F. H. ALLEN & J. LATHROP.

DEVICES FOR ATTACHING HUBS TO AXLES.

No. 195,245. Patented Sept. 18, 1877.

Fig. 1

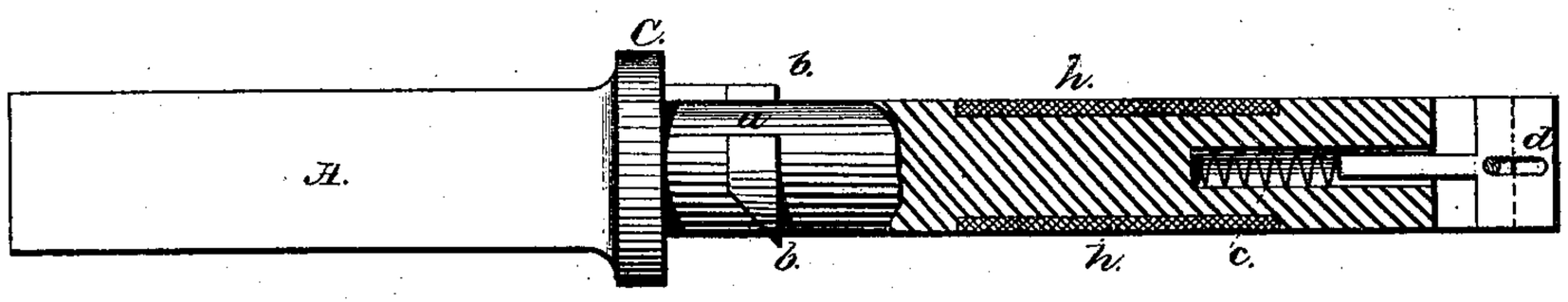


Fig. 2.

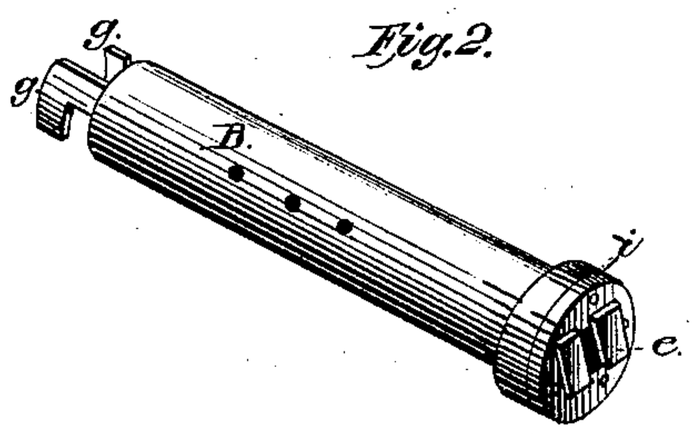
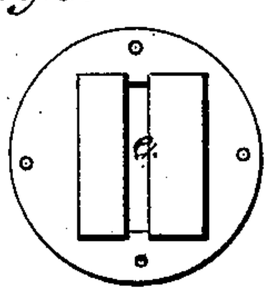


Fig. 3.



Attest:

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Frank H. Allen.
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UNITED STATES PATENT OFFICE.

FRANK H. ALLEN AND JAMES LATHROP, OF NORWICH, CONNECTICUT, ASSIGNORS TO THEMSELVES AND JOHN E. WARNER, OF SAME PLACE.

IMPROVEMENT IN DEVICES FOR ATTACHING HUBS TO AXLES.

Specification forming part of Letters Patent No. **195,245**, dated September 18, 1877; application filed July 9, 1877.

To all whom it may concern:

Be it known that we, FRANK H. ALLEN and JAMES LATHROP, both of the city of Norwich, county of New London and State of Connecticut, have invented certain new and useful Improvements in the Method of Securing Carriage Wheels to Axles, a full and clear description of which is contained in the following specification, reference being had to the annexed drawings.

This invention is an improvement on a patent of the United States granted to the subscribers April 24, 1877, No. 190,052, and in the following description we wish it clearly understood that we do not again claim the tube (B, Fig. 2) on which the wheel rotates.

Our improvement relates only to the method of securing the said tube to the axle and to the oil-reservoir within the tube.

In the improvement which is the subject of this specification the axle receives all possible strength at the flange or collar C, inasmuch as no cuts, slots, or holes are necessary at that place.

In the accompanying drawings, Figure 1 represents an axle constructed with our improvements, showing at *b b* sections of a flange, the diameter of which is equal to the outside diameter of the tube B.

The outer end of the axle A is slotted transversely, and has also a hole of suitable size to receive a spiral spring, and a latch or spring-catch. (Shown at D in the same diagram.)

The latch *d* is held in place by a pin passing through the axle and through a slot in the latch. This slot in the latch *d* allows sufficient outward and inward movement to accomplish the desired result.

The axle A, Fig. 1, is reduced in size at *h*, to receive a sleeve of felt or other porous material, in which is held in reserve a large quantity of oil, melted tallow, or other suitable axle-grease. This reserve of axle-grease is designed to keep the tube B cool.

Should the tube B become heated and dry, the heat will draw from the reserve in the porous reservoir sufficient grease to lubricate the tube, and thus prevent the wheel from sticking and grinding.

Fig. 2 shows the tube B, which remains nearly the same as in our former patent of April 24, 1877.

This tube has been shortened slightly, and has also received a transverse slot across the outer end, as shown at *e*, Figs. 1 and 2, into which the catch *d* springs when the tube is slipped on the axle.

To operate this device, place a flat key or wrench in the slot *e*, giving pressure enough to throw the catch *d* inward, thereby releasing the lugs *g*, and allowing the tube to be withdrawn from the axle. After cleansing and lubricating, return the wheel and tube to their place on the axle, pass the lugs *g* through the openings *a*, giving the tube about one-fourth turn to the left, when the lugs *g* will engage with the projections *b b*. At the same instant the catch *d* will spring forward into the slot *e*, effectually locking the tube B to the axle.

The flange *i* on the tube B prevents the wheel from slipping off the tube.

All the locking and working parts in this device are inclosed in the tube B, where no dust, snow, or gravel can get to them.

We do not now claim the tube B; but we do claim—

1. In combination with the axle A and tube B, the spring-catch *d*, arranged and operated as and for the purpose specified.

2. In combination with the axle A and tube B, the porous reservoir *h h*, as arranged and for the purpose specified.

3. In combination with the axle A, tube B, and spring-catch *d*, the projections *b b*, as and for the purpose specified.

In witness whereof we have hereunto set our hands and seals this 21st day of June, A. D. 1877.

FRANK H. ALLEN. [L. S.]
JAMES LATHROP. [L. S.]

In presence of—
JNO. DUNHAM, Jr.,
JOHN E. WARNER.