

No. 786,807.

PATENTED APR. 11, 1905.

N. T. HARRINGTON.  
BRAKE MECHANISM.

APPLICATION FILED JULY 30, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

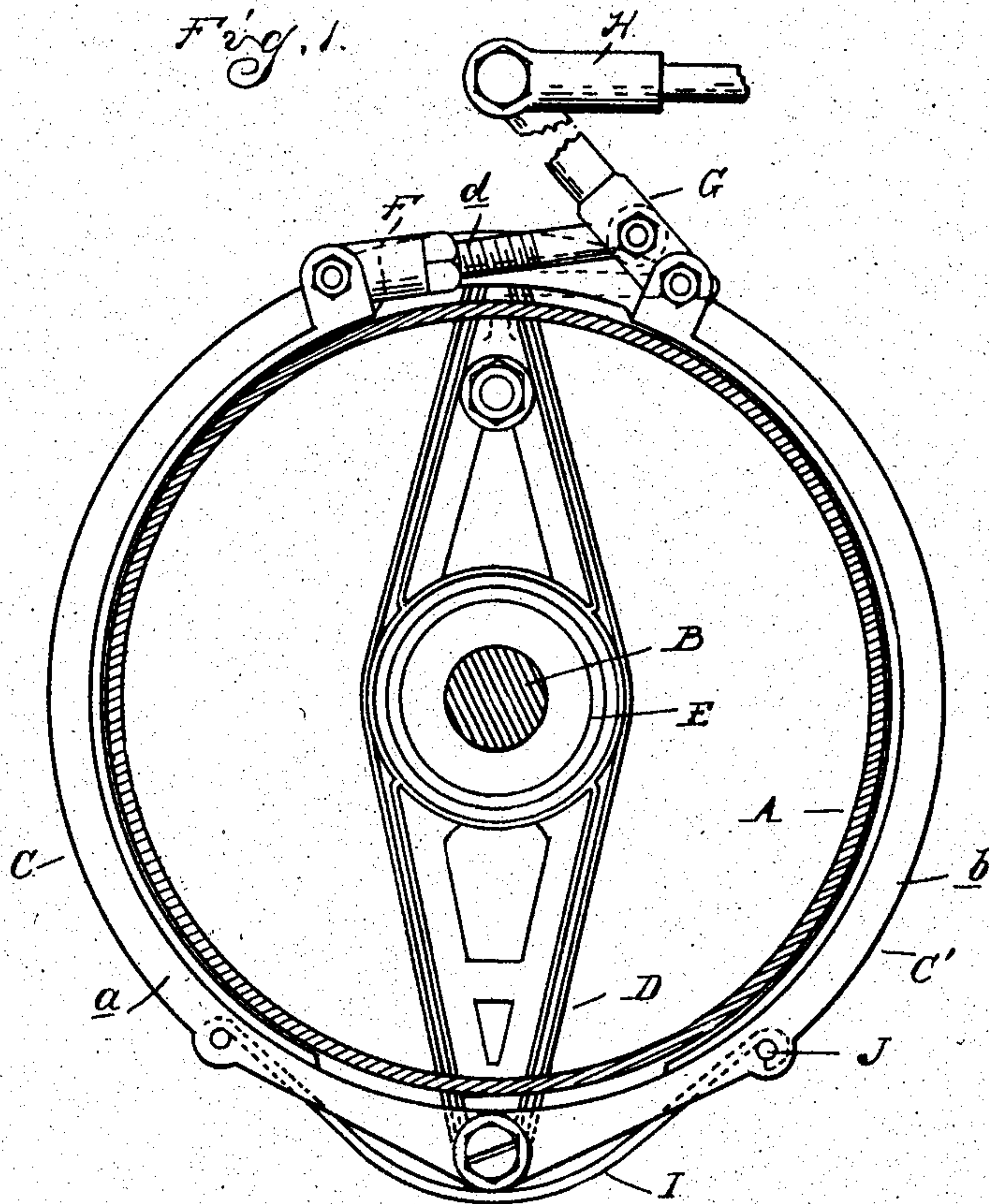
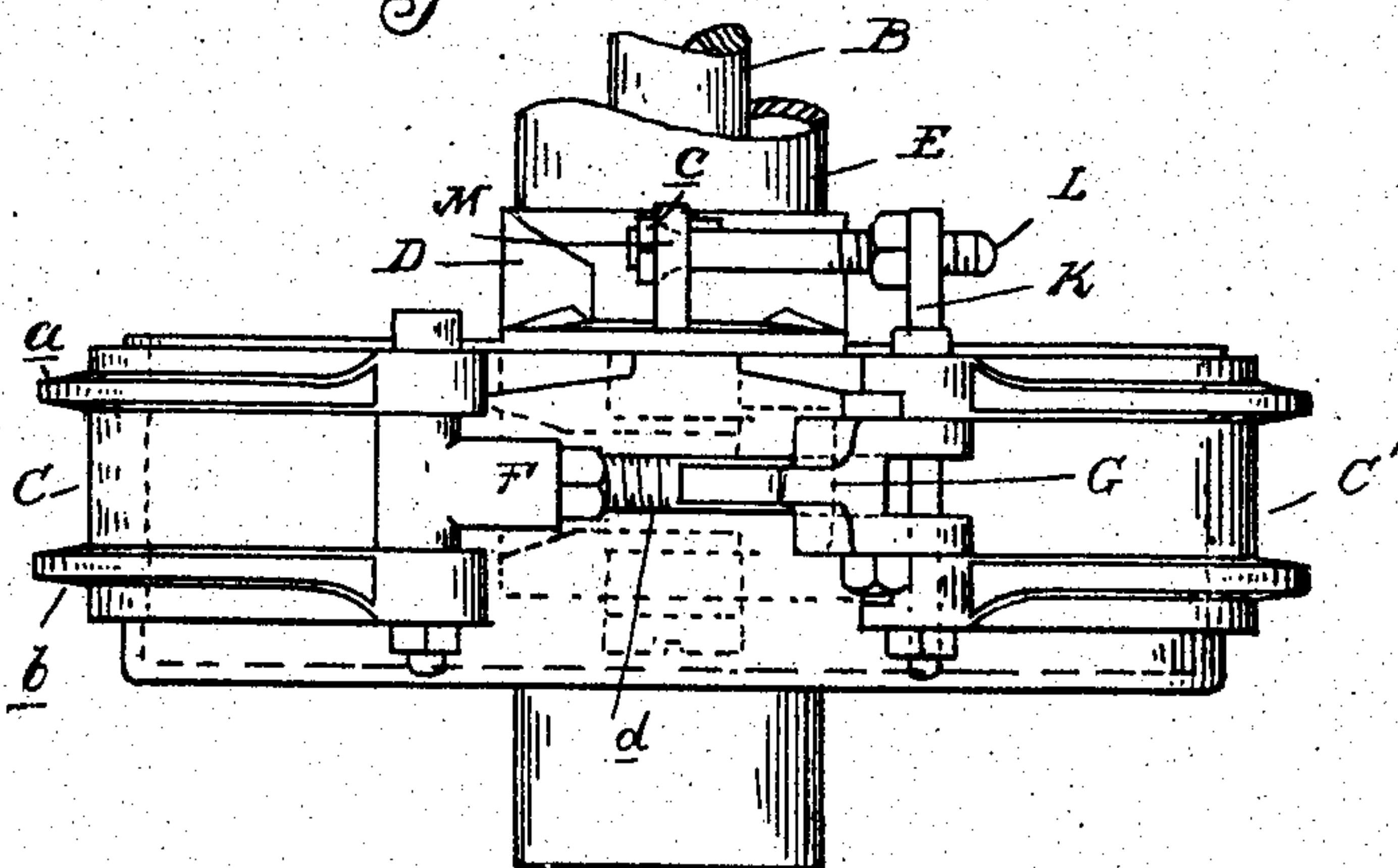


Fig. 2.



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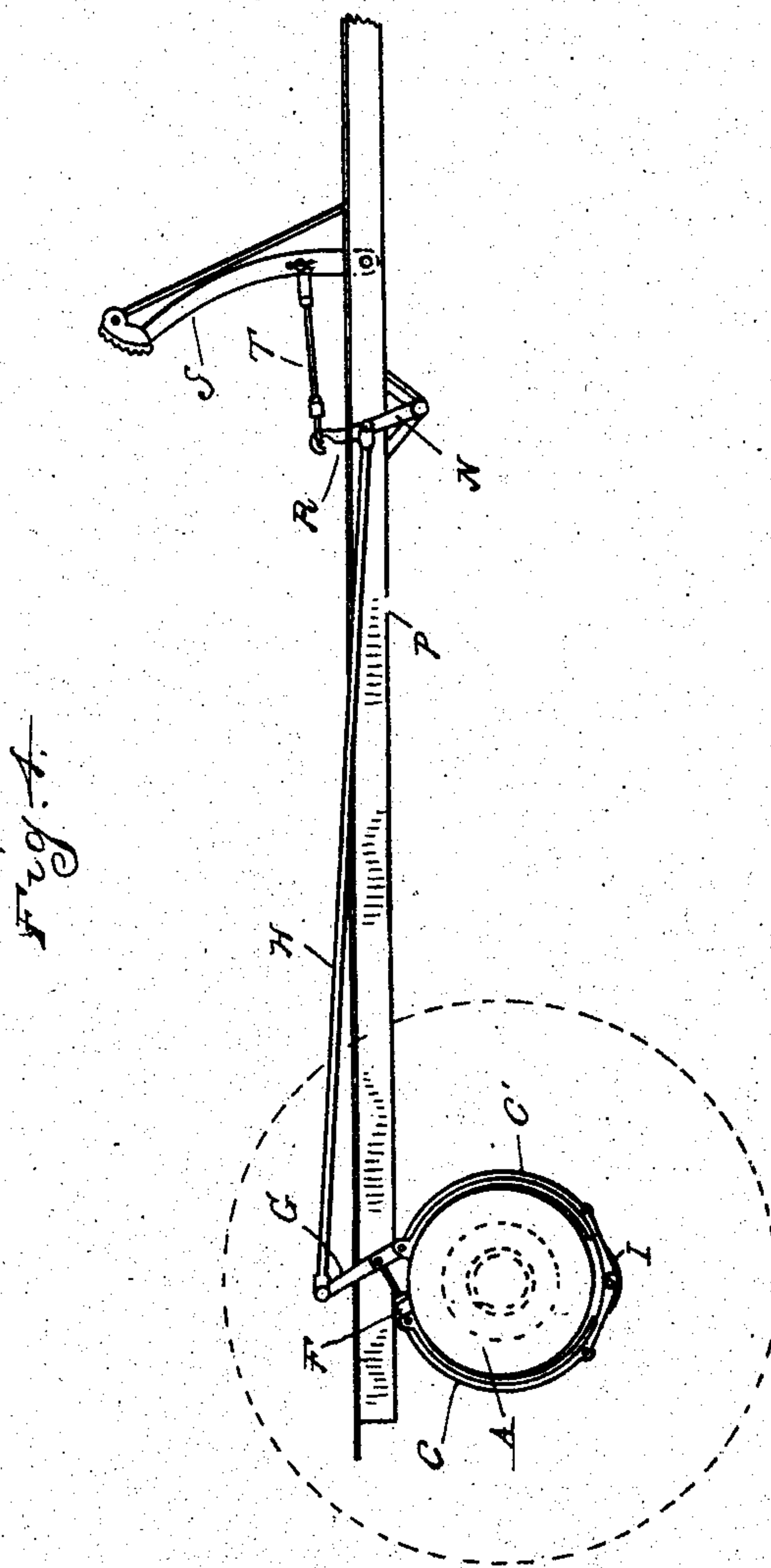
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

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OLDS MOTOR WORKS, OF DETROIT, MICHIGAN, A CORPORATION  
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## BRAKE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 786,807, dated April 11, 1905.

Application filed July 30, 1904. Serial No. 218,824.

*To all whom it may concern:*

Be it known that I, NORMAN T. HARRINGTON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Brake Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to brake mechanism more particularly designed for use on motor-vehicles; and the invention consists in the construction hereinafter set forth.

In the drawings, Figure 1 is a section through the brake-drum. Fig. 2 is a plan view thereof. Fig. 3 is a plan view of a motor-vehicle to which the brake is applied, and Fig. 4 is an elevation.

A is a brake-drum which is rigidly secured to the shaft or axle B.

C and C' are a pair of segmental brake-shoes pivotally secured at their lower ends to a bracket or stationary support D, which is preferably mounted on the pivotal housing E, inclosing the axle. At their upper ends the shoes C and C' are connected to each other by a toggle-lever connection comprising the link F and the lever G. The latter extends outward and has connected thereto the operating-rod H, by means of which the toggles are actuated. Thus whenever the rod H is drawn forward the toggles will be actuated to draw the shoes C and C' toward each other and cause them to frictionally clamp the periphery of the drum. The shoes when released are separated from each other by a spring I, and this is preferably arranged to centrally bear upon the pivotal connection between the shoes and to extend upon opposite sides thereof. The shoes C and C' are preferably formed with a pair of peripheral flanges *a* and *b*, between which the ends of the spring I extend, and these ends engage with pins J, which extend between the flanges *a* and *b*. The arrangement is such that the tension of the spring I is exerted to draw the pins J downward, and consequently to separate the shoes C and C' from each other. In order that the shoes may

not only be separated from each other, but also move equally upon opposite sides of the drum, a stop is arranged for limiting the movement of one shoe. This, as shown, is formed by the pin K, which forms the pivotal connection between the link F and lever G, the head of said pin having a threaded aperture therein with which the bolt L engages. The opposite end of this bolt engages with an apertured lug M, and a head *c* on the bolt forms a stop for preventing its withdrawal from the lug. The lug M is preferably formed integral with an opposite extension of the bracket D.

With the construction just described movement of the rod H will cause the actuation of the lever G and link F to draw together or separate the shoes C and C'. In the latter operation the head *c* of the bolt L, engaging with the lug M, will limit the outward movement of the shoe C'. As a consequence the opposite shoe C will be actuated by the spring I so as to move it outward in the opposite direction to the limit permitted by the toggle connection.

To compensate for wear in the shoes C and C', the link F is adjustable, preferably by forming it in two sections having a threaded engagement with each other at *d*. A corresponding adjustment is provided for the bolt L, which has a threaded engagement with the head of the pin K, the arrangement being such that by suitable adjustment the shoes C and C' will always move equally away from the drum A.

In applying the brake to the motor-vehicle two of the drums A are preferably secured to the two sections of the drive-axle on opposite sides of the compensating gearing, and an equal braking effect is obtained upon each of the drums by an actuating mechanism of the following construction: The rod H for each of the brakes is attached to a rock-arm N, and these rock-arms are respectively attached to the rock-shafts O and O', which are in axial alinement with each other and extending across the vehicle-frame P. The adjacent ends of these rock-shafts are journaled in a



bearing Q, and upon opposite sides of said bearing are the rock-arms R and R', attached to the shafts.

S is a foot-lever fulcrumed on the frame.

5 T is a link connected to said lever, and U is a yoke pivotally attached to the link T and engaging with its opposite ends with the levers R and R'.

The construction just described is such that  
10 whenever the lever S is actuated motion will be communicated through the link T to the yoke U and through the latter to the rock-arms R and R'. As the yoke U is an even lever, the force of the pull will be divided be-  
15 tween the two rock-arms, so that an equal force is applied to the brakes through the rock-shafts, rock-arms N, and rods H.

The tension of the spring I tends to pull the lever G and the link F into a straight line.  
20 However, the bolt L prevents the outward movement of the shoe C' beyond a certain fixed limit. The shoe C will be moved outward by the tension of the spring I and will carry with it the link F, which will conse-  
25 quently pull the lever G and carry the rod H. The rock-arm N (shown in Fig. 4 in position with brake applied) will be pulled by the rod H until it lies in a straight line with the said rod. This will naturally be its extreme posi-  
30 tion, and thus the rod H acts as a stop for the outward movement of the shoe C.

What I claim as my invention is—

1. In a motor-vehicle, the combination with  
35 a pair of brake-heads on each section of an axle, peripheral brakes for engaging said heads, rods for operating said brakes, rock-shafts for actuating said rods, rock-arms upon said rock-shafts, a foot-lever and a yoke or  
40 evenner, connecting said rock-arms and actuated by said foot-lever whereby equal power is transmitted to each brake.

2. In a motor-vehicle, the combination with  
45 a frame and a two-part drive-axle upon which said frame is supported, of a brake-head for each section of said axle, a peripheral brake for each head, alined rock-shafts journaled on said frame, operating-rods for said brakes con-  
50 nected to said rock-shafts, rock-arms secured to the adjacent ends of said rock-shaft, a foot-lever and a yoke connecting said rock-arms, having actuating connection with said foot-lever.

3. A brake comprising a rotary drum, piv-  
55 oted shoes embracing said drum, a tension device for separating said shoes, a toggle-lever connection for clamping said shoes upon the drum, a rod for actuating said toggle-levers forming in its released position a stop for  
60 limiting the outward movement of one of said shoes, and a stop for limiting the outward movement of the opposite shoe whereby both shoes in released position are freed from the drum.

4. A brake comprising a rotary drum, piv-  
65 oted brake-shoes embracing said drum, a tog-

gle-lever connection for clamping said shoes upon the drum, being adjustable to take up the wear in the shoes, a rod for actuating said toggle connection, forming in released posi-  
70 tion a stop for limiting the outward movement of one of said shoes, and an adjustable stop for limiting the outward movement of the opposite shoe.

5. A brake comprising a rotary drum, piv-  
75 oted brake-shoes embracing said drum, a tension device for separating said shoes, toggle-levers for clamping said shoes upon said drum, comprising a lever pivoted to one shoe and an adjustable link connecting said lever to the  
80 opposite shoe, a rod connected to the free end of said lever, forming an actuating connection therefor and in its released position a stop for limiting the outward movement of the shoe attached to said link, a headed pin  
85 adjustably attached to the opposite shoe and a fixed lug engaging with said pin forming in connection therewith a stop for limiting the outward movement of said shoe.

6. A brake comprising a rotary drum, piv-  
90 oted brake-shoes embracing said drum, a toggle-lever connection for clamping said shoes upon said drum, and a spring for separating said shoes, comprising a resilient member centrally bearing on the pivotal connection of  
95 said shoes, and at its ends engaging bearings on said shoes upon opposite sides of said pivot.

7. A brake comprising a rotary drum, a  
pair of segmental brake-shoes embracing said  
100 drum and pivotally secured to each other at one end, said shoes being of channel cross-section with parallel flanges extending out-  
ward, a toggle-lever connection between the movable ends of said shoes, a resilient bar  
105 centrally bearing on the pivotal connection of said shoes and having curved ends and pins extending between the flanges of said shoes, forming bearings for engaging with the ends of said bar.

8. A brake comprising a rotary drum, a  
110 pair of segmental brake-shoes, secured to a fixed pivot at one end, a toggle connection at the opposite ends comprising a lever pivoted to one shoe, and an adjustable link connect-  
115 ing said lever to opposite shoe, a pin forming the pivotal connection for said lever, said pin having a projecting head, a headed pin extending at right angles to said pivot-pin and having an adjustable threaded engagement  
120 therewith, and a fixed apertured lug with which said headed pin engages, cooperating therewith to form a limit for the outward movement of one of said shoes.

9. A brake comprising a rotary drum, a  
125 pair of segmental brake-shoes, pivotally secured at one end and embracing said drum, a toggle-lever connection for the opposite ends of said shoes, comprising a lever connection to one shoe and an adjustable link connect-  
130 ing said lever to the opposite shoe, the pin

K forming the pivotal connection between  
said lever and shoe and having a projecting  
head, the threaded and headed pin L engag-  
ing with correspondingly-threaded bearing in  
5 the head of the pin K and the fixed apertured  
lug *m* engaging with said pin L for the pur-  
pose described.

In testimony whereof I affix my signature in  
presence of two witnesses.

NORMAN T. HARRINGTON.

Witnesses:

H. C. SMITH,  
E. D. AULT.