

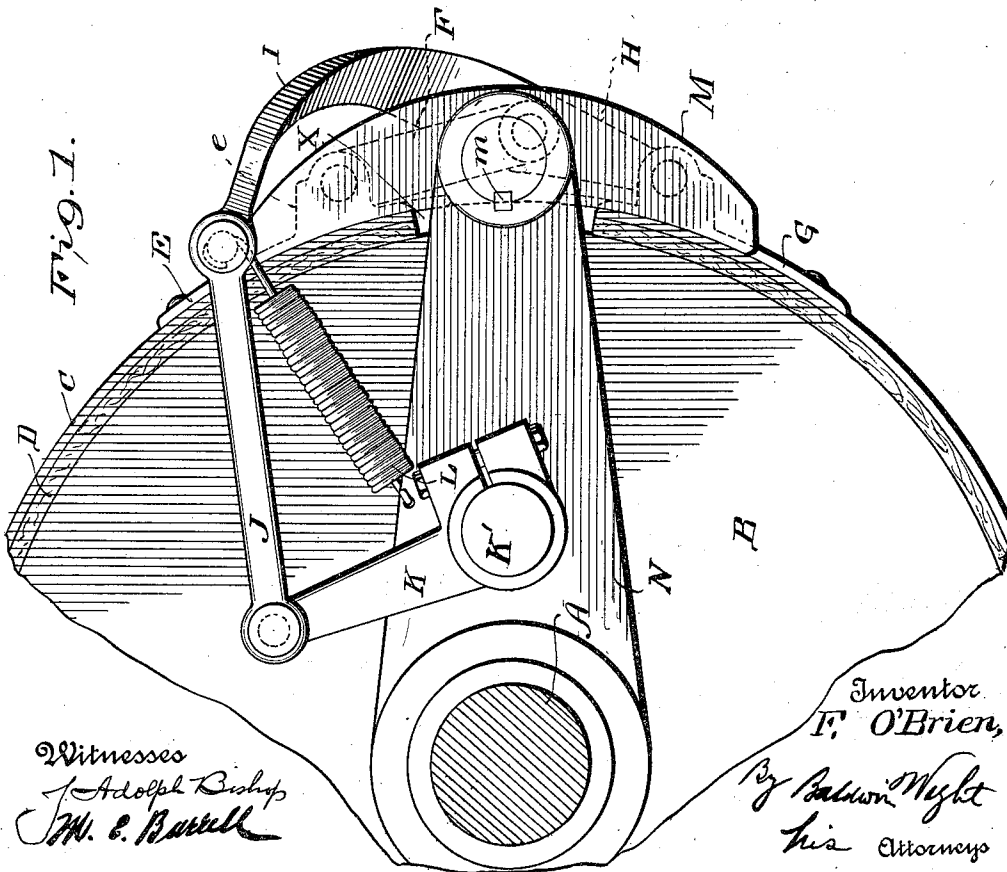
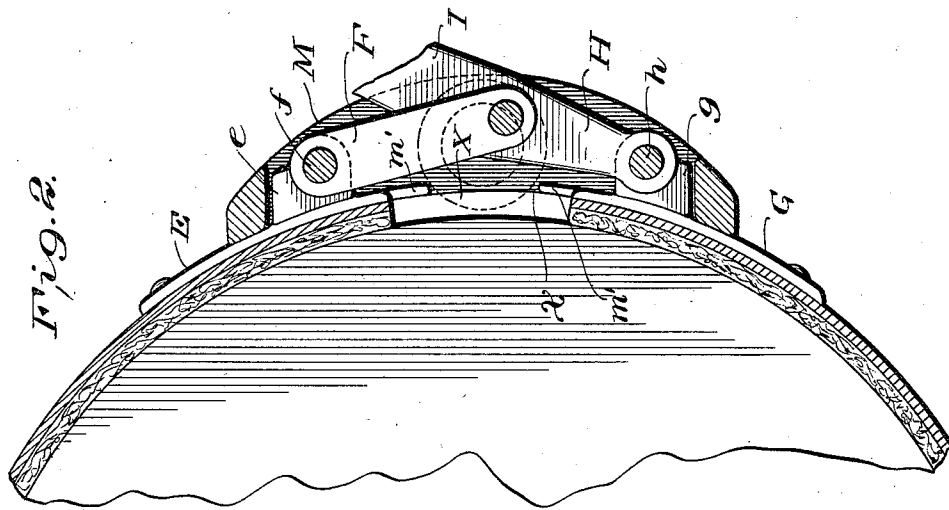
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BRAKE.

APPLICATION FILED SEPT. 18, 1911.

1,022,639.

Patented Apr. 9, 1912.

2 SHEETS-SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

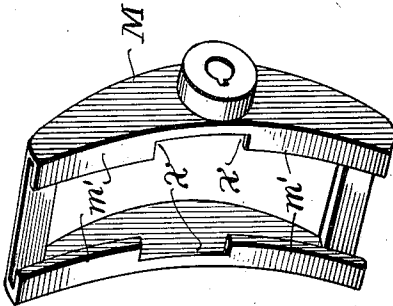


Fig. 6.

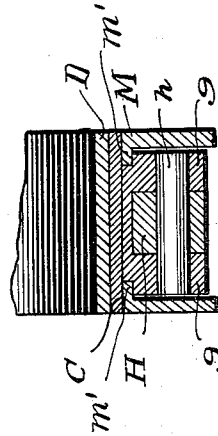


Fig. 4.

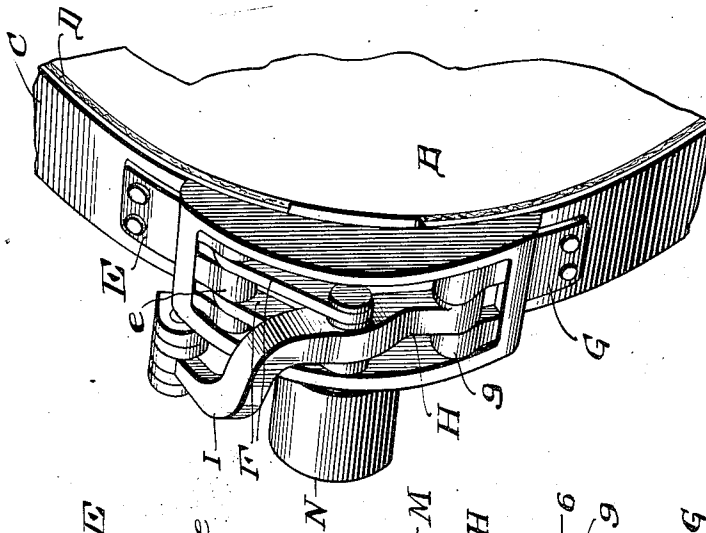
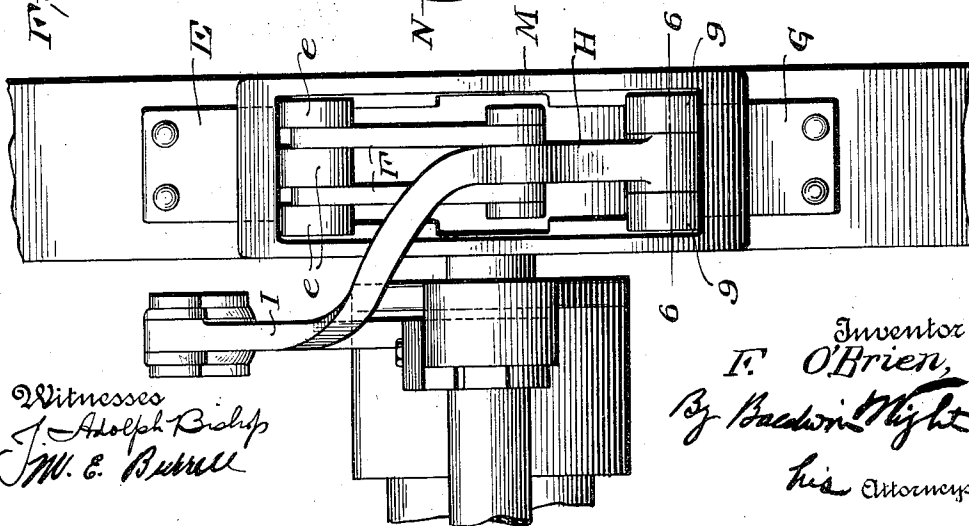


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BRAKE.

1,022,639.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that I, FRANK O'BRIEN, a citizen of the United States, residing in Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Brakes, of which the following is a specification.

My invention relates to that class of brakes known as band brakes which are employed in various kinds of machinery, and are also now extensively used on the wheels of automobiles, and the object of my invention is to provide a brake of this class which, while simple in construction, is easily operated to brake the wheel when the latter is moving in either direction, and which when in release position is free and clear from the brake drum with its parts held under strong tension, thereby preventing rattling.

In carrying out my invention, I provide a brake drum of ordinary construction, around which I arrange a brake band having a suitable lining. The band does not completely surround the drum, its ends being arranged a short distance apart and each end of the band carries a pivot plate for the inner ends of a set of toggle levers, one of which is prolonged into an operating arm which is connected by a link with an operating lever to which is attached a spring which normally holds the toggles in release position. The toggles are inclosed by a yoke, which also receives the pivot plates of the toggles and has stops which limit the outward movement of the plates when the latter are acted on by the spring and thus hold the band in a proper position on the drum and prevent rattling of the brake members. The yoke is rigidly secured to a spider arm radiating from the axle, and it is provided on its inner or under side with ribs or flanges which serve to hold the end portions of the band adjacent to them close to the periphery of the drum.

Other features of my invention will be hereinafter explained.

In the accompanying drawings:—Figure 1 shows a side elevation of my improved brake mechanism. Fig. 2 shows a vertical central section of parts thereof. Fig. 3 shows an end elevation of the same. Fig. 4 is a perspective view thereof. Fig. 5 is a perspective view of the under side of the

yoke. Fig. 6 shows a local section on the line 6—6 of Fig. 3.

The axle A and drum B are of usual construction. The thin steel band C is provided with a lining D and partially surrounds the drum there being a space X between the ends of the band as usual. Each end of the band is firmly secured to a pivot plate, one of said plates E being formed with three lugs *e* to receive the inner ends of the two toggle levers F and their pivot pin *f*, and the other plate G being formed with two lugs *g* to receive the inner end of the toggle lever H and its pivot pin *h*. The lever H is prolonged into an operating arm I which is connected by a link J with an operating lever K which as shown in Fig. 1 is connected with a shaft K' which may in turn be connected with any suitable mechanism for turning said shaft and operating the lever K. Normally the toggles are held in release position by a spring L connected at one end with an operating arm I and at its opposite end connected with a fixed part of the mechanism.

In order to hold the movable parts of the brake mechanism in proper position and to regulate the movement thereof, I employ a yoke M which is rigidly secured by a key *m* to the outer end of the spider arm N. The yoke is closed at its sides and at its ends open at the top and bottom to accommodate the toggle levers and their pivot plates. It will be observed that the lugs *e* and *g* project slightly sidewise beyond the edges of the plates E and G, and that the yoke is formed on its under side with inwardly projecting flanges *m'* which extend under the overhanging portions of the lugs *e* and *g* while the inner faces of the flanges lie close to the outer faces of the end portions of the brake band. The flanges are curved correspondingly with the curvature of the drum and constitute the inner curved portion of the yoke which overlaps the ends of the band. In this way the ends of the band are held close to the adjacent surface of the drum so that when the brake is released the band will not drag on any part of the drum and the ends of the band may be brought close together when the band is tightened. The yoke may be easily attached to any spider arm and readily connected with other parts of the mechanism. It will be ob-

served that the flanges m' are cut away at x to allow of the yoke being slipped over the lugs e, g so that the flanges will pass beneath the overhanging parts of these lugs, as shown in Fig. 6.

By properly operating the lever K the brake band will, through the toggle mechanism described, be drawn toward each other and as these ends are held close to the periphery of the drum by the flanges m' of the yoke, equal and continuous pressure will be applied throughout practically the entire surface of the drum and will remain thus applied as long as the lever K is held in operative position. When, however, the operating lever is released the spring L will so operate the lever I as to cause the toggles to move the pivot plates apart causing the lugs e and g to abut against the ends of the yoke where they are firmly held by the force of the spring L , thus placing such a tension on the mechanism as to prevent rattling. At the same time the flanges m' so hold the end portions of the band in release position that the latter is loosened around the entire periphery of the drum.

It is obvious that the brake may be operated equally well with the wheel moving in either direction.

I claim as my invention:

1. A brake, comprising a drum, a band encircling it, toggle levers connecting the opposite ends of the band, a yoke inclosing the toggles and having a curved inner portion overlapping and arranged close to said band ends, and a support to which the yoke is rigidly connected and which holds the inner curved portion of the yoke away from the drum and over the ends of the band.

2. A brake, comprising a drum, a band encircling it, toggle levers connecting the opposite ends of the band, a yoke inclosing the toggles and having a curved inner portion overlapping and arranged close to said band ends and having also cross pieces at its ends acting as stops which limit the movement of the toggles when the brake is released, and a support to which the yoke is rigidly connected and which holds the inner curved surface of the yoke away from the drum and over the ends of the band.

3. A brake, comprising a drum, a band encircling it, toggle levers connecting the opposite ends of the band, an operating lever, connections between the operating lever and the toggles, a spring for normally holding the toggles in release position, a yoke inclosing the toggles, and having a curved inner portion overlapping and ar-

ranged close to said band ends and provided also with stops at its ends which limit the movement of the toggles when the brake is released and against which the toggles are drawn by said spring, and a support to which the yoke is rigidly connected and which holds the inner curved surface of the yoke away from the drum and over the ends of the band.

4. A brake, comprising a drum, a band encircling it, pivot plates secured to the opposite ends of the band, lugs on the plates, toggle levers pivotally connected with said lugs, an operating lever connected with the toggles, a spring for moving the toggles to release position, and a stationary fixed yoke inclosing the toggles bearing on opposite ends of the band for holding them close to the periphery of the drum and which has stops against which said lugs are pressed by the spring when the brake is released.

5. A brake, comprising a drum, a band encircling it, plates attached to opposite ends of the band, lugs on the plates, toggle levers pivotally connected with said lugs, an operating lever for the toggles, a spring for moving the operating lever to release position, and a yoke inclosing the toggle levers which is open at top and bottom and is provided at its ends with cross pieces against which the spring draws said lugs when the brake is released.

6. A brake, comprising a drum, a band encircling it, plates attached to opposite ends of the band, lugs on the plates having overhanging side portions, toggle levers pivotally connected with the lugs, means for operating the toggle levers, and a yoke inclosing the toggle levers having flanges extending beneath the overhanging portions of the lugs.

7. A brake, comprising a drum, a band encircling it, toggle levers connected with opposite ends of the band, means for operating the toggle levers, a stationary spider arm, a spring normally holding the toggle levers in release position, and a yoke rigidly connected with the spider arm having flanges pressing against the ends of the band and holding them close to the periphery of the drum and having also stops for limiting the movement of the toggle levers to release position.

In testimony whereof, I have hereunto subscribed my name.

FRANK O'BRIEN.

Witnesses:

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C. L. HALLADAY.