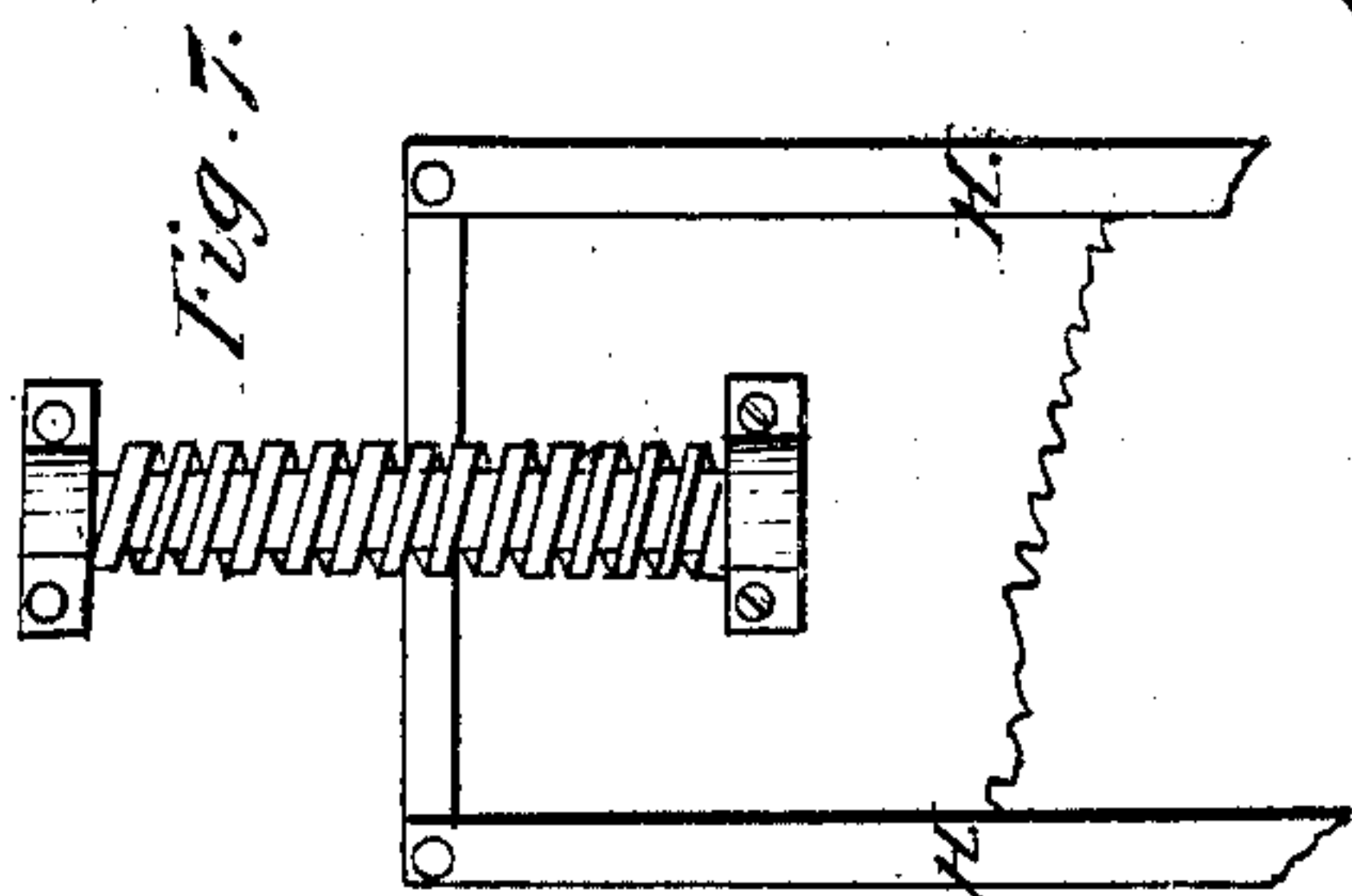




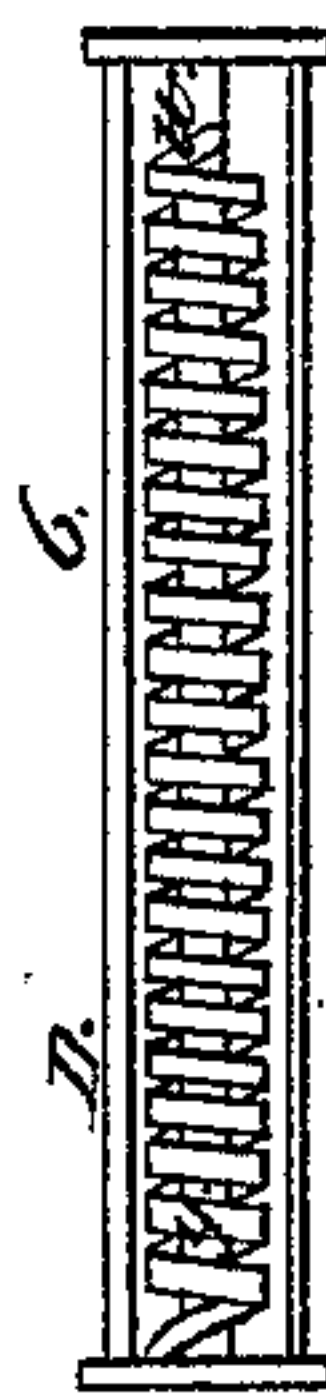
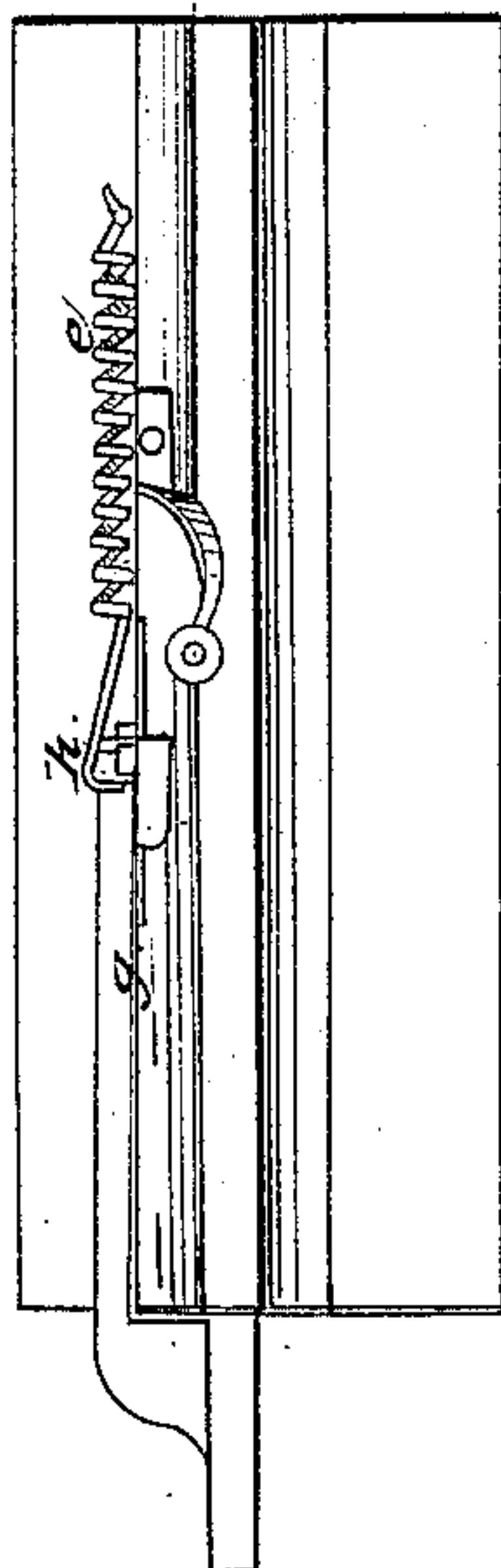
*H. H. Gratz. Sheet 2 of 2 Sheets.*  
*Station Indicator.*

*No 233.*  
*31,237.*

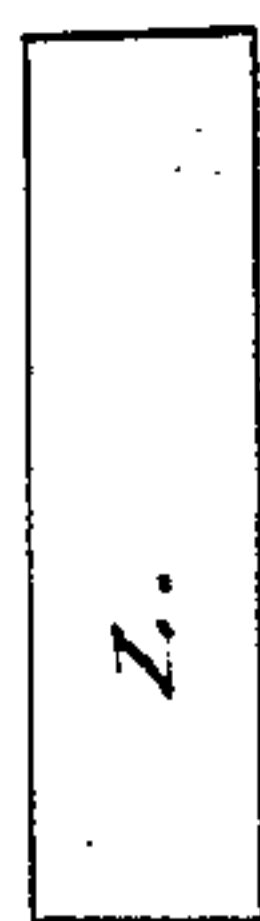
*Patented Jan. 29,*  
*1861.*



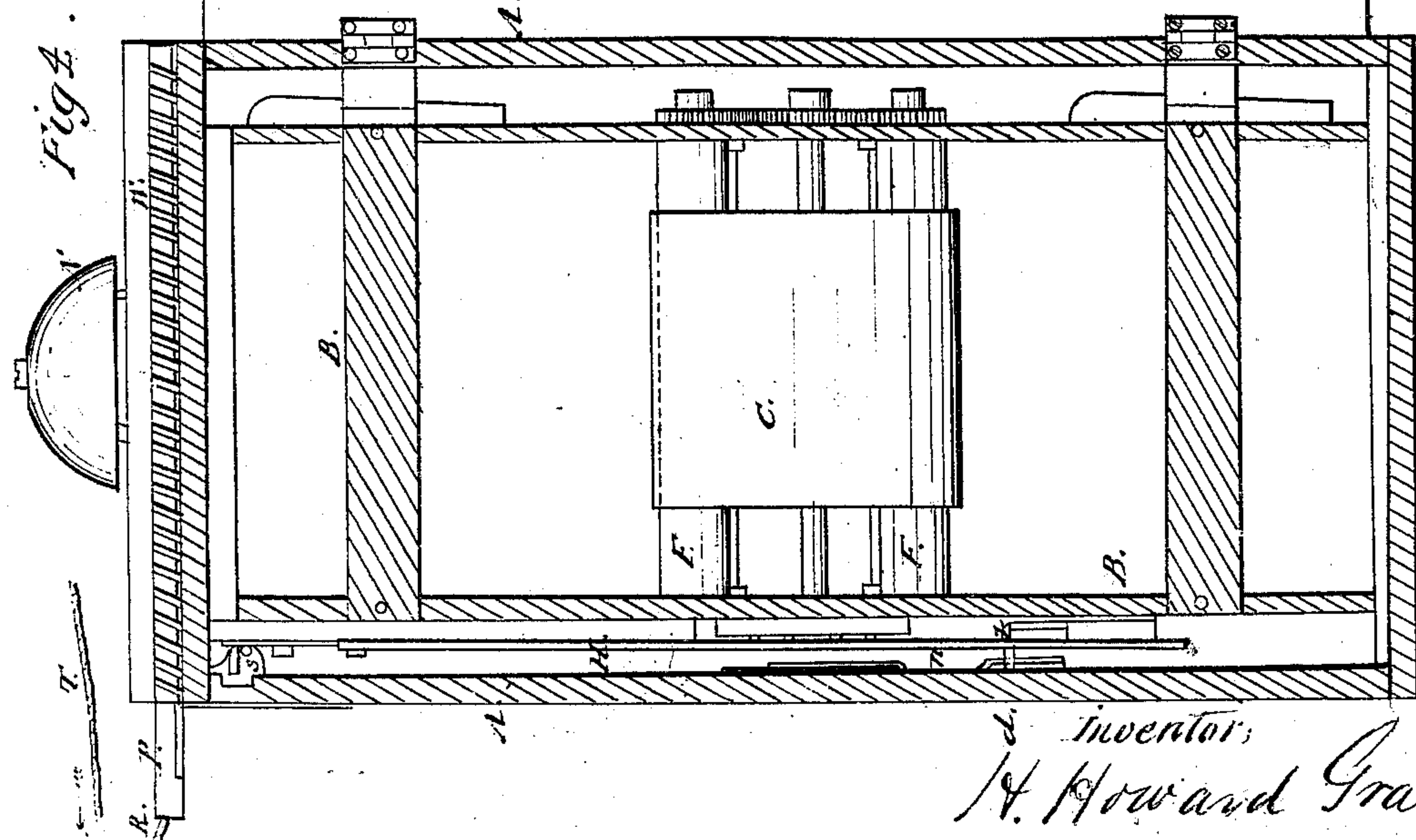
*Fig. 5.*



*Witnesses*  
*Thos. P. Akers*  
*J. H. Alexander*  
*C. M. Alexander*



*Fig. 4.*



*Inventor,*  
*H. Howard Gratz*



# UNITED STATES PATENT OFFICE.

H. HOWARD GRATZ, OF SPRING STATION, KENTUCKY.

MACHINE FOR INDICATING RAILROAD-STATIONS OR STREETS OF CITIES.

Specification of Letters Patent No. 31,237, dated January 29, 1861.

*To all whom it may concern:*

Be it known that I, H. HOWARD GRATZ, of Spring Station, in the county of Woodford and State of Kentucky, have invented certain new and useful Improvements in Advertisers and Indicators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in constructing and arranging the several parts of this machine in the manner hereinafter fully set forth.

In the annexed drawings Figure 1 represents a side view of the frame. Fig. 2 represents a view of another side. Fig. 3 is a vertical cross section. Fig. 4 is a plan view with door of the case open. Figs. 5 and 6 are detached views of different parts to be described.

In the figures A, represents a box or case, which is provided with a door, a portion of which is transparent in order to exhibit through it certain revolving canvas which will be marked in the manner hereinafter described.

B, represents a frame which is secured within the box or case A, as shown in the figures. This frame B, is provided with a series of rollers, D, E, F, F, which have shafts, and suitable bearings in the said frame to enable them to revolve freely and easily.

C, represents the canvas, one end of which is secured to roller (D), while the other end is secured to roller (E). This canvas passes over the rollers, (F, F,) which serve to keep it stretched and in proper position for exhibiting the intelligence printed upon it. One great difficulty attending the winding and unwinding of canvas upon rollers is the slack occasioned by the diminishing size of one roller, and the increasing size of the other. This difficulty I remedy by making one of the rollers in the following way—pass a shaft as in Fig. 6 through a hollow roller and surround the shaft with a coiled spring one end of the spring being secured to the roller and the other to the shaft—the canvas is then attached to the roller and tension being given to the spring the roller revolves sufficiently upon the shaft to take up the slack as the canvas passes from one roller to the other.

M, represents a shaft which passes through the frame B, parallel to the rollers—this shaft is provided upon one end with a gear wheel *c*, and upon the other with a disk J, upon one face of which are secured a series of pins *x, x, x, x*, as shown in Fig. 1. The gear wheel *c* drives the pinions *a*, and *b*,—the former of these pinions being secured to one end of the shaft of roller D, and the latter being secured to the end of roller E.

G, represents a slide which is arranged at one side of the frame B, its edges being made to work in proper dovetailed grooves cut in guides secured to the side of the frame.

H, H, represent two bars, which are provided with short racks near their centers as shown in Fig. 1. The object of these racks is to catch the pins of the disk J, and thus cause said disk to revolve. The racks are upon opposite sides of the disk for the purpose of reversing the motion of the said disk when desirable.

*d* represents a small coiled spring for drawing the two bars H, H, together.

K, represents the bolt of an ordinary lock. This bolt is connected to the two arms H, H, by means of two connecting bars or rods *i, l*, which are pivoted to the bolt and to the bars (H). The rods *i*, and *l*, are connected together by a small spring *m* as shown Fig. 1. It will readily be seen that when the bolt K, is pushed to one side only one rack is in gear with the pins on the disk J, and that the bar or rod which connects the rack bar with the bolt stands in such a position against the teeth upon the disk that said disk cannot revolve backward. When the slide G, is drawn up, the rack bar in gear with the disk J, catches into the pins *x, x, x*, and causes said disk to revolve or partially revolve when it is stationed by the rod above spoken of until the rack returns to its normal position. When it is desired to change the direction of the disk J, the bolt K, is changed so as to throw the rack out of gear which is in gear and that in which is out, then by drawing the slide the motion of the disk and consequently of the rollers and canvas is reversed.

I, represents a spring which serves to draw the slide G, down, after it has been drawn up by hand or otherwise to operate the disk J. Through the side of the box A, is formed a key hole into which a key passes to change the position of the bolt K. Another opening is formed above the key



hole through which a small plate on the inside of the box is seen upon which letters are marked to indicate the direction which the canvas is traveling. This plate is marked *n*, Fig. 4 and is operated, or its position changed by means of a pin *z*, upon the bolt *K*. Every change of the bolt makes a corresponding change in the plate so that it always indicates the direction in which the canvas is moving.

*c*, is a pin secured to the upper end of the slide *G*, this pin is operated upon by means of a pin *s*, upon a trigger which is secured in the box *A*.

*P*, is a bar sliding upon top of the box and to which the cord is secured which operates the machine. When the bar *P*, is drawn out it operates the trigger above mentioned and as stated communicates motion to the slide *G*.

I do not propose to confine myself to indicating stations, &c., on railroads in this way. I propose to duplicate the arrangement for revolving the canvas, and to print advertisements upon the duplicate canvas. This will furnish a very cheap and conspicuous advertisement especially for business men living upon streets through which a railroad may pass. Motion may be communicated to the advertising canvas through the gear wheel *c*, so that when it is necessary to change the indicator for streets and stations, &c., the advertisement will also be changed either showing new styles of goods or entirely new advertisements.

*N*, represents a bell which is stationed either upon the case or within it and which is struck so as to give an alarm when the bar *P*, is moved. This bell may be struck in any convenient known way. The object of the bell is to call attention to the machine when approaching stations and streets, &c. The bar *P*, lies in a case or tube upon the top of the box *A*, and is surrounded with a spring *w*, which gives the bar space to overcome the slack of cord where several indi-

cators are used in a series of cars, and at the same time serves to draw the said bar back again to the position from which it started.

*T*, represents a portion of the bell cord, and *R*, is a cord which is attached to the bar *P*, at one end and to the bell cord at the other. The bell cord passes forward in the usual manner through the train, and each indicator is connected to it by the short cords *R*. When the engineer pulls the cord he operates all of the indicators throughout the train—but when the conductor pulls the cord to ring the bell the short cord *R*, allows the cord *T*, to draw without moving the indicator.

Fig. 7 shows a modification of the plan shown in Fig. 1, for operating the bars *H*, *H*.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. The arrangement of the slide *G*, rack bars *H*, *H*, disk *J*, provided with pins *x*, *x*, *x*, bars or rods *i*, *l*, bolt *K*, and springs *m*, *d*, the several parts being constructed and used as and for the purpose herein specified.

2. The employment of the rollers *E*, *F*, *F*, and *D*, together with the band *C*, when said roller *D*, is constructed in the manner herein represented, whereby the slack of the band or canvas, is taken up as it passes from one roller to the other substantially as specified.

3. The arrangement of the bolt *K*, the pin *z*, and the plate *n*, together with the apparatus for revolving the canvas, substantially as specified.

4. The bar *P*, the spring *w* and the cords *T* and *R*, arranged and used in the connection and for the purpose herein set forth.

In witness that I claim the above I have hereunto set my hand in the presence of the subscribing witnesses.

H. HOWARD GRATZ.

Witnesses:

C. M. ALEXANDER,  
T. H. ALEXANDER.