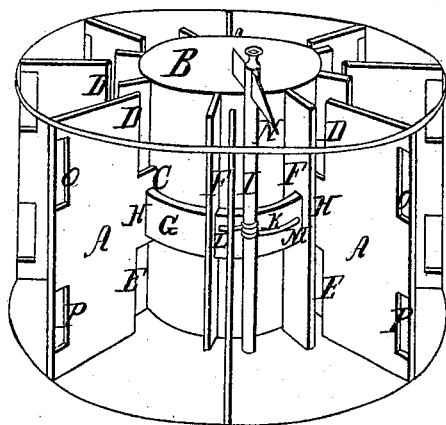


*E. W. Jackson,*  
*Machine Brake.*

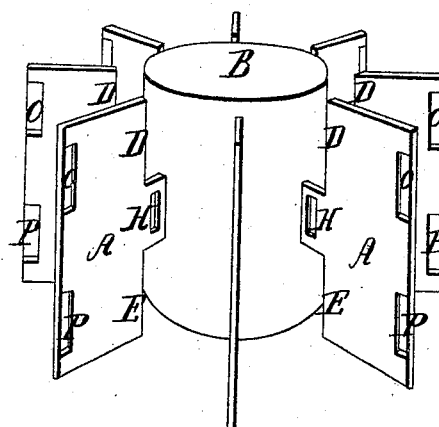
*N<sup>o</sup> 1923.*

*Patented Jan. 5, 1841.*

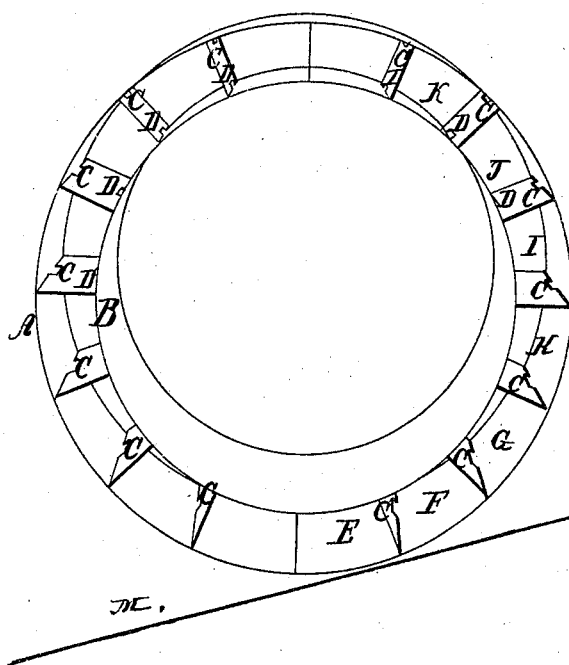
*Fig. 1.*



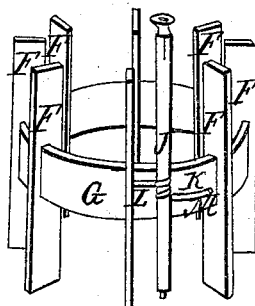
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



# UNITED STATES PATENT OFFICE.

EDWIN W. JACKSON, OF ALBANY, NEW YORK.

## MACHINE FOR GRADUATING THE VELOCITY OF MOVING BODIES.

Specification of Letters Patent No. 1,923, dated January 5, 1841.

*To all whom it may concern:*

Be it known that I, EDWIN W. JACKSON, of the city and county of Albany and State of New York, have invented a new and useful Machine for Graduating the Velocity of Moving Bodies, called "the Graduating Operator;" 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 annexed drawings of the same, making part of this specification, in which—

Figure 1 is a perspective, and sectional view of the machine, the wheel being divested of its end pieces and its outer cylindrical band. The parts marked A are permanent partitions placed at equal distance apart and all of one form and diameter attached at C to the cylinder B, each one having a breach or opening at D and E which are either shut or open according to the situation of the sliding doors, marked F, all being of one form and dimension and at equal distance apart and firmly affixed to the band G, which is suffered to slide backward and forward through each partition at H, and is connected to the revolving axle or rod J, by the cord K, which passes through a hole in the center of the said rod and there fastened. Two or three turns are made around the rod and the ends of the cord firmly secured to the band G, at L and M. To the upper end of the rod is attached the pointer N, which, upon being turned, will force around the band G, with the sliding doors F, either opening or closing the breaches at D and E.

Fig. 2 is a view of the structure of the machinery, when divested of the parts belonging to the index, A being the permanent partitions, B the cylinder to which they are attached, D and E the breaches to be opened or closed by the sliding doors, H the apertures through which the band G slides, O and P apertures in each partition to prevent the quicksilver (or whatever the wheel may be loaded with) from hanging back when it is requisite for the retarding power to be as light as possible.

Fig. 3 is a view of the machinery of the index, F the sliding doors, G the band to which the sliding doors are attached, J the rod or axle to which the cord K is attached, L and M the points in the band where the ends of the cord are fastened.

The following additional drawing, Fig. 4,

of another mode of applying the same principles is introduced, being more fully explanatory of the method, by which a general graduating and regulating power is produced. It differs in form from the mode above described, having no index, but the principle of operation is the same. The partitions are all of one size and form; they lie permanently affixed between two cylinders, the outer one marked A and the inner one B, the loading having a passage only from one receptacle to another through the breaches in each partition C and D. The wheel is here represented as loaded. The receptacles E, F, G, H, I, J, and K, are charged, while those on the opposite side are empty; consequently as the wheel is traversing down an inclined plane (as represented by the line M) it traverses the empty side first and its velocity is governed by the size of the breaches in the partitions which suffers the weight gradually to pass from one receptacle to another.

The variety of forms which can be adopted for the receptacles of the weight in this machine are indefinite. They vary from a hollow sphere to any form capable of retarding the gravitation of the weight within, which may consist of quicksilver, shot, gravel, sand, water, or any other weight capable of passing through the outlets.

The operation of this machine causes uniformity in the velocity of motion and is applicable as a regulator to any purpose requiring moderated or graduated velocity. It is by construction susceptible of increase or diminution of power to meet any contingency and of an indefinite variety of useful applications. The inventor has contemplated the following among many others, viz: As a regulator to the velocity of freight descending by inclined planes either by using two parallel inclined planes one for the train of cars and the other for the graduating wheel both attached to the ends of a chain passed around a stationary pulley at the head of the inclined planes so that as the loaded train descends on one side the graduating wheel ascends on the other side when the load is discharged the graduating wheel descends, drawing up the empty cars, or in vehicles furnished with wheels of the above described construction, or by a connection through the medium of the chain with a stationary wheel at or near the pulley or fulcrum, or any other mode convenient

to the application contemplated. As a stationary power regulating the descent of the merchandise or other weights, a substitute for the wheel and axle in common use. As  
5 a graduator of motion for the admeasurement of time. As a preventive to undue speed in vehicles drawn by restive animals.

What I claim as my invention and which I desire to secure by Letters Patent is—

10 1. The mode of graduating the velocity of moving bodies by means of a changeable weight such as quicksilver, water, sand, shot, &c., contained in receptacles of any given form arranged around or between two con-

centric cylinders or wheels and communicating with each other by apertures in the partitions or divisions thereof through which the changeable weight passes as described. 15

2. I also claim the mode of regulating the velocity of the moving body by means of  
20 valves or shutters which enlarge or diminish the size of the apertures through which the changeable weight passes as described.

EDWIN W. JACKSON.

Witnesses:

WM. P. ELLIOTT,  
E. MAHER.