C. BROWNING, JR.

FLANGE TESTER.

APPLICATION FILED DEC. 20, 1909.

1,037,857.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

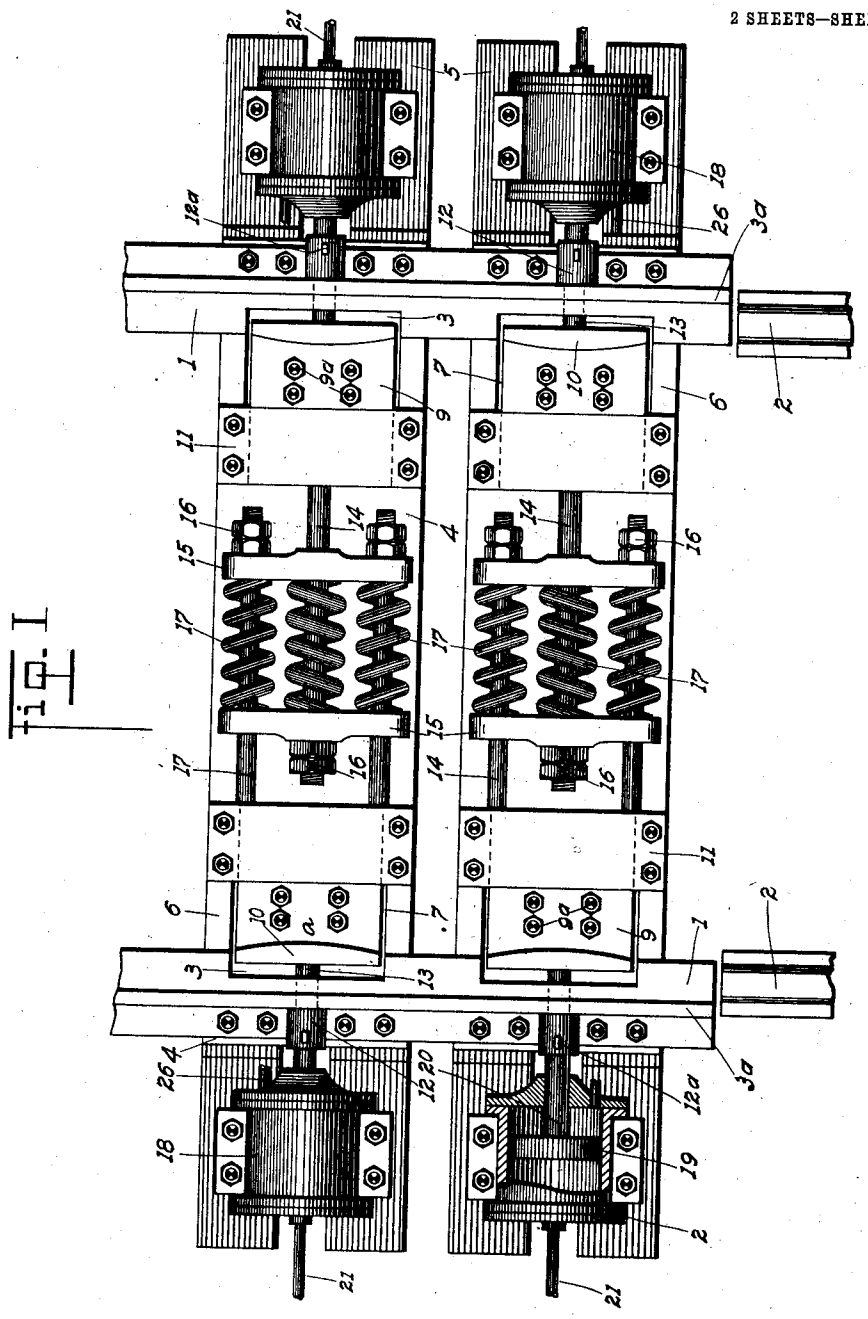

Fig. I

Witnesses

Frank H. Carter

Inventor

Charles Browning Jr:

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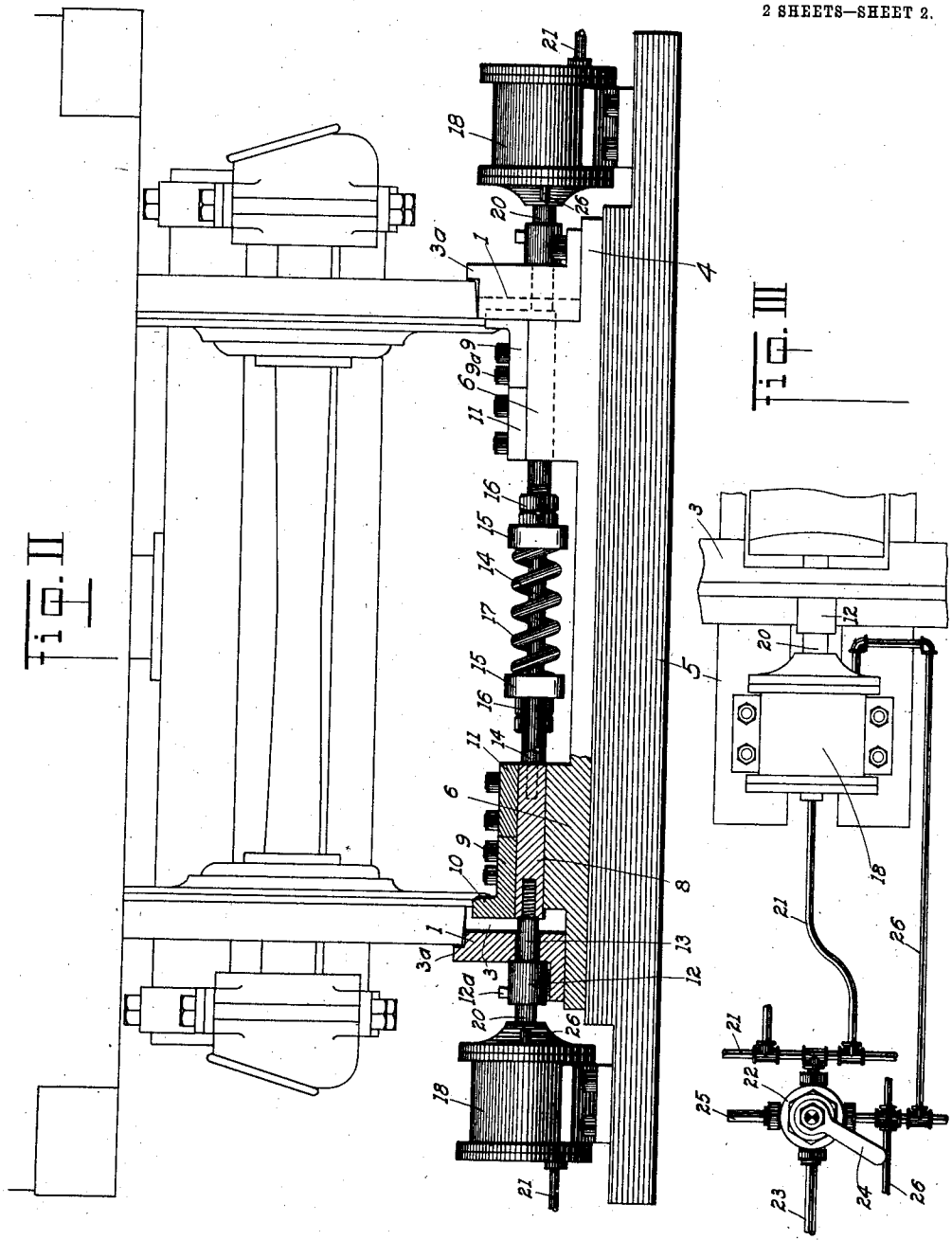

Fig. II

Fig. III

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES BROWNING, JR., OF SACRAMENTO, CALIFORNIA.

FLANGE-TESTER.

1,037,857. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed December 20, 1909. Serial No. 534,014.

To all whom it may concern:

Be it known that I, CHARLES BROWNING, Jr., a citizen of the United States, residing at Sacramento, in the county of Sacramento and the State of California, have invented certain new and useful Improvements in Flange-Testers; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in means for detecting worn or defective flanges of car or similar wheels having flanges, the object of the invention being to produce a means of locating defective wheels by subjecting the flanges at several points in the circumference of each wheel to the pressure or thrust that results in failure of defective wheels in service when such pressure is brought to bear under coördinate conditions of curve of track, load and speed.

By operation of my device which is hereinafter described, defective wheels may be located under serveillance of car inspector on straight and level tracks at moderate speed and at time and place convenient for replacement of defective wheels with the new.

My device herein referred to is designed to efficiently locate wheels with hidden defects, such as cracks or seams at root of flange that dangerously weaken the flange and yet are invisible on the most careful inspection. It is designed to locate any defect which leads to failure, wrecks or derailment in service when pressure is brought to bear against the flanges similar to that to which they are subjected in my device.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a top plan view of the device. Fig. 2 is an end view of the same partly in section. Fig. 3 is a detached view of a fluid pressure cylinder and connections.

Referring now more particularly to the characters of reference on the drawings 1 designates rails adapted to be in direct alinement with the rails 2 of the usual railway at such intermediate points in such railway as is desired to install my testing mechanism. These rails 1 are stronger and wider than the usual rails 2 and are especially designed and adapted to the hereinafter described operation and are provided with vertical transverse recesses or slots 3, and an outer upwardly projecting guard rail 3^a to maintain the wheels in proper position on the rails 1 during the operation of the device. Said rails 1 are bolted or otherwise secured to bed plates 4 mounted on ties or sleepers 5, such bed plates 4 having upwardly projecting blocks 6 provided with slots 7 acting as guides for sliding blocks 8 carrying removable plates 9 having upwardly projecting curved flanges 10 movable in the slots 2 having their curved portions "*a*" normally projecting beyond the inner edge of said rails 1.

11 are yokes bolted across the tops of the blocks 8 to maintain the same in position and said yokes 11 also act as a stop to limit the movement of the members 9, such motion being also limited by collars 12 on rods 13 secured in said blocks 8 and projecting through the rails 1, such collars bearing against the outer sides of said rails 1. On the inner sides of said blocks 8 are rods 14 projecting through spaced bars 15 and having retaining nuts 16 on their outer ends, there being springs 17 mounted on said rods 14 and interposed between said bars 15, which springs maintain the parts in normal position and particularly the portion "*a*" projecting beyond the inner line of the rails 1, such springs 17 having a tension sufficient to give a flange of a wheel passing over said rails 1 a frictional pressure and jar in encountering the portion "*a*" and driving backward the flanges 10 as such wheels would receive in actual service and thus should there be any weak places due to inherent defects or wear, the flange will break at that point and hence the defective wheel be found and taken off before the train leaves terminal or point where device is located, the guard rails 3^a maintaining the wheels in proper position on the rails. Similarly and in conjunction with or independently of the said springs 17 may be employed fluid pressure cylinders 18 having pistons 19 having rods 20 alined with the rods 13, and projecting into and being

keyed to the collars 12 by keys 12ª, whereby fluid pressure may be admitted to said cylinders 18 through pipes 21 against said rods 13 to perform a similar operation as said springs perform as above described, the flanges 10 and blocks 9 moving through the slot 2 in both instances. Such flanges 10 as shown in the drawings are lower than the top of the rails 1 hence they are free from the weight of passing cars, and hence are free to readily perform their functions. These flanges 10 sustain practically all the wear of the device and hence when worn can be readily removed by means of bolts 9ª and replaced.

The pressure to the front of the pistons 19 is as described, admitted to the cylinders through pipes 21 connected with an ordinary four way valve 22 supplied from the main reservoir pipe 23. Now to release this pressure and turn the pressure to the rear of the pistons 19 to hold the flanges 10 within the recesses 3 and thus leave the track clear if it is so desired for any purpose the handle 24 of the valve 22 is operated relieving the pressure from the front of the pistons to the atmosphere through a pipe 25 and admitting the pressure to the rear of the pistons 19 through pipes 26, and vice versa to again admit pressure to the front of the cylinder.

While this specification describes the apparatus as testing car wheels and flanges, still in practice it can be adapted to any testing purpose desired.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils all the objects of the invention as set forth herein, viz; an apparatus which will test and detect defects in wheels in a similar manner as they are practically tested in service.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A flange tester comprising a combination with the rails of a railway, of independent rail members set in alinement with the rails of said railway, said independent rail members having recesses cut in their inner edges, spring pressed blocks movable in said recesses, the flanges of wheels running over said rails being adapted to strike said blocks, and guard flanges on the outer edges of said independent rail members adapted to hold such wheels in proper position as they ride over said independent rail members as described.

2. A device of the character described comprising a railway, independent rail members disposed in direct alinement with the rails of said railway and provided with transverse slots, spring pressed blocks movable in said recesses, rods on said blocks projecting through said independent rail members, collars on the outer ends of said rods, rods projecting into said collars and removably keyed thereto, and a fluid pressure means connected with the last named rods as described.

3. A device of the character described comprising a railway, rails disposed in direct alinement with the rails of said railway, such last named rails being wider than the rails of the railway and provided with transverse slots, upwardly projecting guard flanges on the outer edges of said last named rails, sliding spring pressed blocks, flanges on said blocks, said flanges and said blocks being movable in said slots, rods on said blocks projecting through said last named rails and having collars on their outer ends, rods projecting into said collars and removably keyed thereto, and a fluid pressure means connected with said last named rods as described.

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

CHARLES BROWNING, Jr.

Witnesses:

Percy S. Webster,

Joshua B. Webster.