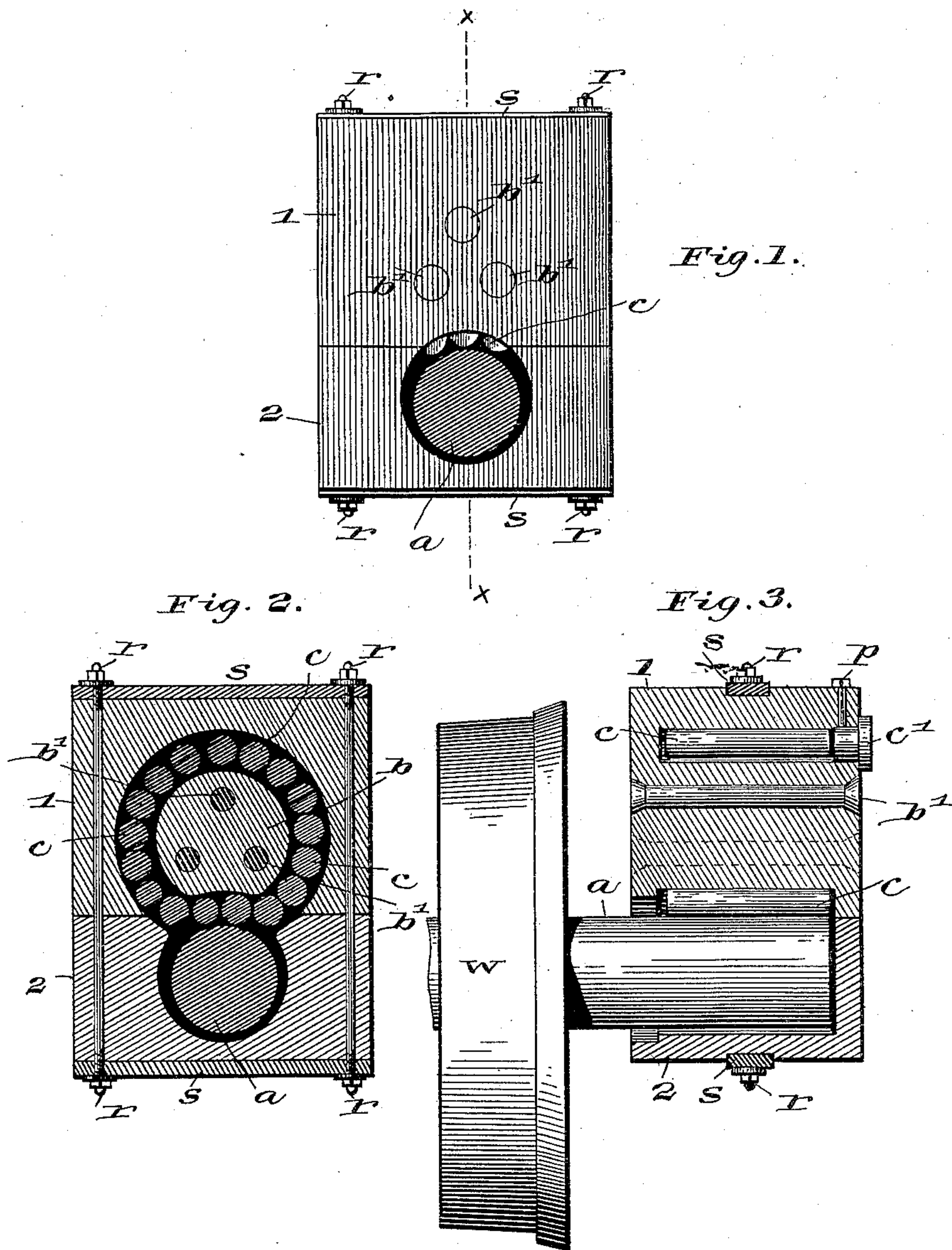


(No Model.)

W. T. TRISSAL.  
CAR AXLE BOXING.

No. 427,640.

Patented May 13, 1890.



WITNESSES:

J. D. Neely,  
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INVENTOR

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BY

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# UNITED STATES PATENT OFFICE.

WILLIAM T. TRISSAL, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF TWO-THIRDS TO MILLARD F. COX, OF SAME PLACE, AND PERRY C. SWIGGETT, OF LEBANON, INDIANA.

## CAR-AXLE BOXING.

SPECIFICATION forming part of Letters Patent No. 427,640, dated May 13, 1890.

Application filed February 3, 1890. Serial No. 339,357. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. TRISSAL, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Car-Axle Boxings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters and figures refer to like parts.

My invention relates to the construction of car-boxings, whereby the axle-opening is formed in the lower half of bisected boxings, instead of in the center, anti-friction rollers being carried in the upper half, forming a bearing upon the top of the axle, the bearing-block being strengthened by transverse bars, as will be understood from the following description.

In the drawings, Figure 1 is an inside view, the axle being in section. Fig. 2 is a cross-section of the boxings on the line of the tie-rods. Fig. 3 is a vertical section of Fig. 1 on the line  $x x$ , Fig. 1.

In detail the boxing consists of a metal casing composed of an upper part 1 and a lower part 2, connected by tie-rods  $r$ . The lower part of the boxing has an opening, into which passes the axle  $a$ ,  $w$  being a car-wheel mounted on the axle behind the boxing. This opening is larger in diameter than the axle, leaving an open space, as shown. The axle therefore has no bearings on the boxing, but only on the anti-friction rollers  $c$ . The upper half of the boxing has a central bearing-block  $b$ , formed integral with its sides, and about this is a circular channel or way to receive small rollers  $c$ , which are inserted through an opening formed in the side of the part 1, which is closed by a cap  $c'$ , this cap being held in place by a small pin  $p$ , as shown in Fig. 3. The lower part of this bearing-block is cut out, forming a concave corresponding with the circular periphery of the axle, and by this arrangement the rollers  $c$  are allowed free passage between the bearing-block and the axle as they travel in the circular channel. The

weight of the car and its load tends to settle the boxing upon the axle, and the weight will therefore be carried upon such of the rollers as are at the bottom and near the concave part of the channel. By this construction and arrangement the strain will be brought upon the sides of the upper half of the boxings at the point of their connection with the bearing-block  $b$ , and in order to prevent it giving away at this point and to strengthen the parts the transverse wrought-iron bars  $b'$  are employed. These bars, preferably formed with flaring heads, are set in the mold and the hot metal for the boxings poured in around them, fixing them firmly in place, so that they cannot be removed. They thus become an integral part of the upper half of the boxings and greatly add to its efficiency and strength in service.  $s$  are ordinary arch-bars or straps for uniting the pairs of boxings used on the two sides of the truck, and need no particular description. As the wheel revolves and the axle  $a$  with it, the bearing of the latter is directly upon the rollers above it, and these are forced along by the movement of the axle, so that only two or three are in contact with the axle at any one time, and these are constantly changed and carried onward, others taking their place, the whole series forming a circuit of travel through the channel or way formed in the upper part 1 of the boxings. It will thus be seen that by my construction no brasses are necessary, no packing of any kind for absorbing and retaining lubricating material, and no notch or shoulder in the axle to prevent the brasses slipping out, and the axle, being located below the center, has its bearing only on the upper two or three cylindrical rollers, which travel unimpededly, changing their place constantly, so that little or no friction or heat is produced, and all the parts move smoothly and easily without danger of disarrangement.

I am aware that anti-friction balls and rollers have been used for bearings of various kinds, and do not broadly claim the same as my invention; but I am not aware that a

boxing has been constructed prior to mine wherein the parts are arranged and disposed and operated in the manner herein described.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. A boxing formed of two parts 1 and 2, having a bearing-block *b* formed in the interior and integral with the upper section, a circular channel-way surrounding such bearing-block, the latter concaved below, and anti-friction rollers *c*, traveling about the periphery of such bearing-block, in combination with the axle *a*, entering an opening in the lower half of the boxing, substantially as shown and described.

2. In a car-boxing, the upper section 1, having a bearing-block *b* formed integral therewith, a circular way about such bearing-block, concaved directly above the axle-opening, the lower boxing-section 2, having an axle-opening and united to the upper part by tie-rods *r*, anti-friction rollers *c*, set in the

circular way about the bearing-block, and an opening above for inserting such rollers, closed by a cap *c'*, all combined substantially as shown and described.

3. A car-boxing composed of sections 1 and 2, united by tie-rods *r*, the upper section having a bearing-block formed in its interior integral therewith, with transverse brace-rods *b'*, secured therein, for strengthening the same, a channel-way about such bearing-block, anti-friction rollers *c*, set therein, and a concave formed in the bearing-block above the axle, whereby the rollers are allowed unimpeded travel between the axle and the bearing-block, all combined substantially as shown and described.

In witness whereof I have hereunto set my hand this 27th day of January, 1890.

WM. T. TRISSAL.

Witnesses:

H. D. NEALY,  
C. P. JACOBS.