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PATENTED DEC. 1, 1903.

C. S. SINCLAIR,
MECHANISM FOR DISPLAYING ADVERTISING CARDS, DISPLAY SIGNS, &c.

APPLICATION FILED JULY 8, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1

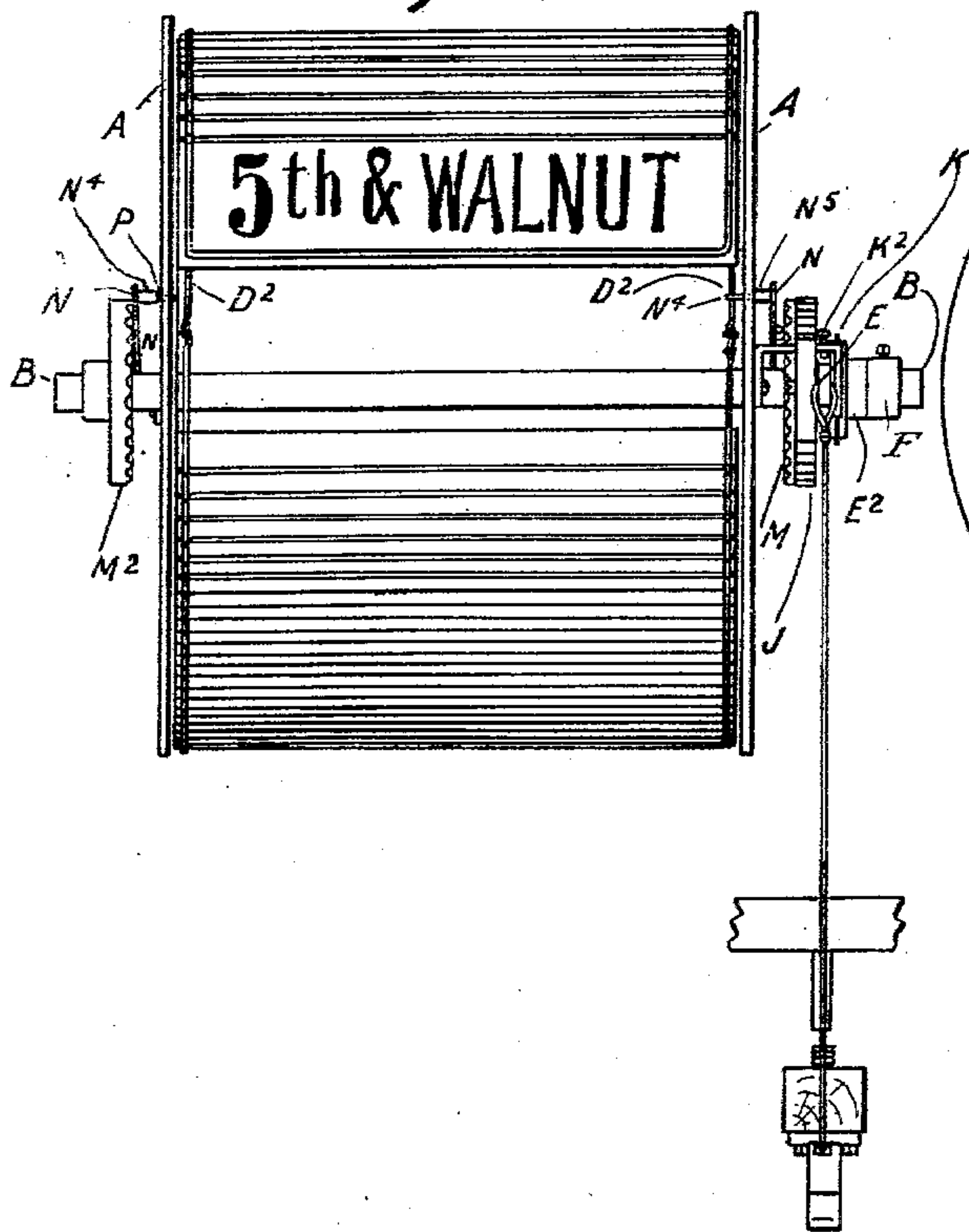
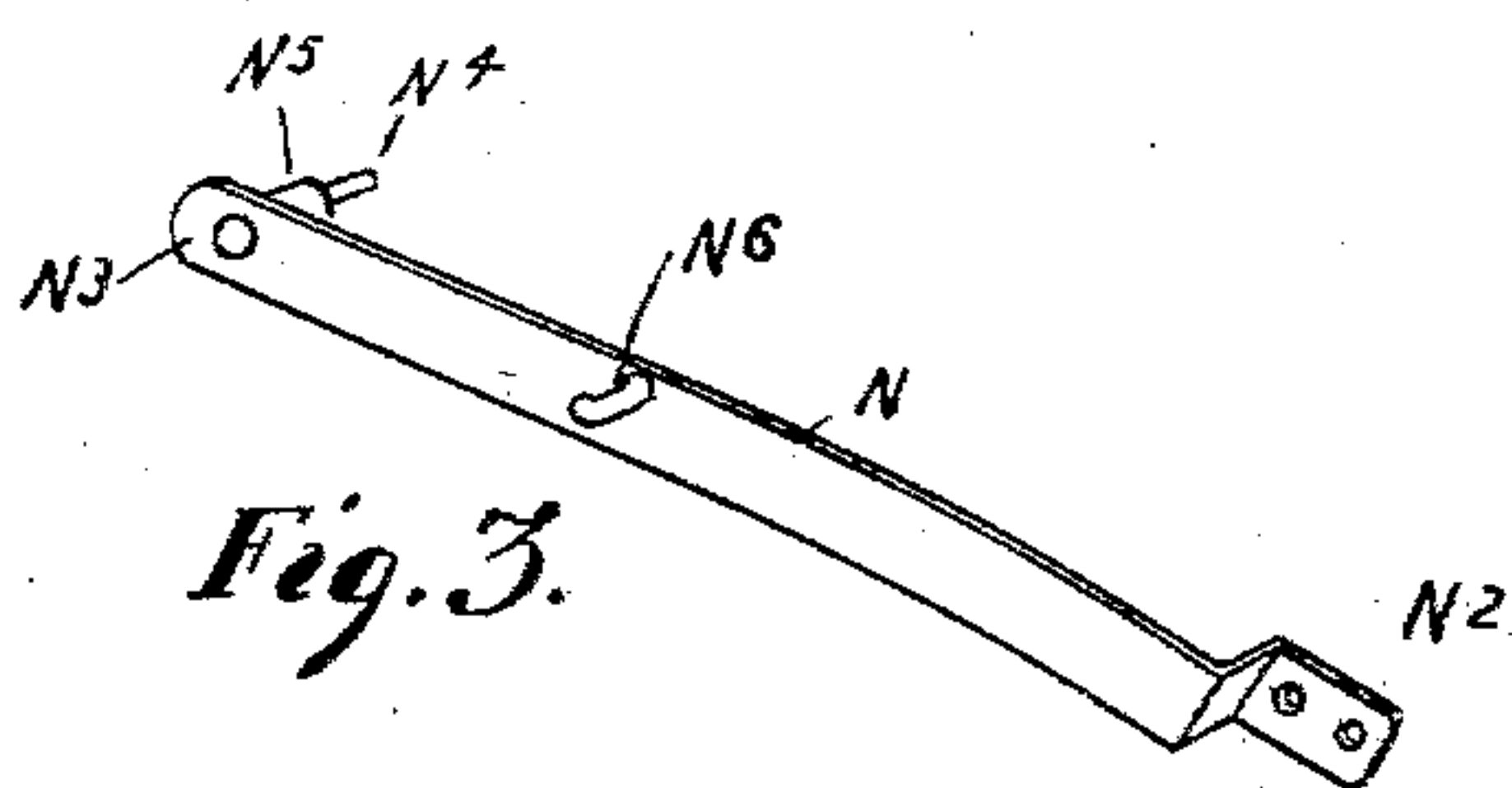
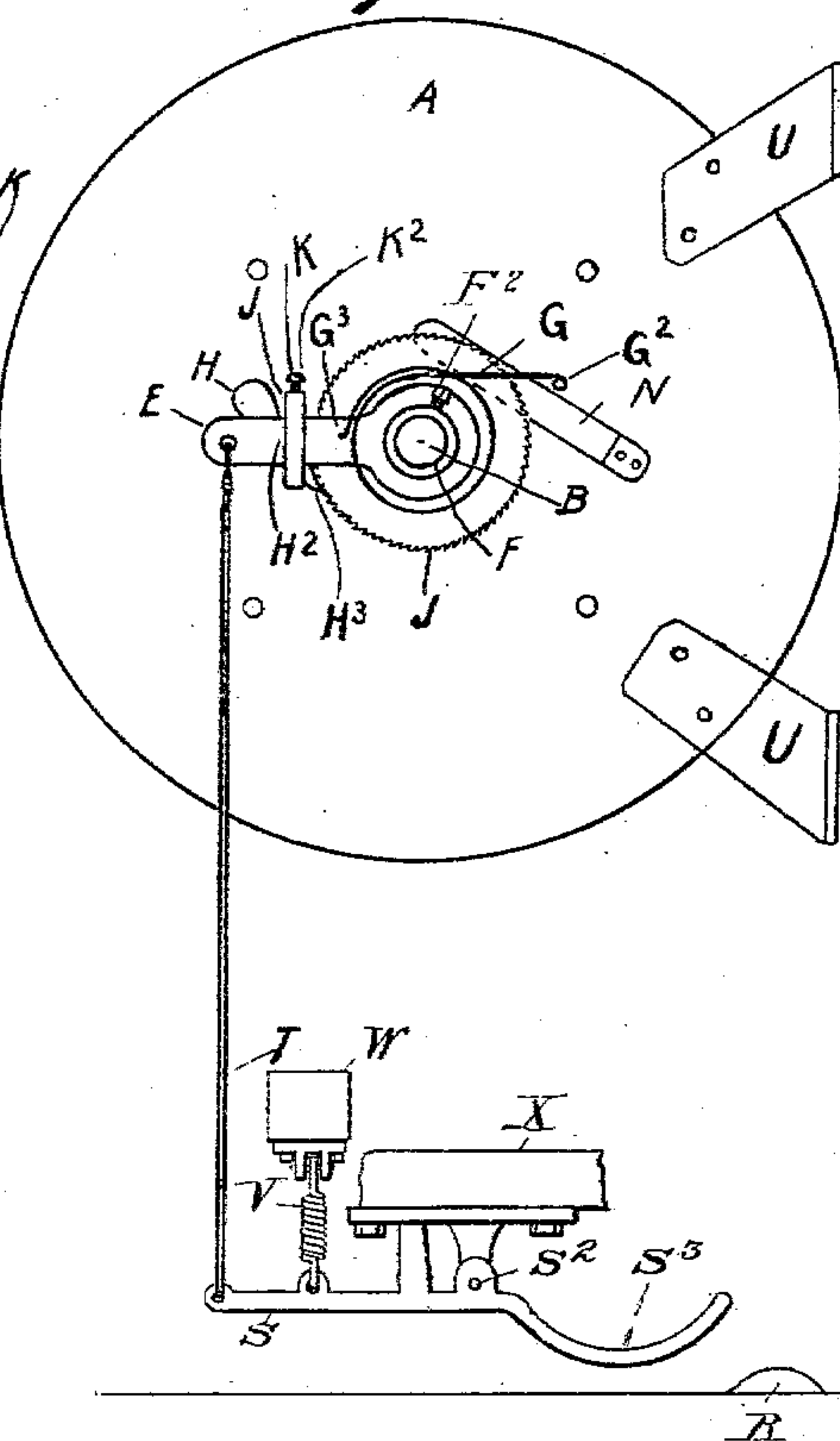


Fig. 2



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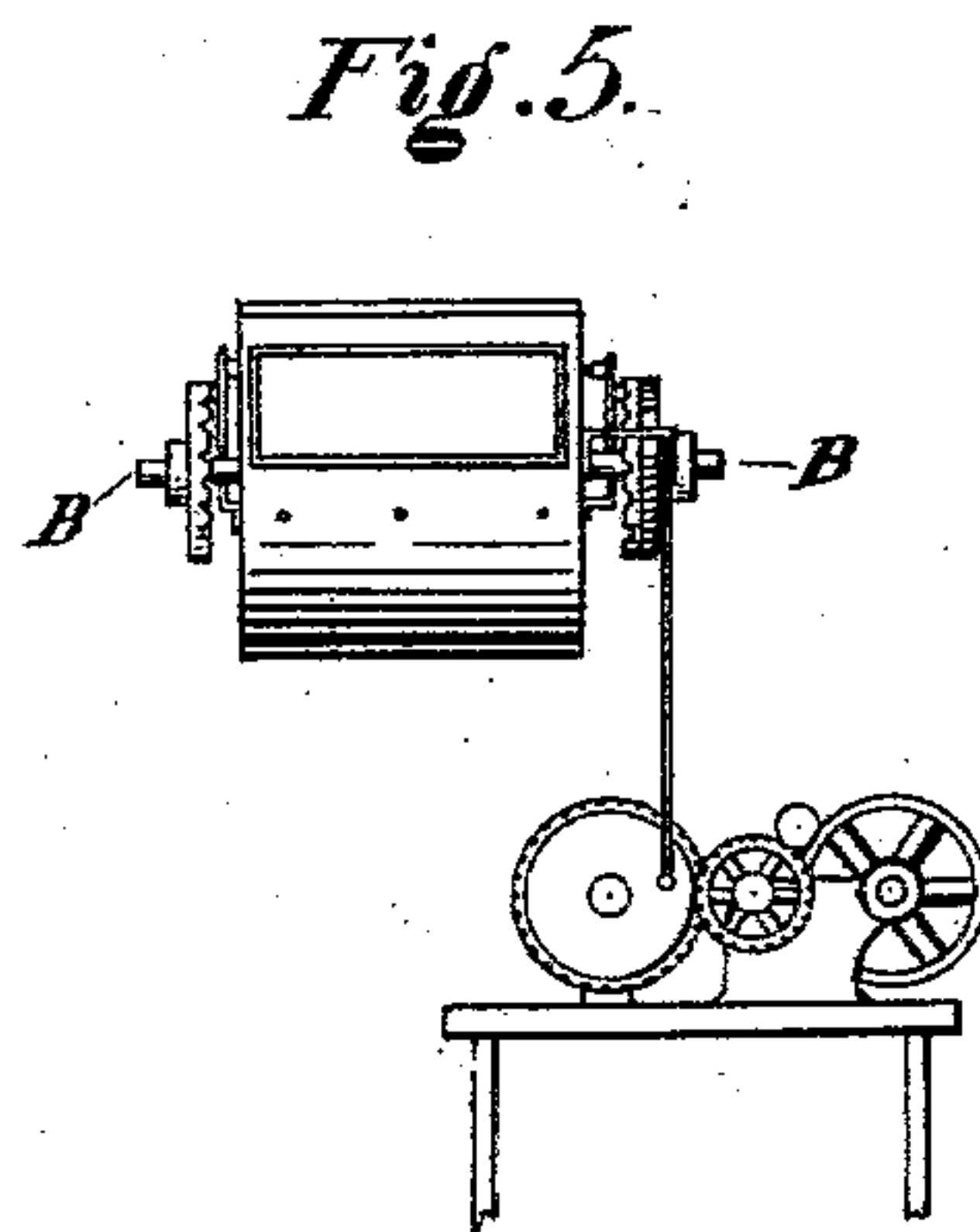
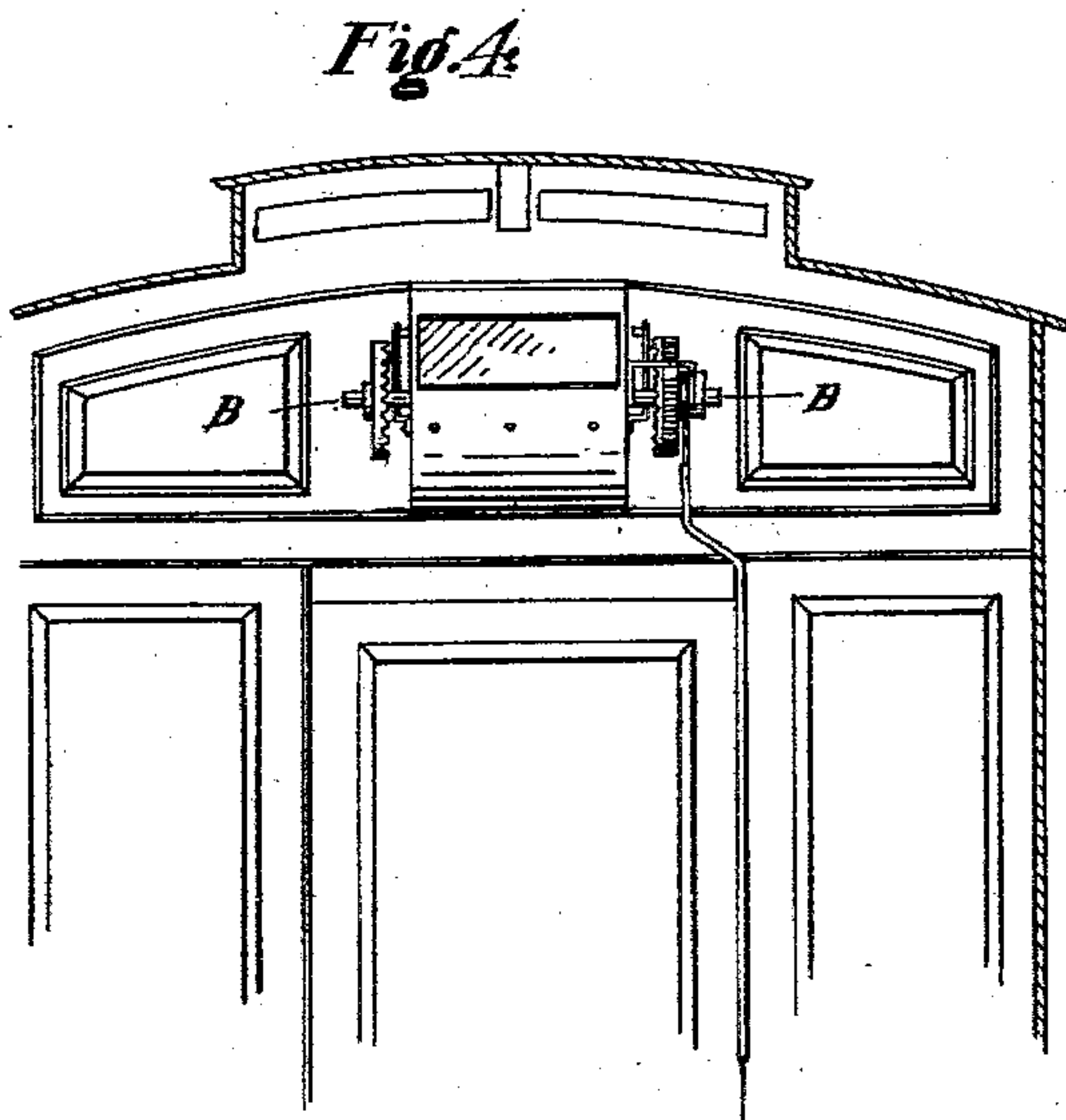
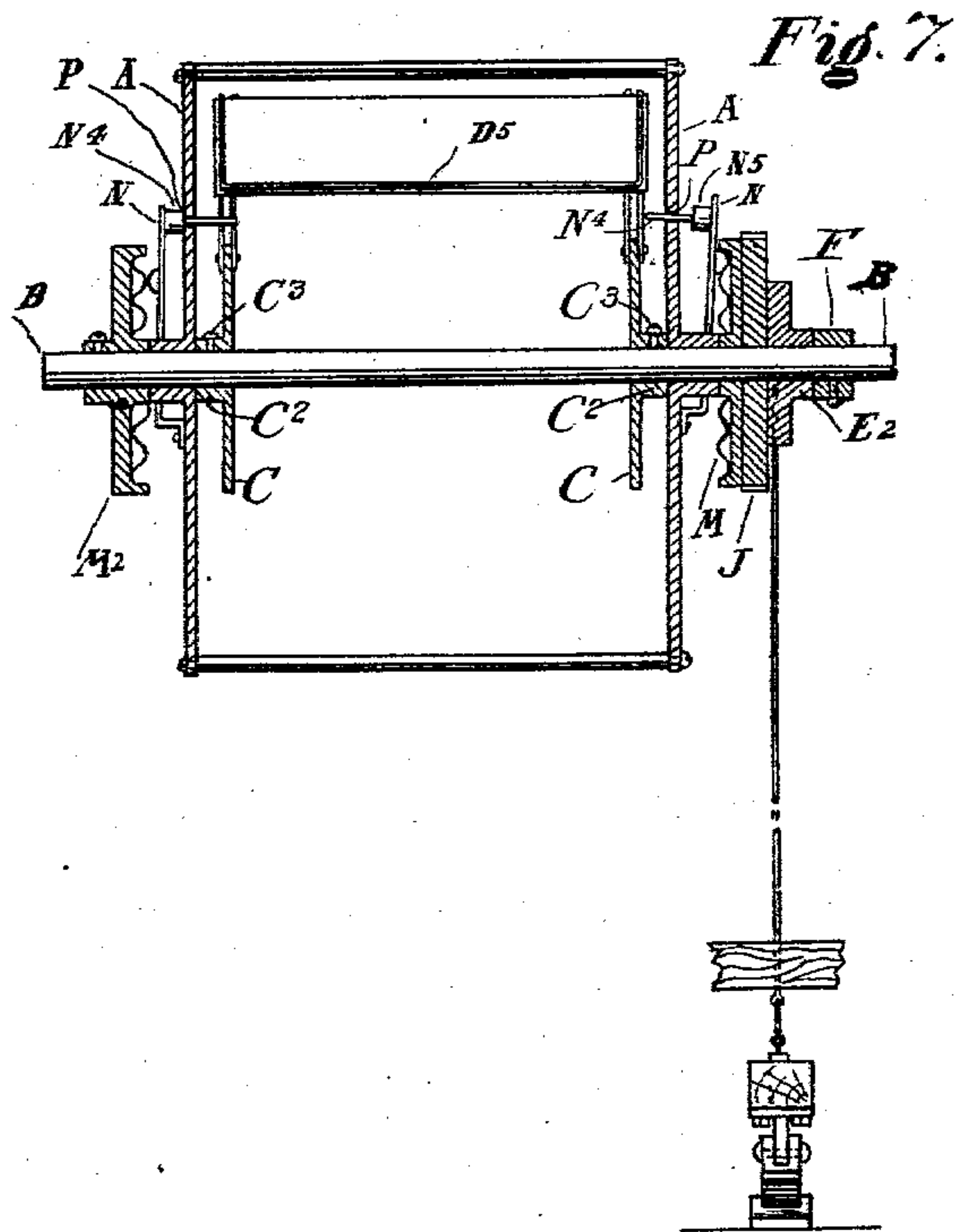
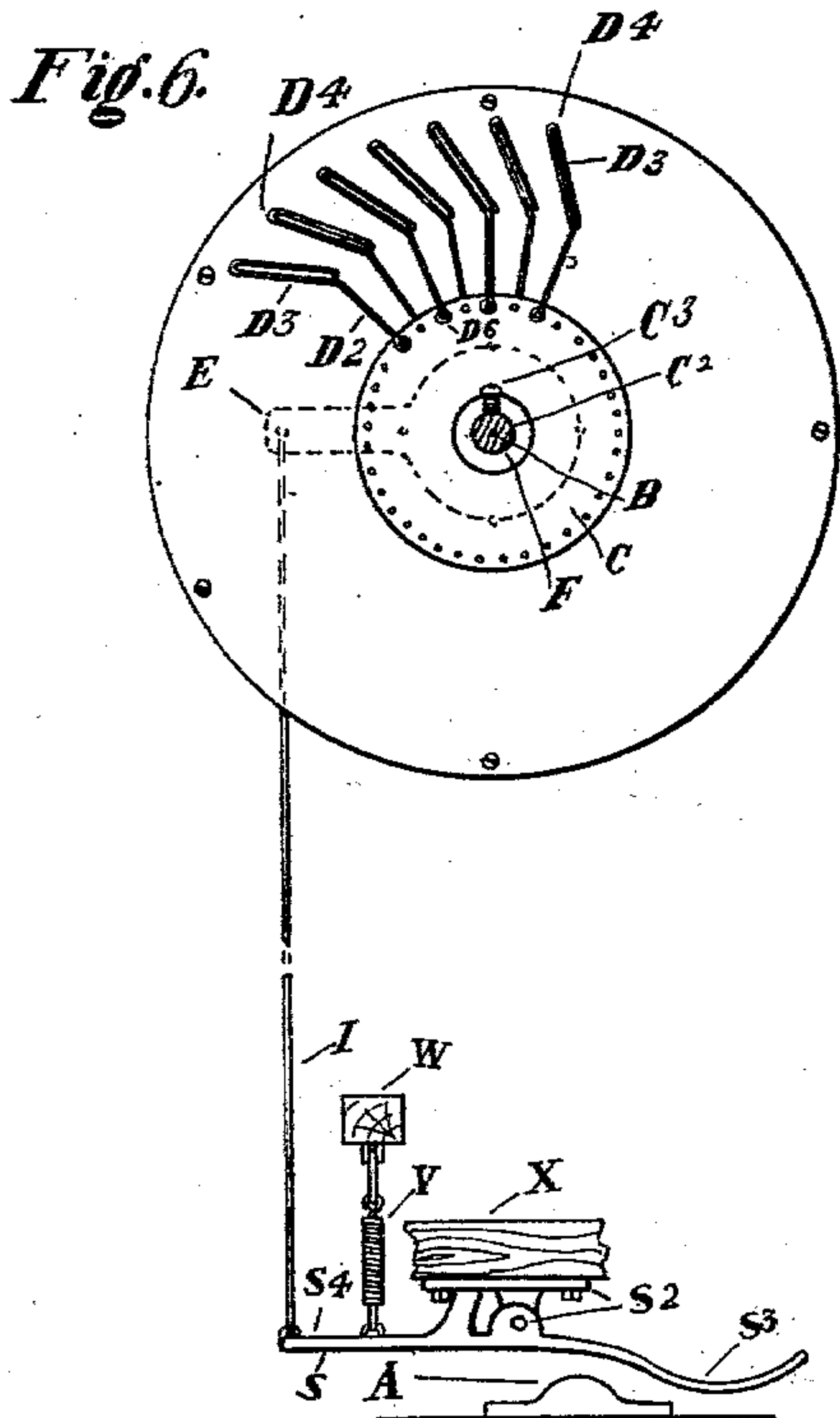
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UNITED STATES PATENT OFFICE.

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MECHANISM FOR DISPLAYING ADVERTISING-CARDS, DISPLAY-SIGNS, &c.

SPECIFICATION forming part of Letters Patent No. 745,532, dated December 1, 1903.

Application filed July 8, 1901. Serial No. 67,448. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SINCLAIR, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Mechanism for Displaying Advertising-Cards, Display-Signs, &c., of which the following is a specification.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, and in which similar letters of reference indicate corresponding parts, Figure 1, Sheet 1, represents a front elevation of a machine illustrating my invention. Fig. 2, Sheet 1, represents a side elevation of the machine shown in Fig. 1. Fig. 3 is a perspective view of one of the devices for stopping temporarily the passing of a given display-card. Fig. 4, Sheet 2, is an elevation of the upper portion of a railway-car, showing a mode of applying thereto the upper portion of my improved mechanism. Fig. 5, Sheet 2, exhibits in elevation another means for operating the mechanism for displaying the cards or signs. Fig. 6 represents an elevation of that side of my invention which faces toward the left in Fig. 7. Fig. 7 is a view, partly in section and partly in elevation, the lower portion of the mechanism being shown in elevation. The section of those parts which are sectionized is taken in a vertical plane passing through the center of the axis on which the disks A rotate.

I will now proceed to describe my invention in detail.

A A respectively indicate similar disks suitably connected together. One mode of such connection is shown in Fig. 2. A shaft B, concentric with the disks A, passes through them and rotates at the times hereinafter specified. Between the disks A A and concentrically located on this shaft B are the lesser disks C C, provided with devices suitable for carrying the display cards or signs. The preferred means for immediately carrying these cards and which means are of my invention consists as follows: In each holder, near one of the disks C, the wire or rod has

a basal part D². Then it has a part composed of parallel lengths D³ D³ of wire joined at D⁴. A similar construction is present near the other disk C, and the two constructions are joined by a wire D⁵. The planes of the lengths D³ of wire in front make an acute angle with the planes of the wires D² and at the rear make an obtuse angle with the wires D². The preferred mode of joining the free end of the part D² to the adjacent disk C is by an eye D⁶, formed on such free end and connected to the disk (near the periphery of the latter) by a bolt or a screw passing into or through the disk. The disks carry a number of these card-holders D, arranged at suitable intervals around the peripheries of such of the said disks.

Into the spaces between the parallel parts D³ D³ of a holder is inserted the card or sign to be displayed. The disks C are preferably mounted on the shaft B by means of sleeves C², fixed to the disk and set fast to the shaft B by a set-screw C³ at the desired place on said shaft. It now remains to specify the mechanism whereby these display-cards are moved and also held stationary, as desired. Such mechanism is as follows: A lever E is connected to the shaft B, preferably by a sleeve E², and the latter turns on the shaft B. Outside of the lever and on the shaft B is a set-sleeve F and carrying a set-screw F², whereby the sleeve may be set on the shaft and prevent the lever E from slipping toward the end of the shaft. The free end of this lever E is adapted to receive means for drawing it down, substantially as hereinafter described, and suitable means are present to retract it after being drawn down. Preferred means consist of the spring G, fixed at G² to the framework and at its other end G³ fixed to the lever E. The function of the lever E is to rotate the shaft B through intermittent movements whose times are determined by the means for operating the lever E, and its tooth H³ continually engages the teeth of a ratchet-wheel J, fixed on the shaft B. A frame K, carried out from the adjacent disk A, carries a set or regulating screw K². The distance the lever E is allowed to rise when uplifted by the spring G will determine how many teeth it will pass at any given time and therefore the speed of rotation it will impart to the shaft

B. The distance of the lever is regulated by the screw K^2 . When the set-screw is screwed down, the upward throw of the lever E will be correspondingly restricted, and conversely.

5 In the present illustrative instance the weight of the rear end of the pawl operates to keep its point H^3 against the teeth of the ratchet-wheel, but a suitable spring may be substituted therefor. The inner side of this ratchet-
10 wheel carries a gear M after the manner of a crown-gear, but the teeth are rounded, as are also the depressions between the teeth, for a purpose hereinafter apparent.

One end N^3 of a spring-piece N is attached
15 to the adjacent disk A by bolts or the like. The other end N^3 is provided with a pin N^4 , which plays through a hole P in the disk. A shoulder N^5 at the rear of the pin limits the movement of the pin through the hole P;
20 but when the pin N^4 is permitted to go as far as it can through the hole it will extend beyond the inside of the disk A sufficiently to be in the way of those parts D^2 of the holders D which are on the adjacent side of the ma-
25 chine. On the spring-piece N is a rounded projection or tooth N^6 and located so as to engage successively the teeth of the crown-gear M as the latter rotates. The operation of this part of my machine is as follows: As
30 the crown-gear rotates a tooth engages the projection N^6 of the spring-bar N and presses the bar toward the disk A and causes the pin N^4 to advance and project beyond the inner side of the disk and obstruct the forward
35 movement of the part D^2 of the adjacent card-holder D, and thus prevent it advancing—that is to say, this card-holder is there held so long as the pin continues thus projected.

When the ratchet-wheel T is further rotated,
40 the projection N^6 drops into the depression of the crown-gear M, which follows the tooth it formerly engaged. The projection N^6 will act in this manner because the elasticity of the bar N keeps it always pressing toward the
45 crown-gear M. So soon as the projection N^6 passes into the depression the bar N has moved toward the crown-gear M and draws its pin N^4 back and out of the path of the adjacent part D^2 of the holder. This holder D will fall for-
50 ward out of sight and carry with it its card, thereby causing that also to disappear. At the other end of the machine on the shaft B and outside of the adjacent disk A there is a crown-gear like the crown-gear M, and I have
55 therefore indicated it by the character M^2 . To the outer side of that disk A is fixed a bar N^2 just like the bar N heretofore described in all particulars, including the pin N^4 N^5 and projection or tooth N^6 .

60 The operation of the projection N^6 in connection with the gear M^2 is like that of the first-named projection engaging the gear M; but the operation of the gear, bars, and the pins N^4 of each side is not simultaneous, but
65 alternative. For instance, while the projection N^6 of the bar N engages a tooth of the crown-gear M and first-named pin N^4 (on

disk A at right hand looking at Fig. 1) consequently extends beyond its disk and across the path of the part D^2 of a holder. The pro-
70 jection N^6 of the bar N^2 is in a depression of its crown-gear, and its tooth is drawn back out of the way of a part D^2 of a holder D on its side of the machine; but as heretofore
75 described, when the first-named (right hand) pin N^4 is drawn back and the card-holder it was upholding is being allowed to fall a tooth of the crown-gear M^2 (at the left) advances and engages the projection N^6 of its adjacent
80 bar and advances its pin N^4 across the path of the part D^2 of the next card-holder, and thus holds it so that it makes no display. As the shaft B is next rotated a ratchet-tooth this pin N^4 draws back, allowing the card-
85 holder it has been supporting to drop, and the opposite pin N^4 is advanced to sustain the next card-holder, whose card has now come into position. Thus these opposite pins as the shaft B is rotated alternately
90 operate to drop and to sustain successive card-holders.

The preferred mechanism for operating the lever against the action of the spring C is as follows: Upon the track at suitable points I
95 locate a curved pillow-block or curved tripper-block R. Under and to the car I fix a lever S, pivoted at S^2 to a part, as X, of the vehicle. The forward part S^3 of this lever curves upward and forward, as shown, and
100 its front end is connected to the free end of the lever E by a suitable connection, as the cord T. The rear part of the lever is connected to a spring V, in turn connected to a part W of the car.

In operation as the car advances the curved
105 front S^3 of the lever S first strikes the curved tripper R, thereby lifting the curved front S^3 and slackening the cord T. Thereupon the spring G is free to act and lifts the lever E and moves the pawl H over a tooth of the ratchet-
110 wheel. Then the tripper R next hits the heel or rear part S^4 of the lever S and raising it depresses the front end S^3 and by the cord T draws down the lever E, and thereby rotates the ratchet-wheel a tooth. Thus as trippers R
115 are successively reached the lever E is moved, so as to rotate the ratchet-wheel one tooth, and consequently change the display-card in the manner heretofore specified. One kind
120 of modification of the means employed to operate the lever E is indicated in Fig. 6, and consists of clockwork arranged at suitable intervals to pull the cord and depress the
125 lever E. As the operation of such clockwork is well understood by those skilled in clock and gear mechanism and as I claim nothing novel in the clockwork itself, further mention of the same is omitted.

It is obvious that various signs can be
130 placed in the holder. Not only advertising-cards can be lodged therein, but the names of streets or stations at which the car or cars are to stop may be inserted. The cards are

readily removed from the holders and others made to take their place in the holders.

The disks are preferably united at their edges by metal or other sheeting, except at the place where the display-cards are to be seen. The cylindrical body thus formed is connected in any suitable manner to the thing from which it derives its support. One such connection is the connecting-pieces U. (Shown in Fig. 2.)

Among the important advantages resulting from the use of my invention there may be mentioned that the machine works automatically. It requires no attendant.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a machine for displaying cards, the card-holders each consisting of the pieces D^2 and the upper parallel pieces D^3 united at D^4 and the interconnection D^5 connecting adjacent pieces D^3 , the plane of the pieces D^3 making in front an acute angle with the plane of the pieces D^2 , and at rear an obtuse angle therewith, these holders being pivoted at the end of each piece D^2 upon a rotatory support, and means for holding and releasing successively the holders, substantially as and for the purposes specified.

2. In a machine for carrying card-holders arranged to rotate around a central axis, mechanism consisting of the bar having a pin for duly interfering with the movement of the card-holders, the projection or tooth adapted to move the bar, and the crown-gear whose teeth are adapted to successively engage the said tooth, and means for rotating the crown-gear, substantially as and for the purposes specified.

3. In a machine carrying card-holders adapted to be carried forward and to fall forward at a certain point in their forward passage, a bar provided with a pin which when advanced comes in the way of a holder and prevents its fall, a tooth or projection on the bar, a crown-gear whose teeth are adapted to successively engage the tooth aforesaid, and at such times advance the pin, means for retracting the pin when the tooth does not engage the teeth of the crown-gear, and means for rotating the crown-gear at suitable intervals, substantially as and for the purposes specified.

4. In a machine for carrying card-holders adapted to be carried forward and to fall for-

ward, at a certain point, in their forward passage, a bar provided with a pin which when advanced comes in the way of a holder and prevents its fall, a tooth or projection on the bar, a crown-gear whose teeth are adapted to successively engage the tooth aforesaid, and at such times advance the pin, means for retracting the pin, when the tooth does not engage a tooth of the crown-gear, a similar pin, bar, projection or tooth thereon, and crown-gear, means for retracting this pin when the tooth on its bar is not pressed forward by a tooth of the crown-gear, both crown-gears being mounted on a common shaft and arranged so that the teeth of one crown-gear successively operate on the tooth of its adjacent pin-bar, when the teeth of the other crown-gear are out of contact with the tooth of the adjacent pin-bar, both crown gears being mounted on a common shaft, and means for rotating this shaft, substantially as and for the purposes specified.

5. In a machine for moving card-holders for their display, a series of card-holders, devices for respectively receiving and holding the card-holders, and for allowing them to fall under given conditions, pins for alternately interfering with the movement of successive card-holders, movable teeth, projection or tooth adapted to be engaged by the teeth, means for enabling this projection to operate its respective pin, and means for enabling the card-holders to be moved, substantially as and for the purposes specified.

6. In a machine for displaying card-holders, the central operating-shaft, the small disk fixed thereto; the card-holders pivoted to said disk, and arranged to move in a circulatory path with said disks around said shaft, the outer discal end pieces each carrying a spring-bar, each bar having a tooth, and a pin extending through the adjacent disk, and in front of a given card-holder, and wheels whose teeth successively engage at suitable times the adjacent tooth of said bar, for advancing the said bar and its pin, and means for enabling said shaft and wheels to be rotated at given times as desired, substantially as and for the purposes specified.

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Attest:

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