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G. J. THOMAS

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BRAKE

Filed March 25, 1929

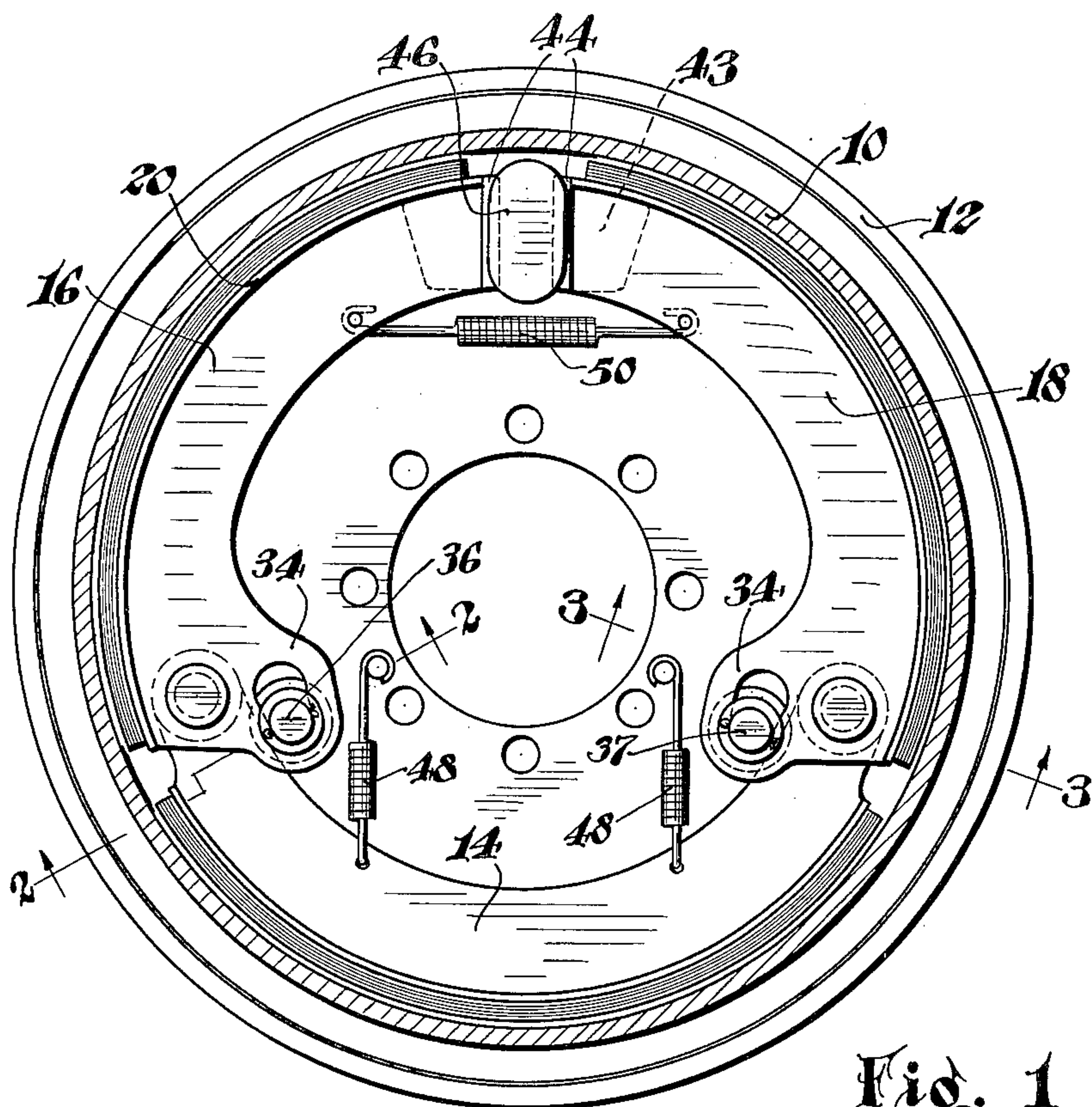


Fig. 1

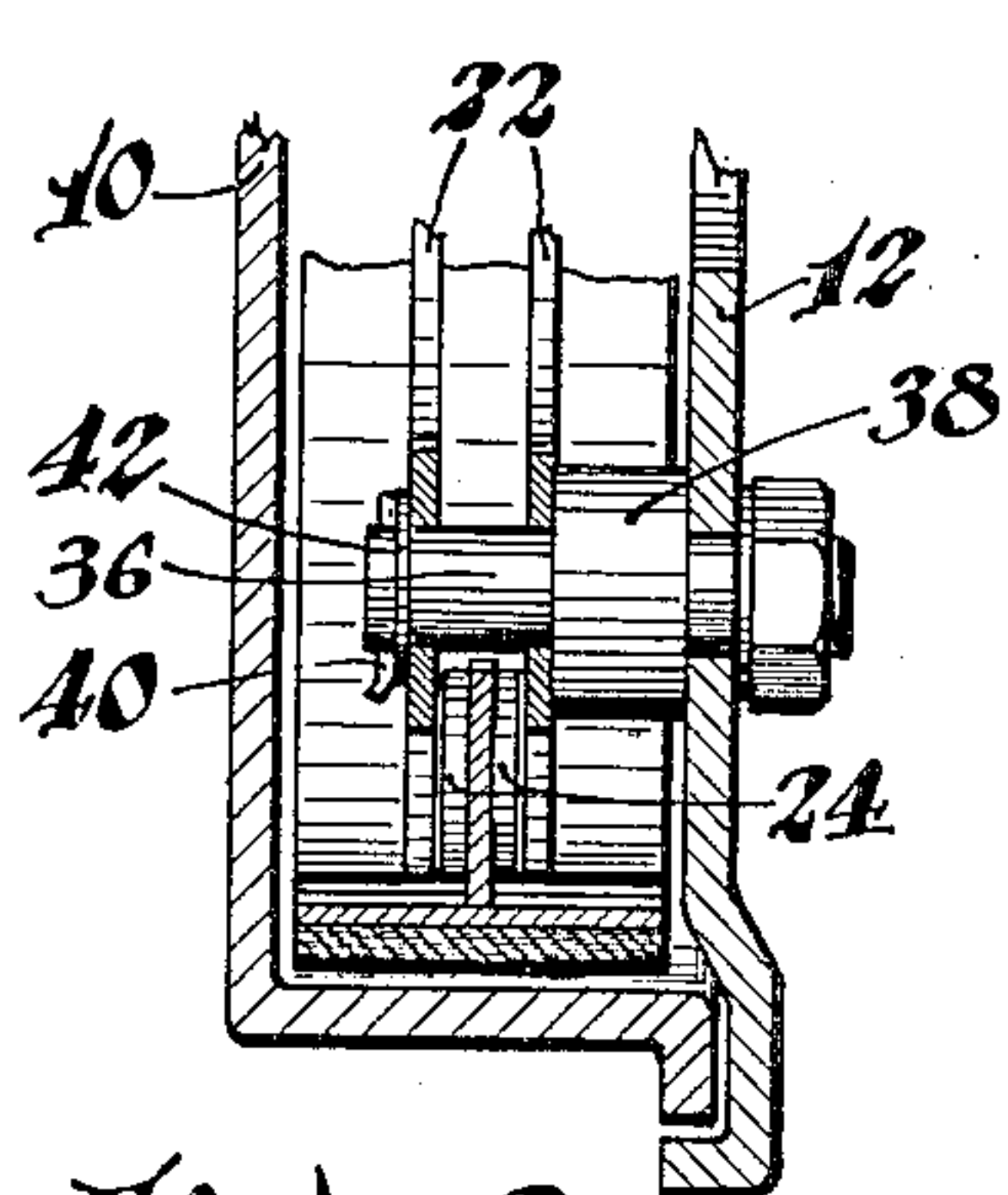


Fig. 2

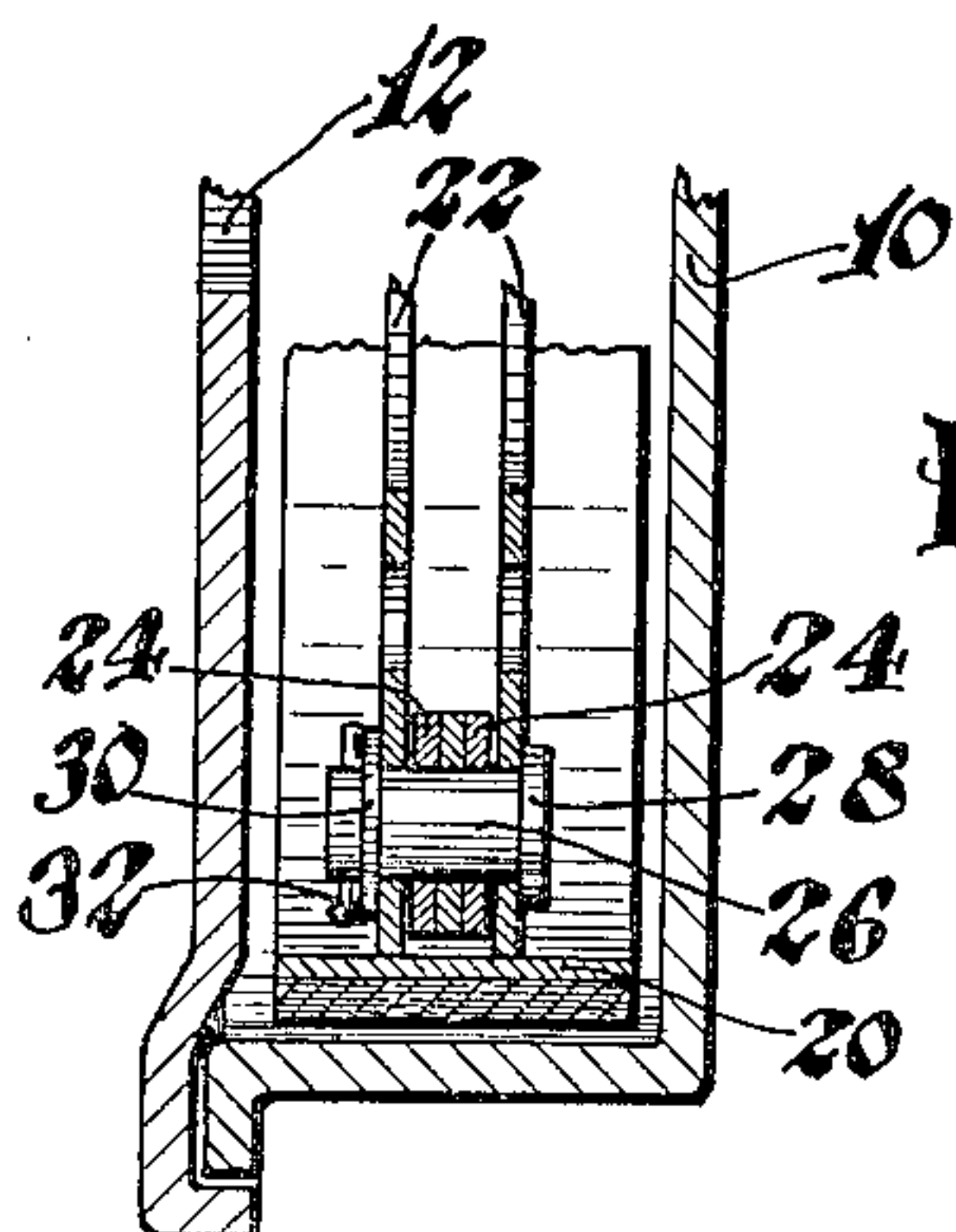


Fig. 3

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BRAKE

Application filed March 25, 1929. Serial No. 349,744.

This invention relates to brakes, and is illustrated as embodied in an internal expanding brake for an automobile. An object of the invention is to provide a simple but powerful brake, preferably having a servo action in both directions of drum rotation and which can be manufactured economically.

An important feature of the invention resides in so constructing the three shoes and their connections one with another that the torque reaction of the brake in either direction of drum rotation is taken by an anchor member which is placed in a condition of tension. In the preferred embodiment of my invention, anchored servo shoes serve to actuate a secondary shoe in either direction of drum rotation, which secondary shoe is connected, as by floating pivots, with said anchored servo shoes. The floating pivots are purposely placed beyond the fixed anchors, that is, circumferentially toward the applying means so that with the anchoring of two of the shoes the third or substantially inactive servo shoe is, at its end, placed in a condition of tension while performing its anchoring function.

Various other desirable features of construction and combinations of parts will be apparent, to those skilled in this art, from the following description of the illustrated embodiment shown in the accompanying drawing, in which:

Figure 1 is a vertical section through the brake, just inside the head of the brake drum, showing the brake shoes in side elevation; and

Figures 2 and 3 are sections taken on the lines 2—2 and 3—3 of Figure 1 showing respectively the anchor and floating pivot in detail.

The brake includes a rotatable drum 10, at the open side of which is a support such as a backing plate 12, and within which is arranged the friction means of the brake. The friction means preferably includes a central T-sectioned rigid shoe 14 pivoted at its rounded ends to servo shoes 16 and 18 which are identical and therefore interchangeable.

Each servo shoe is preferably fabricated

from steel stampings to provide a rim 20 and spaced parallel web members 22, the latter straddling at their inner ends the single web of the secondary or intermediate shoe 14. Shoe 14 may be provided with spacing washers 24 on either side of its web and a pivot pin 26 is passed through co-linear openings in the overlapped shoes and washers, said pin being headed at 28 on one end and provided with a securing washer 30 and cotter pin 32 on its other end, thus completing the floating pivot.

The webs of each servo shoe 16 and 18 are constructed to provide radially extending ears 34 which may be slotted to accommodate anchor posts or pins 36 and 37 detachably secured to the backing plate 12. Each post 36 and 37 is preferably provided with an enlargement or collar 38 for sliding contact with the shoes and cotter pins 40 and washers 42 complete the anchorage assembly.

T-shaped thrust plates 44 have their tail pieces 43 telescoped within the webs 22 of each servo shoe, their thrust faces being contacted by a two-lobed cam 46. Vertically arranged springs 48 and a horizontal spring 50 function to return the shoes to their inactive position upon release of the cam applying means.

With revolution of the cam, shoes 16 and 18 are spread apart and with the brake drum rotating counter-clockwise shoe 16 under the wiping action of the rotating drum, augmented by the cam pressure, serves to apply shoe 14 which anchors, through the intermediary of the floating pivot and shoe 18, on the fixed anchor post 37. That section of shoe 18 between the floating pivot and the anchor post is placed in tension during this operation.

During the applying action shoe 16 fulcrums about anchor post 36 and functions to apply shoe 14 at the floating pivot. With the drum rotating clockwise the action is the same as described for counter-clockwise movement and with either movement a servo shoe functions to operate the self-energizing intermediate shoe.

This construction has the advantage of

insuring a more even distribution of wear on the secondary shoe lining, this being due to the practically uniform clearance in released position, which uniform clearance is made possible by virtue of the lever action of the shoe 18 in pulling the shoe 14 away from the drum at the floating pivot, the shoe 18 fulcruming on the fixed anchor 37.

While but one embodiment of my invention has been described in detail, it is not my intention to limit the scope of the invention to that particular embodiment, or otherwise than by the terms of the appended claims.

I claim:

1. A brake comprising, a drum, a friction element including a plurality of shoes engageable with the drum and anchoring on a tension member forming an integral part of one of the shoes when the drum is turning in one direction and on a second tension member forming an integral part of another shoe when the drum is turning in the other direction.

2. A brake comprising a support, spaced anchors on the support, a plurality of pivotally connected friction elements and extensions on two of the friction elements adjacent the pivotal connections having slidable engagement with the anchors.

In testimony whereof, I have hereunto signed my name.

GEORGE JOSEPH THOMAS.

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