

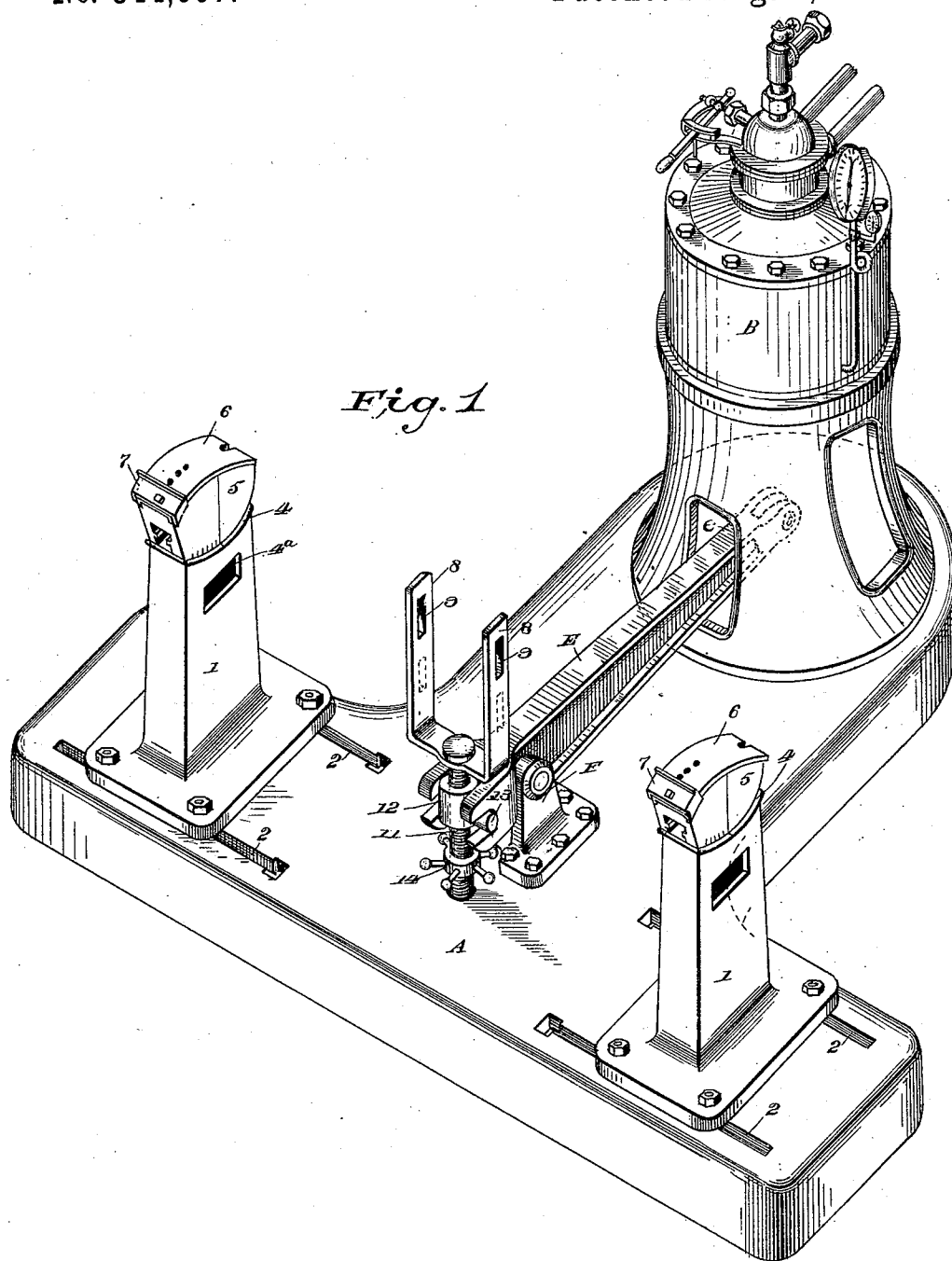
(No Model.)

3 Sheets—Sheet 1.

H. B. ROBISCHUNG.
TESTING MACHINE.

No. 544,007.

Patented Aug. 6, 1895.



Witnesses:
Wm. E. Dyer.
D. Darby.

Inventor.
Henry B. Robischung
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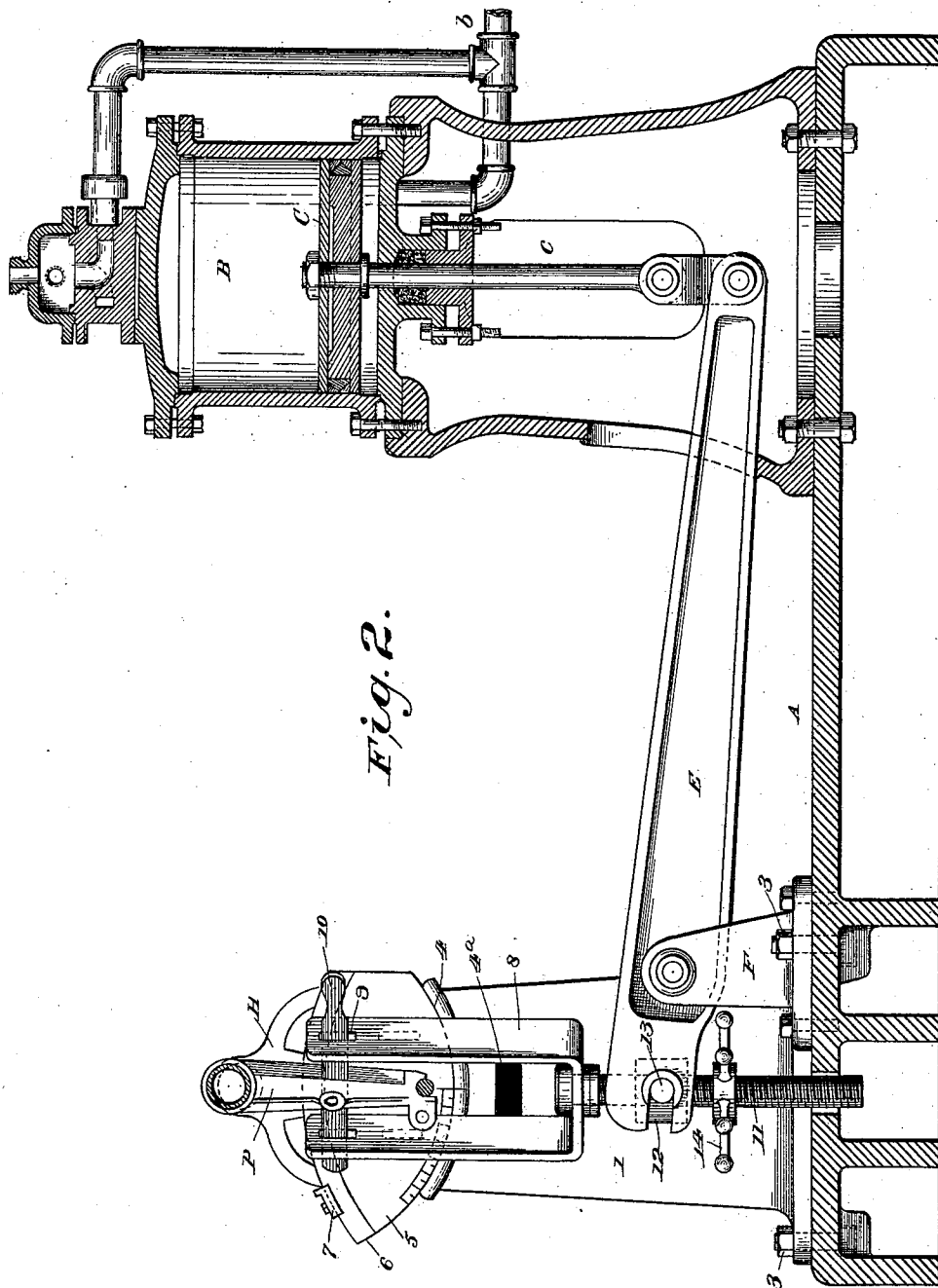
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3 Sheets—Sheet 2.

H. B. ROBISCHUNG.
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(No Model.)

H. B. ROBISCHUNG.
TESTING MACHINE.

3 Sheets—Sheet 3.

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Fig. 3.

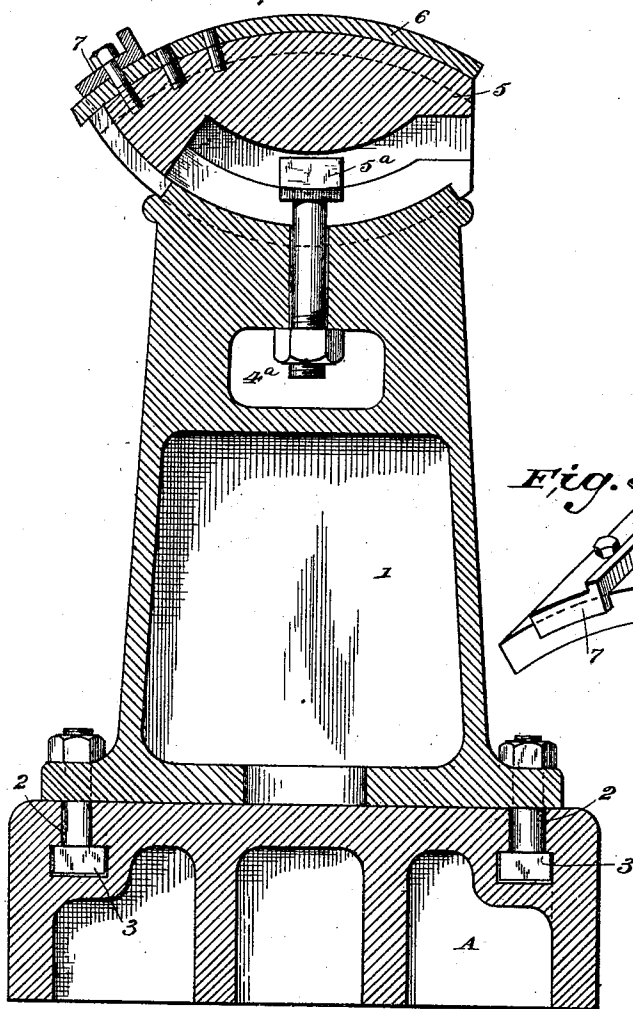


Fig. 4.

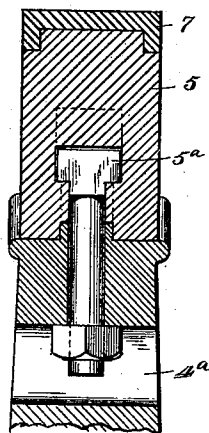


Fig. 5.

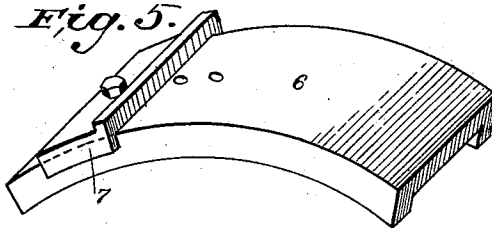
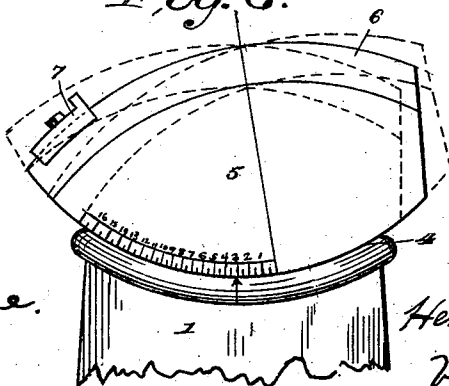


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY B. ROBISCHUNG, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE CHICAGO RAILWAY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS.

TESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 544,007, dated August 6, 1895.

Application filed February 13, 1894. Serial No. 500,066. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. ROBISCHUNG, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Testing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a testing-machine embodying my invention. Fig. 2 is a vertical section taken centrally of the steam-cylinder and a little to one side of the lever. Fig. 3 is a vertical central section of one of the pedestals and adjusting-blocks. Fig. 4 is a cross-section through the center of the upper part of the pedestal and adjusting-block, taken at right angles to that of Fig. 3. Fig. 5 is a perspective view of the renewable bearing-face of the adjusting-block. Fig. 6 is a side elevation of the upper part of a pedestal and an adjusting-block, the dotted lines indicating different adjustments of the block.

Like symbols refer to like parts wherever they occur.

My invention relates generally to testing-machines, and, as will hereinafter appear, contains several features and combinations of value in any testing-machine; but in so far as it has been especially designed for testing trussed brake-beams it also contains features particularly applicable thereto, and its operation will be described in relation to brake-beams.

Car-wheels may be within the Master Car-Builders' standard and yet vary in diameter anywhere from twenty-six (26") to forty-two (42") inches in diameter, so that a horizontal plane parallel with the track and intersecting the axle may vary from thirteen (13") to twenty-one (21") inches above the track, according to the diameter of the wheels used. In hanging brake-beams different railroads require the beam to be hung at different heights above the track. Consequently if the post of a trussed brake-beam is on the radial line of the circle to which the face of the brake-shoe conforms the post will only be parallel to the track when the beam is hung at the height of the axle. At any other height

the post will stand at an inclination to the track, so that in use the beam will be subjected to a torsional strain when the braking power is applied.

In the construction of brake-beams the brake-head is, or should be, so set with relation to the post of the trussed structure that the post will, when the beam is hung, stand parallel to the track and in the plane of applied power. This position of the brake-head to the post is termed its "throw," and will depend on the diameter of the wheel with which the beam is to be used and the distance above the track at which the beam is to hang. Therefore, in the construction of any testing-machine which is to be used for testing brake-beams provision should be made for such adjustments thereof as may be required from time to time in order to subject the beam tested to exactly the same strains and under like conditions as will arise in the subsequent use of the beam.

The object of my invention is to meet the foregoing requirements in a testing-machine; and to that end the main feature of the invention embraces the combination, with the power-lever or power mechanism, of a plurality of pedestals having adjusting blocks or bearings, said blocks or bearings parallel with each other and at an angle to the plane of the pedestals and the power mechanism arranged to operate between the pedestals, whereby in testing brake-beams or analogous articles the supports may be adjusted to the throw of the heads and the power applied in the line of the strut or post.

A second feature embraces the combination, with the power mechanism and a plurality of pedestals having adjusting-blocks arranged parallel with each other and at an angle to the plane of the pedestals, the power mechanism being arranged to operate between the pedestals, of a swivel-yoke, whereby the testing-machine may be utilized for either right or left hand lever-beams.

A third feature embraces the combination, with the pedestals having adjusting-blocks parallel with each other and at an angle to the plane of the pedestals and interposed power mechanism, of the swivel-yoke and means for vertically adjusting the yoke,

whereby the testing-machine may be utilized for testing brake-beams and analogous articles where the purchase on the article varies—as, for instance, where the fulcrum-pins of different beam-posts are at different distances from the compression member of the beam.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates a suitable bed-plate for the support of the operative parts of the machine; B, a steam-cylinder to which steam is admitted below the piston C by the supply-pipe b, and c the piston-rod, to which is attached the long arm e of power-lever E, said lever pivoted in suitable pillow-blocks F erected on the bed-plate A.

All of the foregoing elements may be of any desired form, or equivalent power mechanism may be employed in the construction of my testing-machine, as, with the exception of the end of the lever and the particular feature and combination with the screw-collar hereinafter pointed out, they are not involved in the present invention.

11 indicate pedestals mounted on the base-plate A by means of parallel slots 2 2 in the base-plate and T-bolts 3 3 which pass through the slots 2 2, thus permitting of the adjustment of the pedestals to and from each other to accommodate brake-beams of different gage or articles of different length. The top of each pedestal is of concave form, as at 4 4, or in the shape of the arc of a circle, and is surmounted by an adjusting-block 5, whose under surface is convex or in the arc of the same circle, so that the adjusting-block may be readily shifted on the pedestal; and block 5 and pedestal 4 are marked with index and scale, (see Fig. 6,) whereby the extent of movement may be determined and accuracy of adjustment secured.

The adjusting-blocks 5, it will be noted, while they are parallel with each other, have each a movement transversely of or at an angle to the plane in which the pedestals are placed, so that the article to be tested may be given that position with relation to the testing power (or weight) which it will maintain when in use or when occupying its destined position.

The block 5 may be adjustably secured to the pedestal 4 by T-slots and T-bolts 5^a, to be manipulated through the slots 4^a in pedestals 4, as indicated in Figs. 3 and 4, or in any other suitable manner, though for sake of stability the construction herein shown is preferred.

The top of adjusting-block 5 is protected against wear by a renewable shoe 6, which may be provided with a stop 7 to prevent the brake-beams from slipping during the testing. If desired, however, this renewable shoe 6 may be dispensed with. The upper surface of adjusting-block 5 (or the shoe 6, if it be used) is

given the convexity of a car-wheel or a like form which will insure the proper bearing for a brake-head, (see H, Fig. 2.)

In the construction chosen for purposes of illustration the upper surface of the pillars 1 and the under surface of adjusting-blocks 5 are formed on the arc of a circle of approximately twelve (12") inches radius; while the upper surface of the adjusting-block 5 is formed on the arc of a circle which corresponds to that of a thirty-three (33") inch car-wheel, plus the thickness of a brake-shoe, or on a radius of approximately seventeen and three-quarter (17 $\frac{3}{4}$ ") inches; and the scale on the side of the adjusting-block 5 is formed with one-sixteenth ($\frac{1}{16}$ ") of an inch division-lines; but said dimensions are here given only for purposes of illustration, and may be varied at the will of the constructor or as dictated by circumstances.

8 indicates a yoke adapted to attach the power mechanism to the article to be tested, said yoke having in its upper ends (or free ends) slots 9 (or a series thereof, if desired) for the reception of a bar 10; and if said bar is for use in testing brake-beams it will have a suitable pin-hole at its middle in order that it may occupy in the beam to be tested the position occupied by the brake-lever when the beam is in service. This yoke 8 is swiveled on an adjusting-screw 11, which adjusting-screw passes down through a threaded collar or nut 12, said nut or collar having journals 13, by means of which it is pivoted on the forked end of power-lever E, or otherwise loosely secured to equivalent power mechanism. Below the nut or collar 12 and keyed or otherwise securely fixed on the adjusting-screw is a wheel 14 for rotating the screw within the nut or collar 12, (and yoke,) so as to increase or diminish the distance between the yoke and power mechanism (or to shorten or lengthen the connection) to accommodate different articles or brake-beams having the brake-lever fulcrum at different distances from the compression member of the beam, and for purposes of convenience said wheel 14 has been provided with knobbed arms so as to be readily operated by the foot of the workman.

The construction being substantially such as hereinbefore specified the devices will operate as follows in testing a trussed brake-beam: The adjusting-blocks 5 are first set to accommodate the throw of the brake-heads on the beam to be tested, which is done by rotating the adjusting-blocks on the pedestals (see Fig. 6) until the position of the scale with relation to the index indicates that the strut or post of the beam will hang vertically, (see H P, Fig. 2.) The brake-beam is then placed in the machine with the brake-heads resting on the adjusting-blocks (or upon the renewable shoes, if shoes are used) and with the strut or post within the swivel-yoke 8. The bar 10 is passed through slots 9 9 of the yoke and through the lever-slot in the post

P of the brake-beam. The screw 11 is rotated by means of wheel 14 to raise or lower the collar or nut 12 and yoke 8 until the pin-hole in bar 10 registers with the fulcrum-pin hole in the post P of the brake-beam, when a fulcrum-pin is inserted in said pin-holes and the bar 10 will occupy the same relations to the brake-beam as will the brake-lever when the beam is in service. Power is then applied to the collar or nut 12, and thence by screw 11, yoke 8, and bar 10 to the brake-beam by means of the lever E or other suitable power mechanism.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a testing machine, the combination with a plurality of pedestals or supports each having an adjusting block, said blocks parallel with each other and at an angle to the plane of the pedestals, of power mechanism arranged to operate between said supports, substantially as and for the purposes specified.

2. In a testing machine, the combination with a plurality of pedestals or supports each having a rotatable adjusting block, said blocks parallel with each other and at an angle to the plane of the pedestals, of power mechanism arranged to operate between said supports, substantially as and for the purposes specified.

3. In a testing machine, the combination with power mechanism, of pedestals or supports provided with movable adjusting blocks having convex upper faces; substantially as and for the purposes specified.

4. In a testing machine, the combination with a plurality of pedestals or supports and adjusting blocks, each of said pedestals and blocks having the one a concave and the other a convex face in juxtaposition, of power mechanism arranged to operate between said pedestals or supports; substantially as and for the purposes specified.

5. In a testing machine, the combination

with power mechanism of pedestals or supports, and adjusting blocks arranged thereon, said pedestals and blocks having the one a concave and the other a convex face in juxtaposition, and the adjusting block having a convex upper surface; substantially as and for the purposes specified.

6. In a testing machine, the combination with a plurality of pedestals each having an adjusting block, of a power mechanism arranged to operate between said pedestals, said power mechanism having a swivel connection for engaging the power mechanism with the article to be operated upon; substantially as and for the purposes specified.

7. In a testing machine, the combination with a plurality of pedestals, each having an adjusting block, of power mechanism arranged to operate between the pedestals, and an adjustable swivel connection for engaging the power mechanism with the article to be operated upon; substantially as and for the purposes specified.

8. In a testing machine, the combination with power mechanism, of pedestals or supports for the article to be operated on, a swivel yoke, and a journaled nut or threaded collar and screw connection between the yoke and power mechanism; substantially as and for the purposes specified.

9. In a testing machine, the combination with a forked lever, of a nut or threaded collar journaled thereon, a screw arranged in said nut or threaded collar, a swiveled connection adapted to hold the article to be operated on, and suitable pedestals or supports for the article to be operated on; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 29th day of January, 1894.

HENRY B. ROBISCHUNG.

Witnesses:

E. B. LEIGH,

E. T. WALKER.