

G. B. DURKEE.
Wagon-Axle Boxes.

No. 157,279.

Patented Dec. 1, 1874.

Fig. 1.

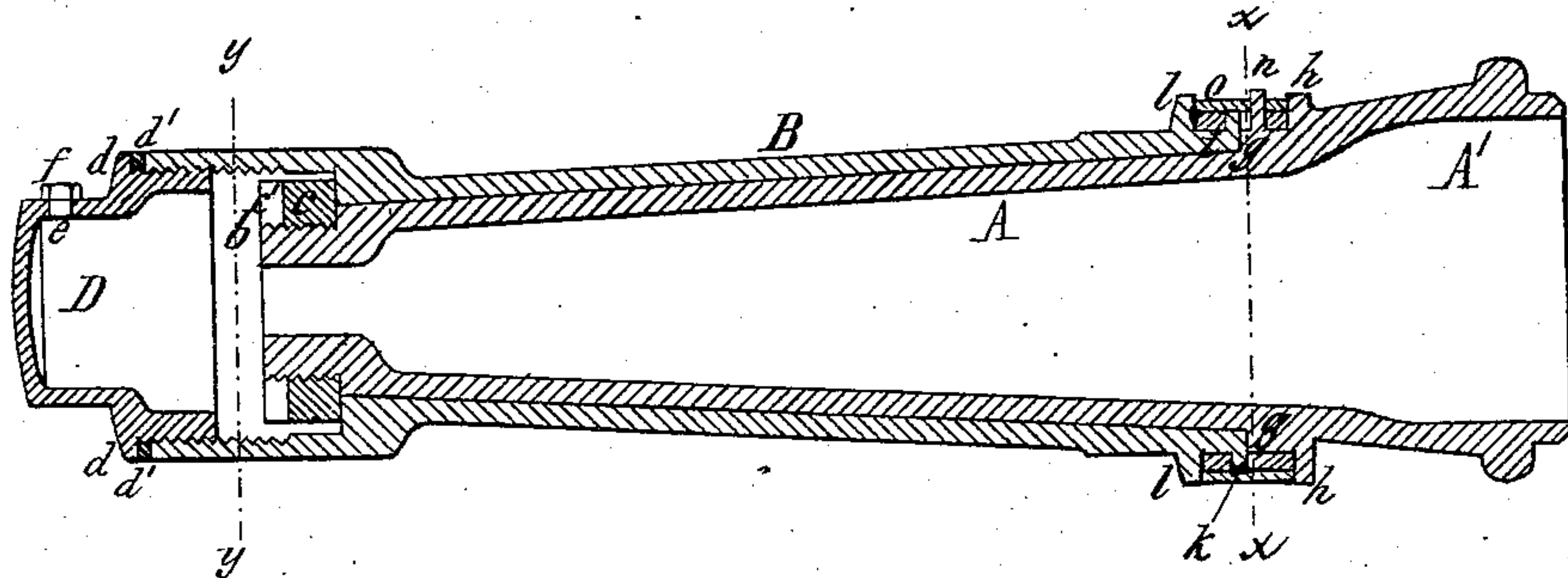


Fig. 2.

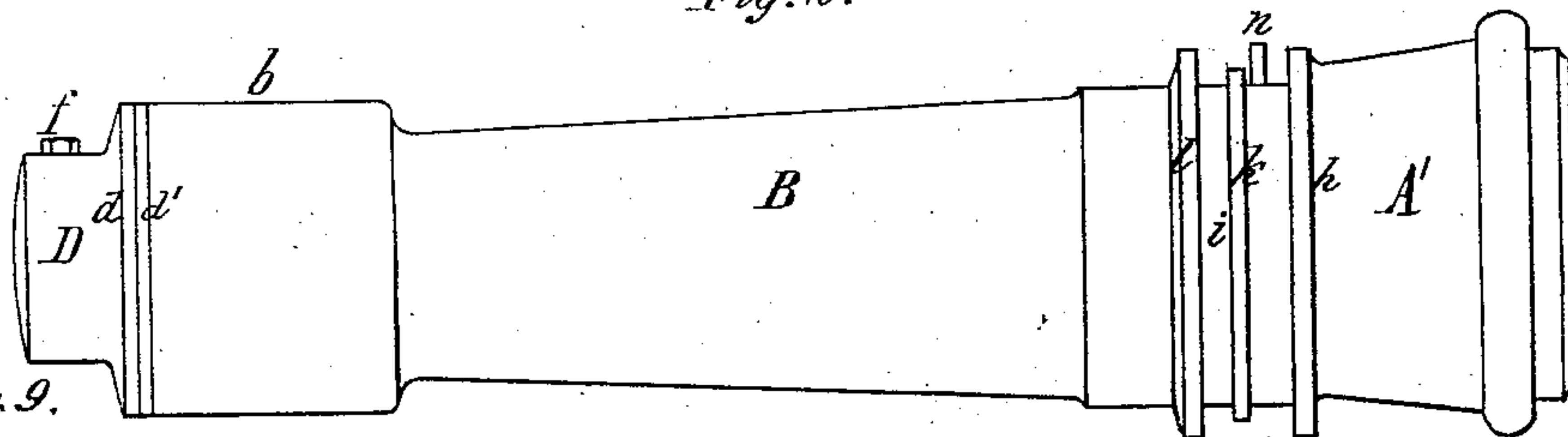


Fig. 9.

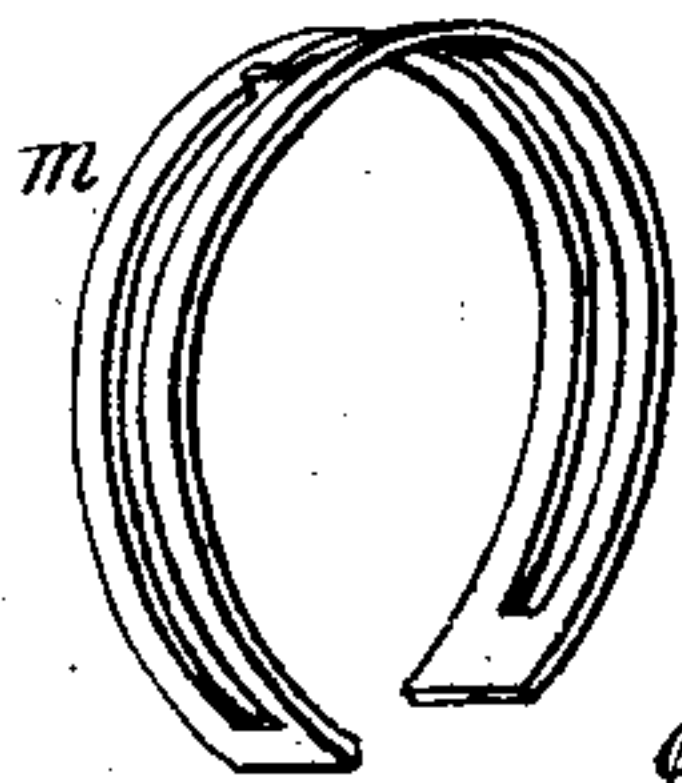


Fig. 3.

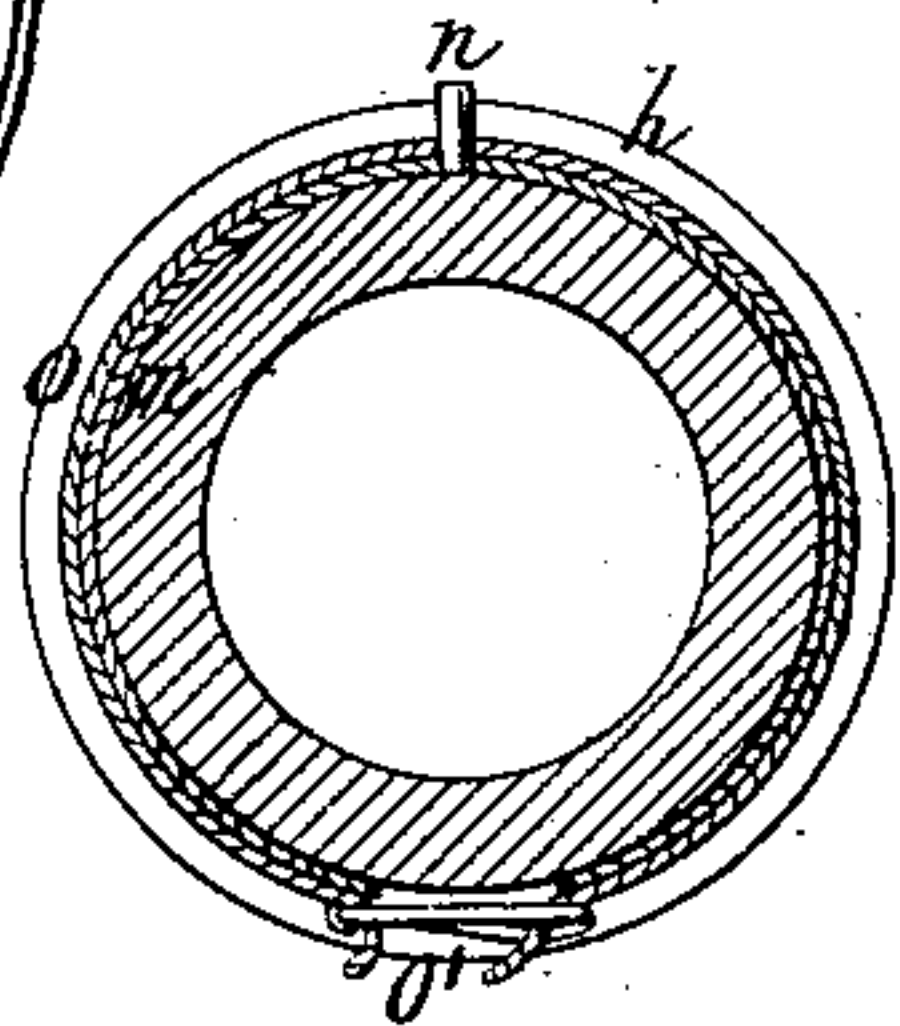


Fig. 4.

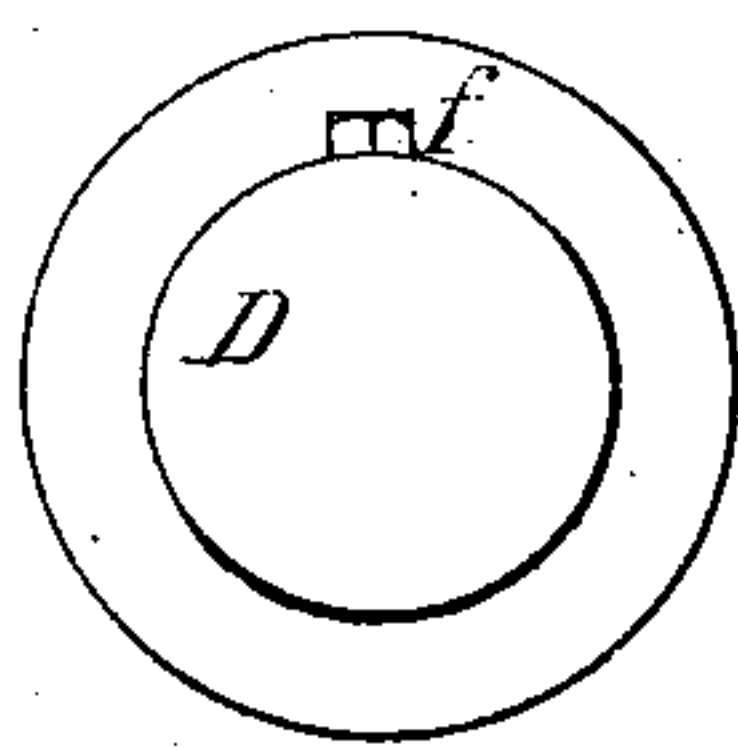


Fig. 5.

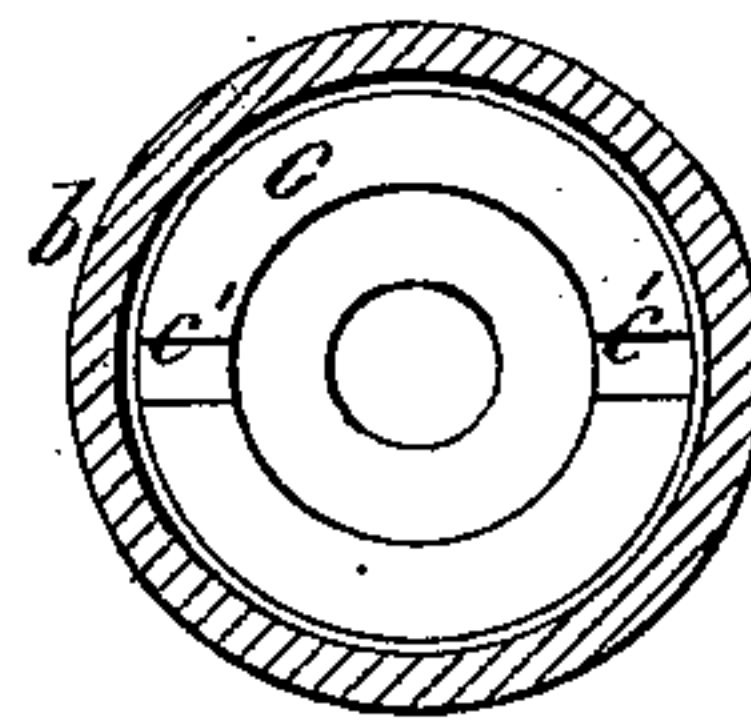


Fig. 6.

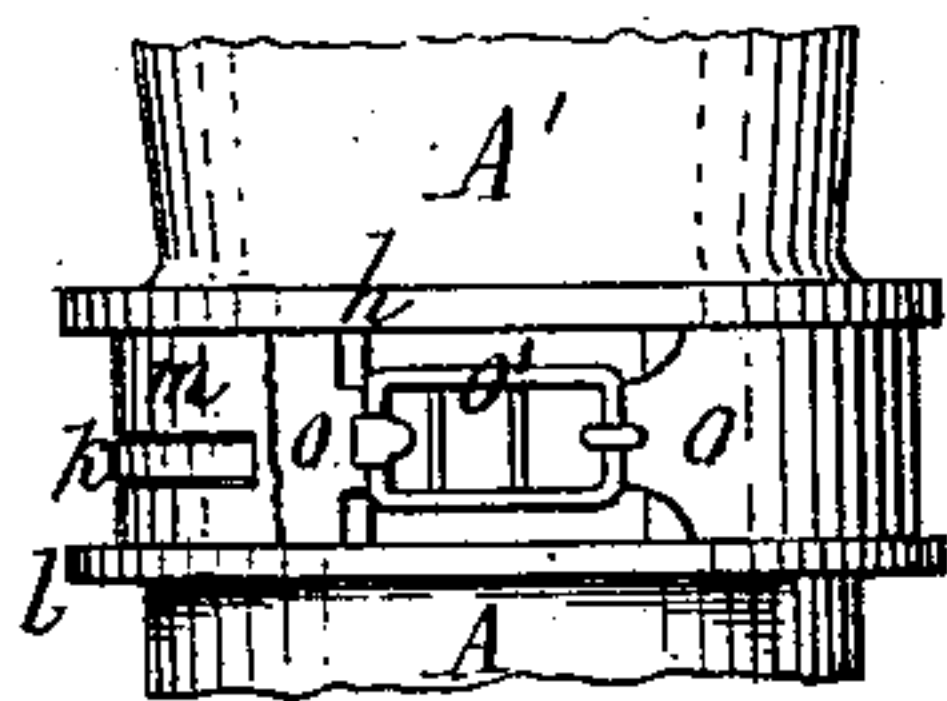


Fig. 7.

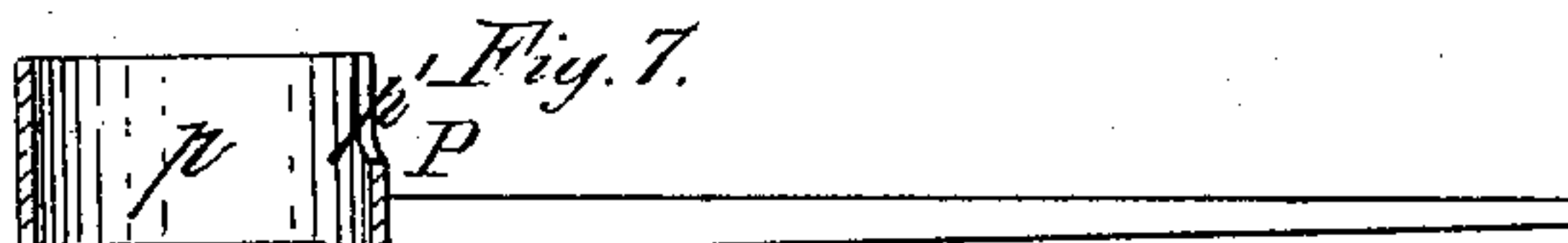
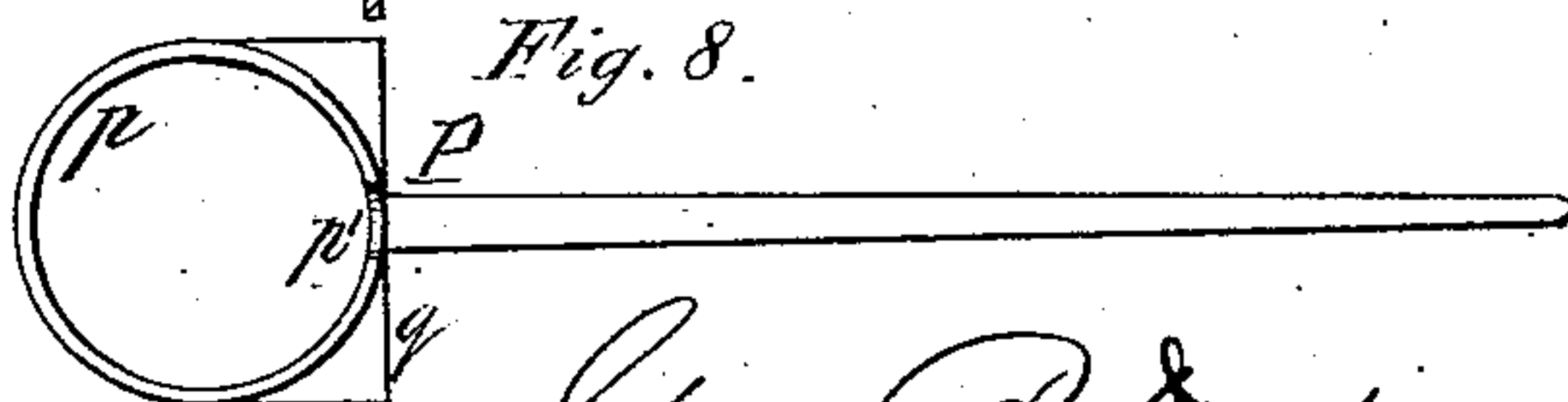


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE B. DURKEE, OF ALDEN, NEW YORK.

IMPROVEMENT IN WAGON-AXLE BOXES.

Specification forming part of Letters Patent No. **157,279**, dated December 1, 1874; application filed September 8, 1874.

To all whom it may concern:

Be it known that I, GEORGE B. DURKEE, of Alden, in the county of Erie and State of New York, have invented certain Improvements in Axle-Boxes for Wagons, of which the following is a specification:

In the accompanying drawing, Figure 1 is a longitudinal vertical section of an axle-box provided with my improvements. Fig. 2 is a side elevation thereof. Fig. 3 is a section in line *x x*, Fig. 1. Fig. 4 is a front view of the screw-cap at the end of the axle-box. Fig. 5 is a section in line *y y*, Fig. 1. Fig. 6 is a fragmentary bottom-plan view of the rear joint of the axle-box. Fig. 7 is a sectional view of a wrench for the screw-cap and nut at the front end of the axle-box. Fig. 8 is a plan view thereof. Fig. 9 is a perspective view of the packing at the rear end of the box.

The wrench represented by Figs. 7 and 8 forms no part of this application, as I intend to make a separate application therefor. I have shown and described it here as a convenient implement with which to turn the annular nut and screw-cap, as hereinafter explained.

Like letters of reference designate like parts in each of the figures.

A is the journal, formed with a socket, A', to receive the end of the axle. B is the axle-box, fitting on the journal A, and enlarged at the outer end, so as to form an oil-reservoir, *b*, around the end of the journal. *c* is a cylindrical nut, screwing into the end of the journal within the enlargement *b* of the box, and bearing against the offset or shoulder thereof. It is provided with notches *c'* to receive the end of a suitable wrench. D is a cap, screwing into the threaded end of the enlargement *b* of the box, and provided with a flange, *d*, and packing-ring *d'*, forming a tight joint with the end of the box. The cap D is also provided with a hole, *e*, for the introduction of the oil, in which fits a screw-plug, *f*. The inner end of the journal is formed with a shoulder, *g*, for the inner end of the box B, and also with a flange, *h*, as clearly shown in Figs. 1 and 2. The inner end of the box B is formed with an annular groove or recess, *i*, leaving a small flange or rim, *k*, on the inner end of the box, and a larger flange, *l*, on the outer side of the groove *i*, corresponding with the flange

h of the journal. *m* is a packing, consisting of a strap or band, which is slotted, except at the ends, as clearly shown in Fig. 9, and fits with its outer portion in the groove *i*, while its inner portion rests on the part of the journal between the flange *h* and shoulder *g*, the flange *k* of the box projecting into the slot of the packing. The packing *m* is secured in place, so as to be stationary, by slipping it over a pin, *n*, projecting from the upper side of the journal. The ends of the packing *m* do not meet on the lower side of the journal, but leave a small open space between them, as shown in Fig. 6. *o* is a fastening-strap placed over the packing *m*, and held stationary by the pin *n* in the same manner as the former. The strap *o* is secured by a buckle, *o'*, or other suitable device, preferably arranged on the under side of the journal, so as to leave an opening over the space between the ends of the packing *m*, as clearly shown in Fig. 6.

The joint at the inner end of the axle-box being packed, except at one point, any oil which may escape will work to the outer edge of the flange *k* in the unpacked space on the under side of the journal. As the wheel revolves the end of the packing *m* on each side of this unpacked space operates to wipe off the flange *k* and adjacent parts, and prevents the oil from being carried around with the box.

By this mode of packing the oil is prevented from escaping at the inner end of the box, except on the under side thereof, where any oil that may escape will drop directly to the ground without being carried around with the hub, which would cause it to spread over the hub and axle, and soil and disfigure the same by the dust and dirt which collect and adhere to the portions thus wet with the oil.

The packing *m*, as it becomes worn, can be readily replaced by a new one. The strap *o* serves not only to retain the packing in place, but also to protect the flange and packing from the dirt, which would otherwise work into the joint and under the packing, and grind and wear away the parts.

P is the wrench for turning the annular nut *c* and screw-cap D. It is provided with a hollow cylindrical body, *p*, which is placed over the round end of the cap D, and has a notch, *p'*, engaging over the head of the screw-plug

f, and bearing against one or the other side thereof in applying or unscrewing the cap *D*. The wrench *P* is also provided with a flat portion or plate, *q*, of a size to fit into the notches *c'* of the nut *c*, within the enlargement *b* of the axle-box, in applying or removing the nut.

By the use of the wrench, constructed as above described, a round-headed cap can be used, the screw-plug *f* acting as a bearing for the wrench, whereby a material saving in the cost of the cap is effected. The nut *c* also being cylindrical, it occupies much less space than when made of polygonal form, and enables the end of the box to be made of correspondingly less diameter, which insures a more perfect fitting of the same into the hub.

I do not claim, broadly, an axle-box pro-

vided with an oil-reservoir at the end, closed by a screw-cap, as such device is old and well known; but

What I claim as my invention is—

1. The combination, with the box *B*, provided with oil-reservoir *b*, of the cylindrical nut *c*, screw-cap *D*, and packing *d'*, all constructed as and for the purpose set forth.

2. The combination, with the journal *A*, provided with shoulder *g* and flange *h*, of the box *B*, provided with groove *i*, flanges *k* *l*, and packing *m*, substantially as and for the purpose set forth.

GEO. B. DURKEE.

Witnesses:

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