H. G. THOMPSON.

Car-Axle Box.

No. 112,510. Patented March 7, 1871.

FIG. 1

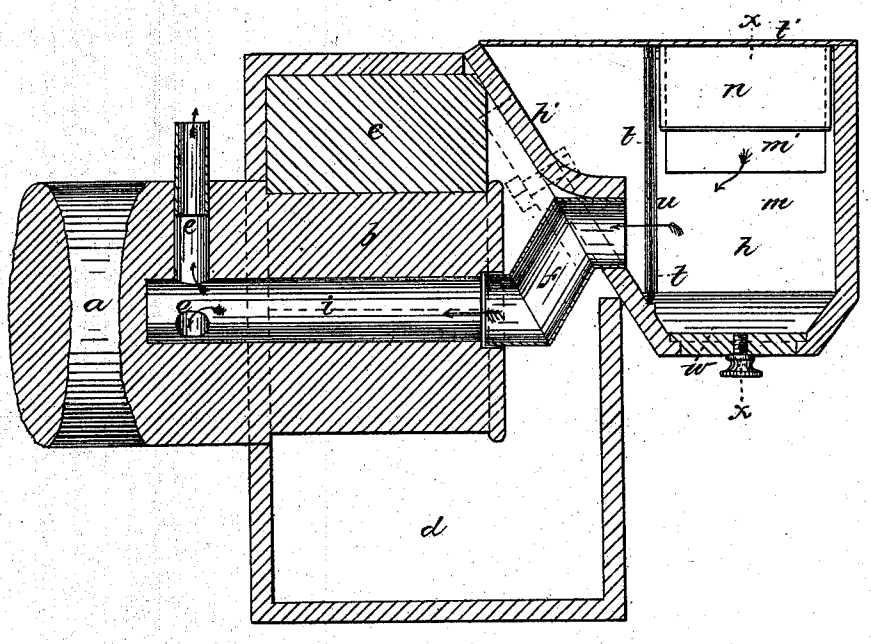
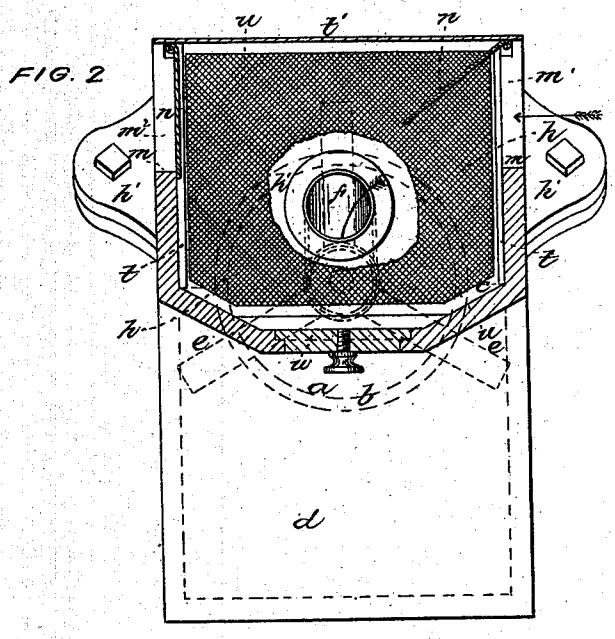


FIG. 2



WITNESSES:

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United States Patent Office.

HENRY G. THOMPSON, OF MILFORD, CONNECTICUT.

Letters Patent No. 112,510, dated March 7, 1871.

IMPROVEMENT IN DEVICES FOR COOLING JOURNALS OF CAR-AXLES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY G. THOMPSON, of Milford, in the county of New Haven and State of Connecticut, have invented and made a new and useful Improvement in Cooling the Journals of Car-wheel Axles; and the following is declared to be a correct description of the same.

This invention is an improvement upon that set forth in an application filed by me October 4, 1870.

In said application tubes are represented as passing from the hollow end of the journal to the outside of the journal-box, to allow a current of air to be drawn into said hollow journal to cool the same and prevent dust entering into the chamber containing the lubricating material, and said tube is provided with couplings or joints, so that the mouth of said tube can be reversed, according to the direction in which the car is moving.

My present improvement relates to a box or air-chamber, to be attached to the front of the journal-box, and provided with openings at its ends to allow air to pass into said box and into the hollow journal by the tube which extends from said box into said journal.

I combine with said openings swinging flaps, hinged upon the insides of said chamber so as to cover said openings, and these flaps are operated by the air, so that according to the direction in which the car is moving one of the flaps will be raised by the air passing into the chamber and the other closed to prevent the escape of air, except by its passing through the tubular or hollow journal.

In connection with the above I employ a screen, placed between the openings and air-tube, which allows air to pass freely to the tube, but prevents the passage of sand or any material that would be liable to obstruct the tube of the journal.

In the drawing—

Figure 1 is a vertical longitudinal section of a journal-box fitted with my improvement, and

Figure 2 is a vertical cross-section at the line *x x*.

Fig. 1, *a*, represents a portion of a car-wheel axle, and

b is the journal of the same;

c is the bearing for said journal, and

d, the box or chamber for containing the lubricating material.

The journal *b* is provided with the opening or hole *i* in the center thereof, and with the lateral openings and tubes *e e*, for the discharge of air by centrifugal force drawn in through the hole *i*. These discharge-openings may be of any desired character.

The tube *f*, instead of passing to the outside of the journal-box, as in aforementioned application, is connected with and opens into an air-chamber or box, *h*, the back-plate *h'* of said box *d* forming a cap-plate to the journal-box *d*, to prevent the passage of dust or sand to the lubricating material contained therein.

I have shown said tube *f* as screwed to said plate *h'*, and extending downward with a bend, so as to enter the opening *i* in the journal *b*.

In the ends *m m* of the box *h* I provide openings m^1 m^2, for the passage of air into said box, and these openings are closed by the flaps *n n*, which are hinged to said ends *m m* upon the inside of said chamber.

When the car is in motion the force of the air raises one of the flaps *n*, and the air passes freely into the chamber, and the pressure of said air closes the other flap against its opening and prevents said air escaping except by the tube *f*.

Through this tube *f* the air passes into the opening *i*, and thence away by the tubes or openings *e e*.

The centrifugal action and the force of air entering into the chamber *h* conspire to produce a rapid current of air through the journal, to convey away frictional heat and keep said journal at a low temperature.

The journals at both ends of the shaft are to be thus fitted.

At *u* I provide a screen to prevent sand or other foreign substances passing with the air into the tube *f*, and this screen may be fitted in slides *t t*, as shown, so that the same can be removed from its place, for cleaning, with facility by simply taking off the cover *t'* to the chamber *h*. This screen *u* is partially removed in fig. 2.

At *w* I provide an opening and cover, to allow of the removal of the dust and dirt which may accumulate in the chamber *h*.

By the use of the air-chamber, with the openings and flaps to the same, I am able to dispense with the coupling or joint to the tube *f*, and consequently avoid the trouble of reversing the mouth of said tube at each change in the direction of the motion of the car.

I claim as my invention—

1. An axle-box, with the chamber *h* extending from it, and having flaps, arranged substantially as set forth, in combination with the axle *a b*, having the opening passing from its end beyond the journal, and provided with lateral discharge-tubes, as specified.

2. The screen *u* and stopper *w*, in combination with the air-chamber *h*, flaps *n*, axle *a b*, and openings m^1 m^2, substantially as and for the purposes specified.

Signed by me this 18th day of October, A. D. 1870.

HENRY G. THOMPSON.

Witnesses:

CHAS. H. SMITH,

GEO. T. PINCKNEY.