(No Model.)

N. HARRIS.

HUB BOX ATTACHMENT.

No. 452,904. Patented May 26, 1891.

Fig. 1.

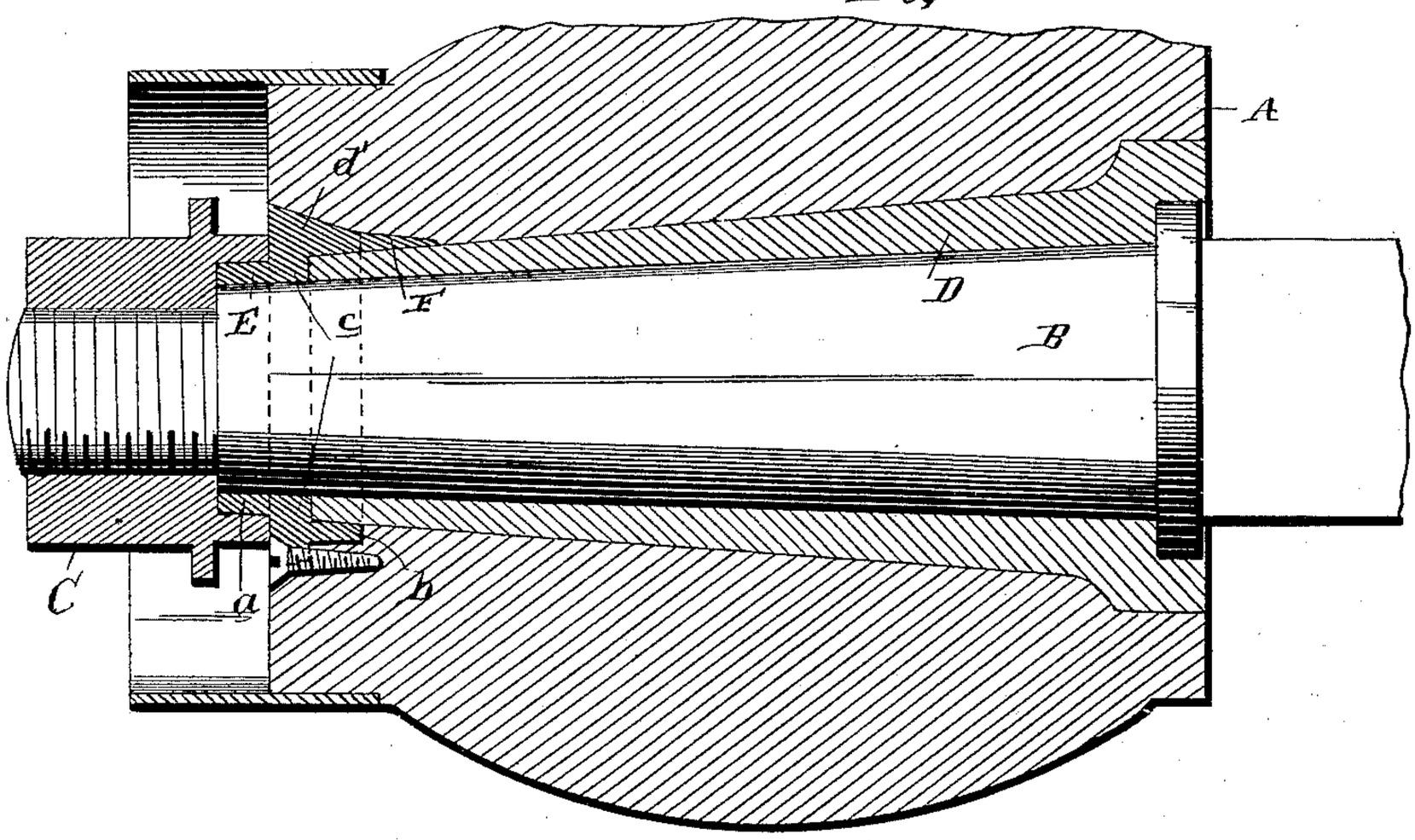


Fig. 2.

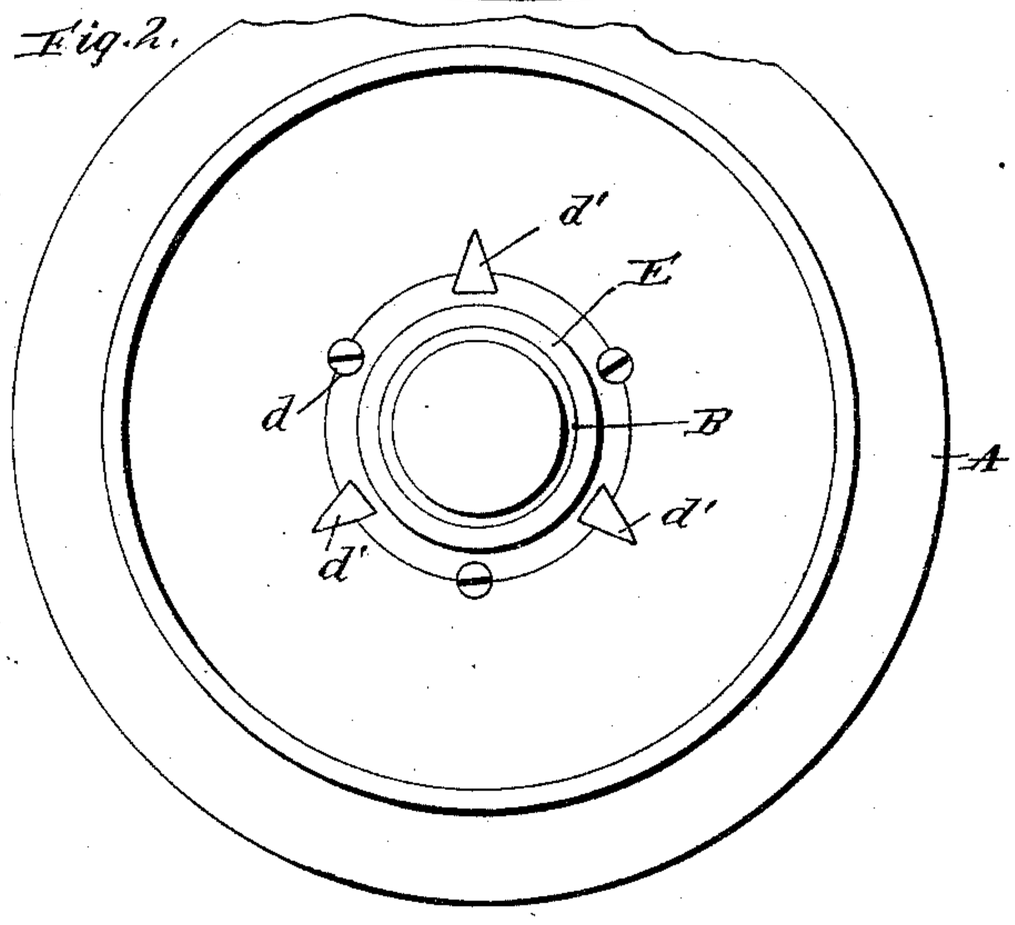
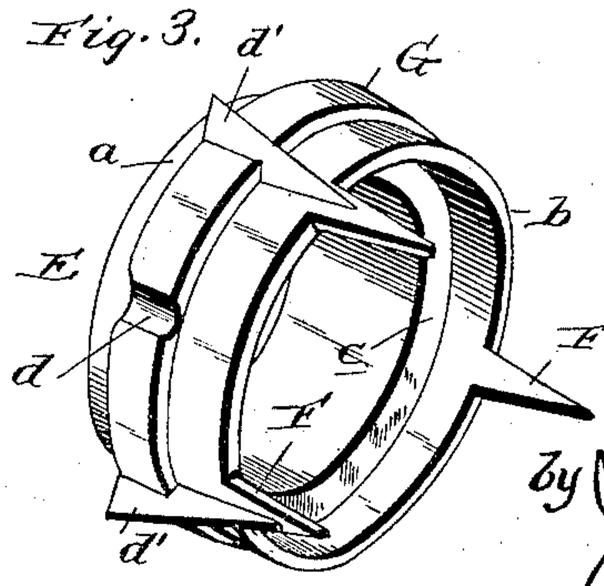


Fig. 3.



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UNITED STATES PATENT OFFICE.

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HUB-BOX ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 452,904, dated May 26, 1891.

Application filed March 4, 1891. Serial No. 383,679. (No model.)

To all whom it may concern:

Be it known that I, NOAH HARRIS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Hub-Box Attachments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a device for prolonging the usefulness of hub-boxes, and is designed to compensate for the wear on the end of the box and fill such space in the hub, so as to give the spindle a full bearing throughout and allow the wheel to turn without any wabbling or uneven movement, which is so common to wheels after but little use.

A further object of the invention is to provide a device for the purposes stated which may be used on any wheel and form a continuation of the box without altering the parts of the wheel-spindle or nut in any manner whatever.

Other objects and advantages will appear from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a longitudinal sectional view of a hub and box with a spindle and nut in position, showing my improvements applied. Fig. 2 is an end view of the hub, showing my improved device in position; and Fig. 3 is a perspective view of the device removed.

Referring by letter to said drawings, A indicates the hub, B the axle-spindle, C the nut, and D the boxing of the hub, all of which may be of any ordinary or approved construction.

E indicates my improved attachment, which consists of a ring or annulus of a diameter to receive the outer end of an axle-spindle. From the body of this device is formed an outwardly-extending annular flange *a*, which is designed to enter the recess usually formed on the inner side of the nut, as shown, and on the inner or opposite side of the body portion, and in necessarily a larger radius or diameter, is an inwardly-directed flange *b*, which is designed to enter the bore of the hub at the outer end thereof and overlap the outer end of the worn box so as to practically form a continuation of the worn boxing in the hub. A shoulder *c* is formed in the device to abut against the outer end of the box, as better shown in Fig. 1 of the drawings.

F indicates lugs or points which are arranged on the flange *b*, and may be cast or formed integral therewith. These lugs, which taper, are designed to enter the hub and be driven therein over the outer worn end of the box until the shoulder *c* has been made to abut against the said end of the hub-box.

G indicates a circumferential flange, which is formed centrally around the device, and is recessed or notched at suitable intervals, as shown at *d*, for the reception of screws or other suitable fastening devices whereby the attachment may be more firmly secured in position in the hub. It is not essential to have the notches, however, nor to employ screws for fastening the device in position, as I find that the lugs which I employ are usually sufficient for the purpose, and therefore do not wish to confine myself to the use of any other means for staying the attachment in the hub.

In addition to the lugs F, I employ auxiliary lugs *d'*, formed above and mainly in rear of the lugs F. These lugs *d'* are also of a tapering form lengthwise and are provided with a longitudinal edge, as shown, which forms cutters and assists in forcing the lugs or points F into the hub to secure the attachment therein. These lugs *d'*, which extend over the flange *b*, also extend across the circumferential flange G and, cutting into the hub, firmly fix the device in position. These devices may be made of various sizes, so as to adapt themselves to boxes which have been worn to a greater or less degree. The attachments are durable and may be manufactured at a very small expense.

After the hub-box has been worn at its outer end one of my attachments may be employed, so as to extend the boxing to its normal or original length by simply driving the lugs into the wood of the hub around the old box until the shoulder *c* has been made to abut the outer end of the box, when the central or body portion of the attachment will

form a continuation of the box, as better shown in Fig. 1 of the drawings.

Having described my invention, what I claim is—

1. As a new article of manufacture, a hub-box attachment comprising a body portion adapted to fill the space in a hub caused by the wear of one end of the box, an inwardly-directed flange to embrace the outer end of the box, outwardly-directed lugs or points adapted to fix the attachment to the hub, and an outwardly-directed flange to enter the recess of an axle-nut, substantially as specified.

2. The improved axle-box attachment described, comprising the body portion having the circumferential flange provided with notches and also with lugs, as the outwardly-directed flange, the inwardly-directed flange, and the lugs on the latter flange, substantially as specified.

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

NOAH HARRIS.

Witnesses:

THOMAS NESOM,

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