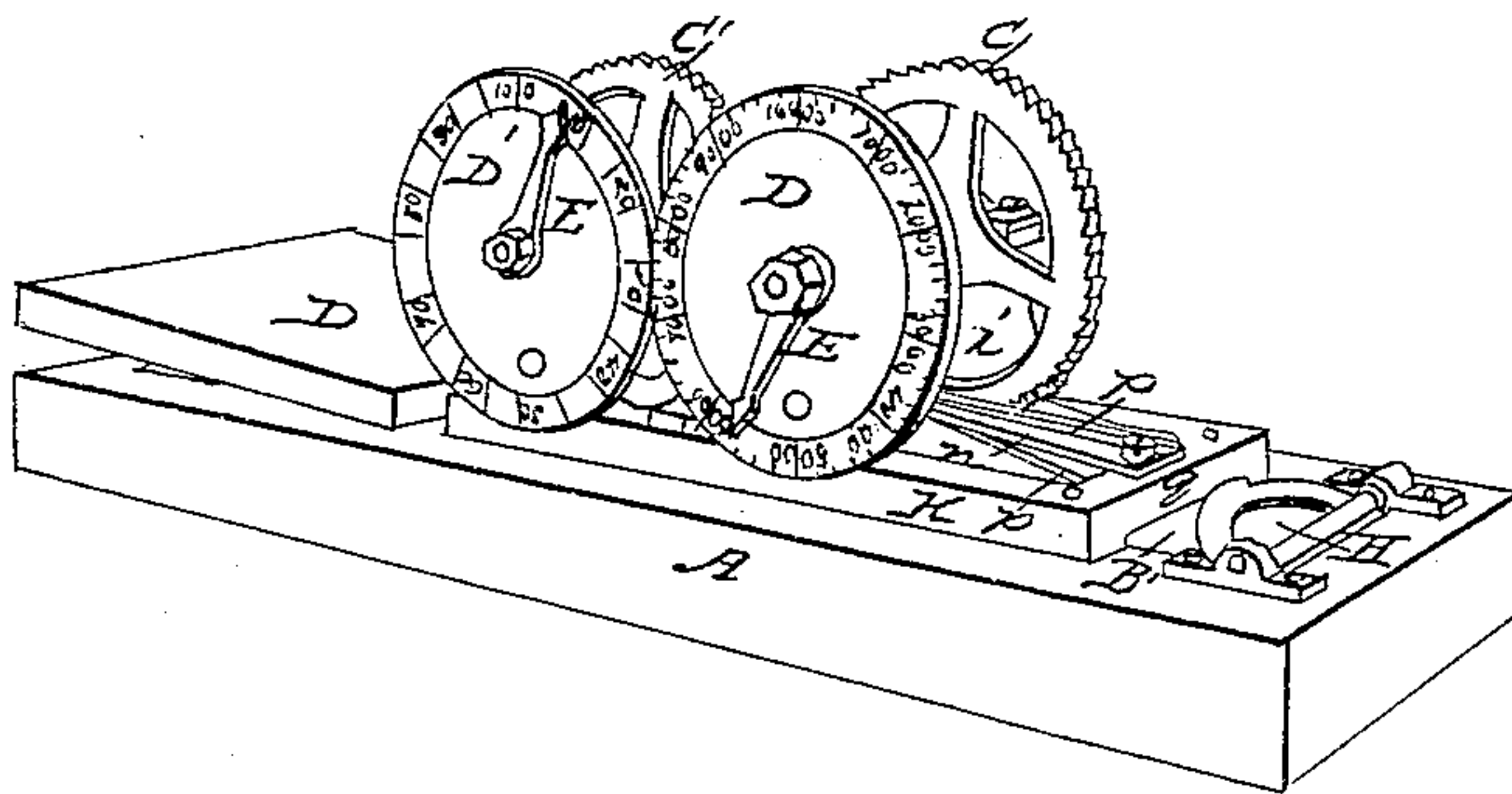


Fig. 2,

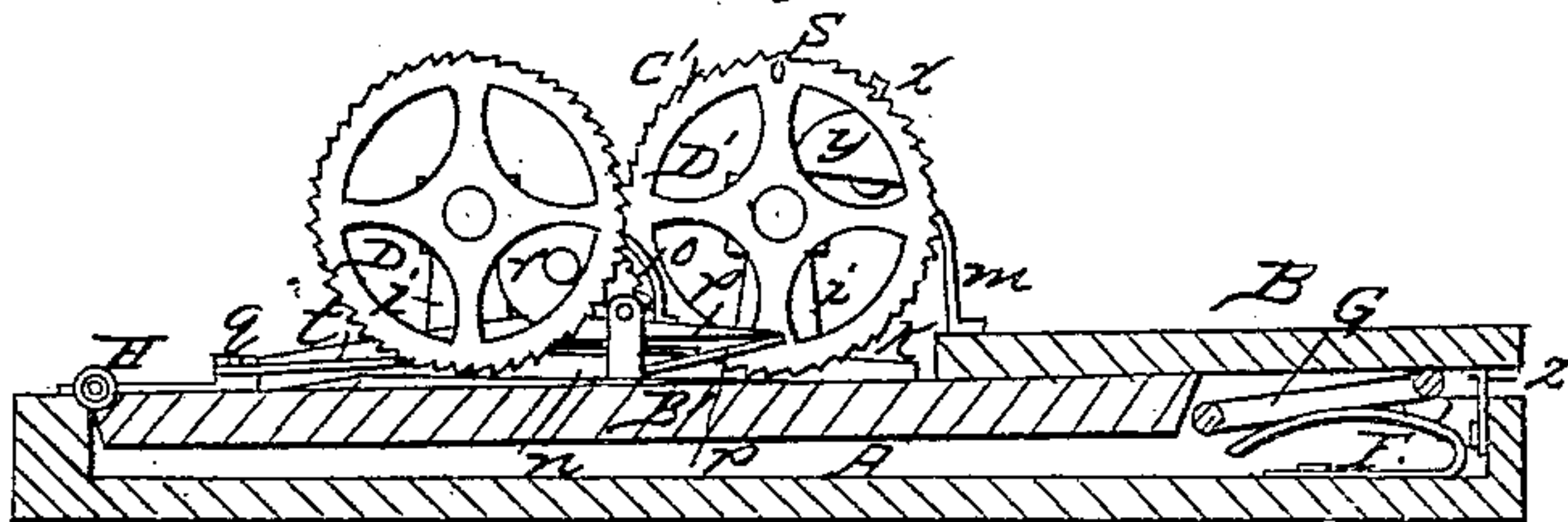
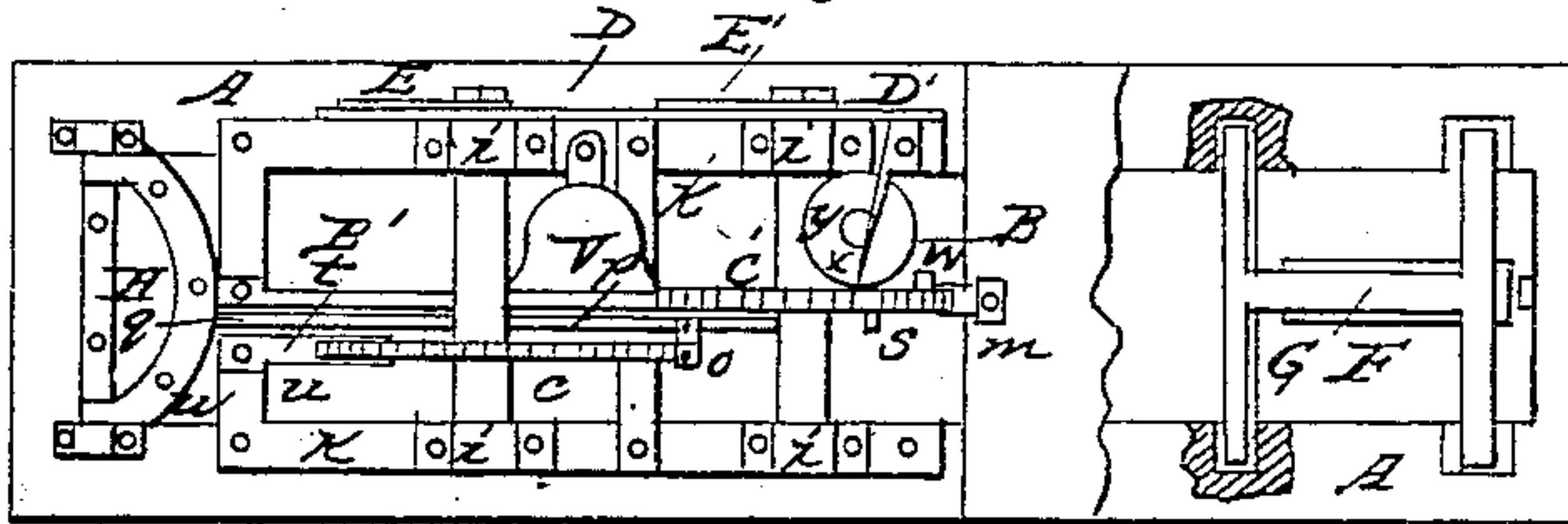


Fig. 3,



Witnesses:  
*Prof. Munroe*  
*Moody*

Inventor:  
*G. W. Atkins*

# UNITED STATES PATENT OFFICE.

GEO. W. ATKINS, OF MILTON, DELAWARE.

## SELF-REGULATING GRAIN-MEASURER.

Specification of Letters Patent No. 20,186, dated May 11, 1858.

*To all whom it may concern:*

Be it known that I, GEORGE W. ATKINS, of Milton, in the county of Sussex and State of Delaware, have invented a new and Improved Self-Registering Tally or Apparatus for Registering the Measures of Grain in Loading and Unloading Ships, Wagons, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a perspective view; Fig. 2, a longitudinal vertical section; and Fig. 3, a plan view of the same with a part of the platform removed, like letters in the different figures indicating the same parts.

The nature of my invention consists in so arranging and combining together a spring platform and a pair of ratchet wheels with pawls and springs attached, that when the usual measure of grain is placed upon the platform it shall cause the latter to descend a short distance moving a pawl, which is attached thereto, over one of the notches in its ratchet wheel, and as the said measure is lifted off, the said platform shall spring upwardly so as to cause the said pawl to force around the ratchet wheel the length of the notch which it has just previously passed over, and at the same time indicate the movement audibly by a bell, and also visibly by an index hand; and so that the said ratchet wheel, on the completion of each full rotation on its axis, shall let go a spring lever, which is connected by a pawl with a second ratchet wheel, so as to cause it to move the latter around on its axis the length of one of its notches, causing it to indicate the movement, both audibly and visibly—the axis of each ratchet wheel carrying the point of an index hand around a dial plate which is placed opposite to the ratchet wheel and has each notch of its ratchet wheel indicated thereon, and numbered—say the first dial from 1 to 100; the second from 100, to 10,000; the whole apparatus forming a self-registering tally, for the use of shippers and dealers in grain generally.

Referring to the drawings—A, is the box or case, supporting the whole; B, the platform, C, and C' the two ratchet wheels; D and D' the dial plates; E and E' the index

hands; F, a spring for supporting a double-cross lever, G, upon which the measure-end of the platform (B) rests so that it cannot twist from the weight of the measure of grain; and H, a hinge-joint which connects the platform, by an extension board, B', to the rear end of the box so as to allow the said platform to move up and down within limits controlled by a sliding link, z, attached to the platform, and a fixed stud in the box, as seen in Fig. 2.

The ratchet wheels are fast on their axes, and are supported in bearings, *i—i*, which rise upon a metal frame, K, fixed to the upper side of the box or case (A). The lever (G) has its fulcrum, *l—l*, let into the sides of the box, like journals, and is supported by the spring (F) which is made sufficiently stiff to raise the platform (B) suddenly up from the box so as to operate the ratchet wheels and indicators when the measure of grain is lifted off, but yet yielding enough to render certain the descent of the platform whenever the measure of grain is placed upon the latter. The driving pawl *m*, of the ratchet wheel (C') is a spring fixed to the platform so as to move with it—its ratchet wheel being held stationary, while the said pawl drags over a notch, by means of a horizontal spring-pawl, *n*, which is fixed to the rear end of the frame (K). The operating pawl, *o*, of the ratchet wheel (C) is also a spring, and is fixed to a lever, *p*, which has its fulcrum in the same frame (at *q*), and is operated by means of a spring, *r*, beneath the lever (*p*), to force forward the ratchet wheel (C) after the said pawl has been drawn downwardly over a notch and let go, by means of the stud, *s*, in the side of the ratchet wheel (C'), passing over the end of the said lever, (*p*)—the ratchet wheel (C) being held, while the pawl (*o*) is passing over the notch, by means of a horizontal spring-pawl, *t*, which is also attached to the frame, at, *u*. Every time a notch of the ratchet wheel (C') passes the horizontal spring pawl (*n*) it causes the latter to strike a bell, *v*, and thereby audibly to indicate the lifting off of the measure of grain; and every periodical movement of the ratchet wheel (C) is also indicated in the same manner, by means of a stud, *w*, in the opposite side of the ratchet wheel (C'), which, after depressing, lets go a spring, *x*, which supports or strikes another differently



toned bell, *y*, causing it to ring—thus audibly indicating a full rotation of the ratchet wheel (*C'*) and a single notch movement of the ratchet wheel (*C*), or the hundredth measure of grain; while at the same time the hands (*E* and *E'*) visibly indicate both the number of single measures and the number of hundreds of measures passed off of the platform—even up to 10,000.

10 For ships' purposes I generally make the apparatus from 4 to 5 feet long, and 12 or 14 inches wide, the platform (*B*) being about 12 or 14 inches wide and 18 or 20 inches long.

15 Operation: In unloading grain from a vessel the apparatus is adjusted with both its index hands at the highest number of its respective dial plate, and placed across or alongside of the hatchway. As a measure of grain is lifted out through the hatch it is placed upon the platform (*B*), and the moment it is lifted off therefrom, the platform springs upwardly and, by means of the spring pawl (*m*), the ratchet wheel (*C'*) is moved round one notch, the bell (*v*) struck by the spring (*n*), and the point of the hand (*E'*) moved over the space of the ratchet notch on the dial plate (*D'*), thus noting and registering the passage of a measure of grain, which is generally a half bushel. In this manner each single measure only, is indicated; but on the passage of the hundredth measure, the stud (*s*) lets go the end of the lever (*p*), which carries the operating pawl (*o*), and thereby forces around the ratchet wheel (*C*) the length of one notch thereof, which is visibly indicated by the hand (*E*) on the dial plate (*D*), and audibly by the ringing of the bell (*y*), and so on continuously until all the grain is measured out.

The object of audibly indicating the hundreds is to adapt the apparatus to the custom of putting by in bags every hundredth measure for the purpose of weighing, in order to average the weight per bushel of the whole lot of grain; and of audibly indicating the passage of each single measure, that the registering of the same may be known to have been accomplished without

inspecting the dial plate, or watching the operation.

The advantages of this self-registering tally consists in their enabling the dealer to dispense with the employment of a tally-man; and in preventing the disputes and law-suits which arise from the mistakes or neglects of the tally-man, as to the number of bushels of grain in the cargo, because every measure coming out of the vessel must be placed upon the platform, and it cannot be lifted off of the same without registering it, both visibly and audibly.

The apparatus is simple in construction, and being strongly made, it is not liable to get out of order in use; and is therefore perfectly reliable for accuracy at all times.

The noting and registering parts of the apparatus may be covered with a suitable cap, as well to exclude dust and grain, as to prevent them from being altered by any one during use.

What I claim as my invention and desire to secure by Letters Patent is embraced in the following divisions:

1. I claim the arrangement of the platform (*B*) in combination with a box or case (*A*), so that the said platform shall have an up-and-down motion by turning as a lever upon the hinge (*H*), or its equivalent, and being supported by means of the double-cross lever (*G*), and spring (*F*), in such a manner as to yield downwardly under the weight of the measure of grain when it is placed thereon, and spring upwardly on moving the same substantially in the manner and for the purpose set forth and described.

2. I also claim, in combination with the said ratchet wheels, pawls, levers, indexes, and platform, arranged and operating together substantially as described, the two bells (*v* and *y*) or their equivalents, for the purpose of indicating audibly both the single and hundredths of measures of grain registered by the index, as described.

G. W. ATKINS.

Witnesses:

BENJ. MORISON,  
JNO. B. KENNEY.