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The principal objects of the invention are to provide a coaster brake in which the braking effect will be greatly amplified and the parts will remain effective to maintain the maximum efficiency for an extraordinarily long period and will not be subject to constant repair and adjustment.

The principal feature of the invention consists in the novel construction of the brake sleeve of a uniform cross section, which will expand uniformly throughout its circumference to engage the inner surface of the wheel hub, and in the novel construction and arrangement of wedging means for expanding the sleeve whereby a lateral pressure is applied uniformly from end to end thereof.

In the accompanying Drawings, Figure 1 is a plan section of a hub showing the interior parts in elevation and particularly showing my improved construction of wedging means for expanding the brake sleeve.

Figure 2 is a longitudinal, mid-sectional view of a brake as illustrated in Figure 1, the section being through the line 2-2 of Figure 1.

Figure 3 is a cross section of the brake hub taken through the line 3-3 of Figure 1.

In the manufacture of coaster brakes for bicycles, it has been the practice to form the brake sleeve with a slot cut therethrough from end to end and provided with bevelled ends to be engaged by a long tapering wedge and it has been necessary to cut a longitudinal slot part way

through the metal of the sleeve diametrically opposite to the bevelled wedge slot to ensure sufficient flexibility, but the result of such practice has been that the sleeve flexes along the weakened line of the metal which results in the sleeve acting as a pair of substantially rigid arc-shaped shoes, which present only a small area of braking surface to the inner surface of the hub.

In the construction herein shown, the hub 1 is of the usual form having mounted therein the anchor block 2, which has an anchor lug 3 extending into the parallel sided end of the longitudinal slot 4 of the flexible brake sleeve 5, said lug having one side formed with a longitudinally bevelled edge 6.

The sleeve 5 is preferably of bronze and has spirally formed ~~oil~~ grooves 7 cut in its periphery. The end of the slot 4 of the sleeve opposite to that engaging the anchor block has the corner 8 bevelled longitudinally to engage the correspondingly longitudinally bevelled edge 9 of the wedge block 10.

The other longitudinal edge 11 of the wedge block 10 is preferably bevelled at the opposite angle to the edge 9 and engages a correspondingly bevelled edge 12 of a wedge block 13, which is formed with a bevelled edge 14 bevelled to correspond with the bevelled edge 6 of the anchor block lug 3. The third side of the wedge block 13 extends parallel with and snugly engages the straight longitudinal edge 15 of the brake sleeve 5.

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The base 16 of the wedge block 10 abuts the annular flange 17 on the block 17', which is slidably and non-rotatably mounted on the axle. This block is formed with bevelled teeth on the end, which are engaged by correspondingly bevelled teeth on the adjacent end of the sleeve 18, which is threaded on the spirally threaded sleeve 19, upon which the driving sprocket 20 is secured.

The sleeve 18 is formed with bevelled teeth 21 at the end opposite to that engaging the block 17', which are adapted to engage the bevelled teeth of a ring 22 rigidly secured in the hub, the bevel of the teeth at opposite ends being arranged in opposite directions.

The construction of the block 17', the toothed sleeve 18 and the threaded sprocket sleeve 19 is old and of well known and common construction and it is considered that the detailed construction and operation thereof need not be described, the present invention resting in the novel construction and arrangement of the brake sleeve and its operating parts, suffice it to say, that when the sprocket is driven forwardly, the sleeve 18 is drawn into driving engagement with the rigid toothed ring in the hub, and when back pressure is applied to the sprocket, the spiral on the sprocket sleeve drives the toothed sleeve 18 into engagement with the slidable block 17' and the annular flange 17 thereof forces the wedge 10 against the bevelled corner 8 of the brake sleeve 5 and against the

bevelled edge 12 of the wedge block 13. The end pressure against the wedge block 13 forces its opposite bevelled edge 14 into sliding contact with bevelled edge 6 of the anchor block, which results in the block 13 being displaced in a circumferential direction, so that its longitudinal straight edge presses uniformly against the straight edge 15 of the brake sleeve 5. A

The pressure applied to the straight ^{edge} ~~end~~ of the slotted brake sleeve results in a uniform expansion of the sleeve around its circumference, and the entire peripheral surface thereof moves into braking engagement with the inner wall of the hub 1, thereby applying an extraordinary braking force.

The uniform expansion of the brake sleeve 5 ensures uniform wear and therefore long life and great efficiency in the brake.

WHAT I CLAIM AS MY INVENTION IS:-

1. In a coaster brake the combination with the longitudinally slotted brake sleeve, of means for applying an expanding pressure substantially uniformly throughout the length of the sleeve, said means including a pair of wedge members having wedging co-operation with each other and with the slotted brake sleeve in the curved plane of said sleeve. A

2. In a coaster brake the combination with the longitudinally slotted brake sleeve, of a floating wedge member engaging one of the longitudinal edges of the slot, and wedging means arranged at one end of said slot to engage said floating wedge to force it against the sleeve edge with substantially uniform pressure from end to end.

3. A coaster brake having a brake sleeve slotted from end to end, one edge of the slot being parallel with the axis of the sleeve, a triangular wedge having one edge abutting the axially parallel edge of the sleeve, bevelled members extending into said slot at either end engaging the oppositely bevelled edges of said triangular wedge, and means for applying an endwise pressure longitudinally of said sleeve slot against said bevelled members to effect the lateral displacement of the triangular wedge thereby expanding said sleeve substantially uniformly from end to end.

4. A coaster brake having an anchor block formed with a sleeve-holding lug having a bevelled edge, a brake sleeve having a longitudinal slot formed with parallel

engaging said lug, a floating triangular wedge having one edge engaging one of the parallel sides of said sleeve slot and a bevelled edge engaging the bevelled edge of said lug, a longitudinally movable wedge having one edge engaging the other bevelled edge of said floating wedge and its other edge engaging the side of the sleeve slot opposite to that engaged by the floating wedge, and means for longitudinally displacing the latter wedge to force the floating wedge in expanding contact with the slotted sleeve.

5. In a coaster brake, a brake sleeve slotted longitudinally and having the sides of said slot parallel for the major part of the length of the sleeve, one edge having a portion thereof bevelled at one end, an anchor block having a lug fitting between the parallel sides of the slot in said sleeve, said lug having a bevelled surface adjacent to the unbevelled edge of said sleeve, a floating wedge having one side engaging the unbevelled edge of the sleeve and one bevelled edge engaging the bevelled edge of the anchor lug, a triangular wedge having one bevelled side engaging the third side of said floating wedge and the adjacent bevelled side engaging the bevelled edge portion of said sleeve, and means engaging the base of said triangular wedge to force it endwise of said slot.

6. In a coaster brake, a brake sleeve of uniform cross section having a slot extending from end to end, said slot having longitudinal parallel walls, one of which

has a bevelled portion, an anchor block having a lug extending between and engaging the parallel sides of said slot in sleeve-positioning contact and having a bevelled surface at one side, a floating wedge engaging the unbevelled side of said sleeve slot and having one bevelled end engaging the bevelled surface of the anchor lug, and a wedge engaging the bevelled edge portion of the sleeve slot and the third edge of the floating wedge.

7. In a coaster brake the combination with the longitudinally slotted brake sleeve, of means for applying an expanding pressure substantially uniformly throughout the length of the sleeve, said means including a pair of co-operatively engaging wedge members, one of said wedge members engaging one side only of the sleeve slot in extended pressure contact and the other wedge member engaging the other side of the sleeve slot in wedging contact.

8. In a coaster brake the combination with the longitudinally slotted brake sleeve, of means for applying an expanding pressure substantially uniformly throughout the length of the sleeve, said means including a floating wedge member accommodated in said sleeve slot in longitudinal engagement with one side of the slot, and means for simultaneously subjecting said wedge member to a double wedging thrust from opposite ends thereof to force the same substantially uniformly against the engaging side of the sleeve slot.

9. In a coaster brake the combination with the longitudinally slotted brake sleeve, of means for applying an expanding pressure substantially uniformly throughout the length of the sleeve, said means including an anchor block for the sleeve presenting a surface forming with one side of the sleeve slot a converging wedge-receiving pocket, a wedge member extending into said pocket and presenting a surface beyond said pocket forming with the other side of said sleeve slot a second converging wedge receiving pocket, and a second wedge member extending into said second-mentioned pocket.

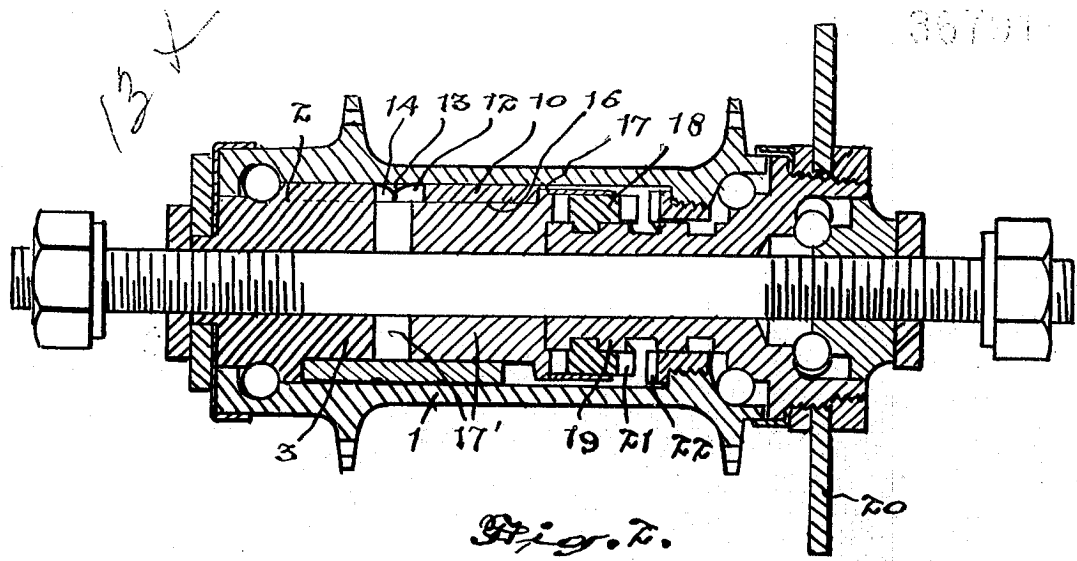


Fig. 2.

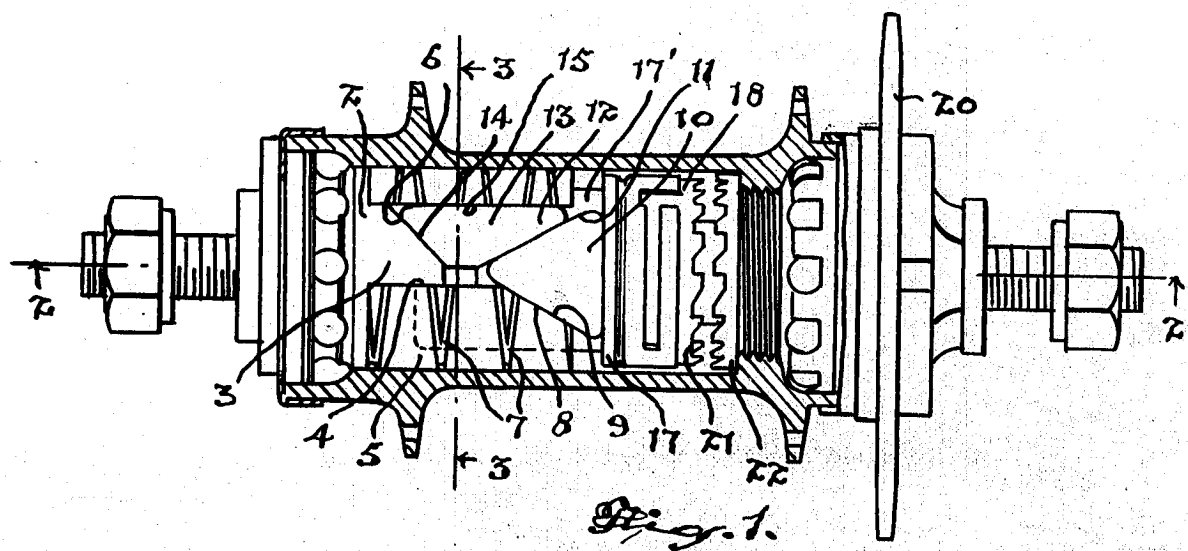


Fig. 1.

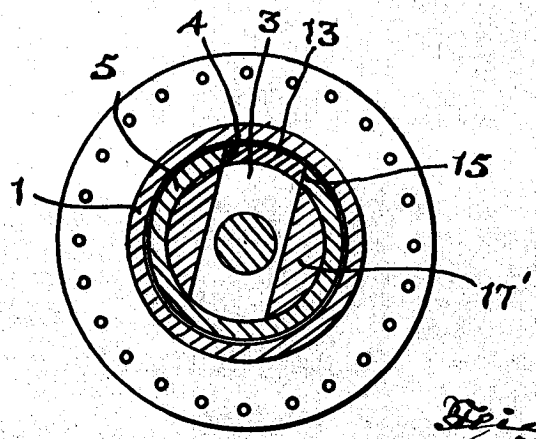


Fig. 3.

Certified to be the drawings referred to in the specification herewith annexed.

Toronto, August 7th 1936.

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 by *H. J. Denison*
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