T. WILSON.

Lubricating Hubs and Axles.

No. 81,449. Patented Aug. 25, 1868.

FIG. 1

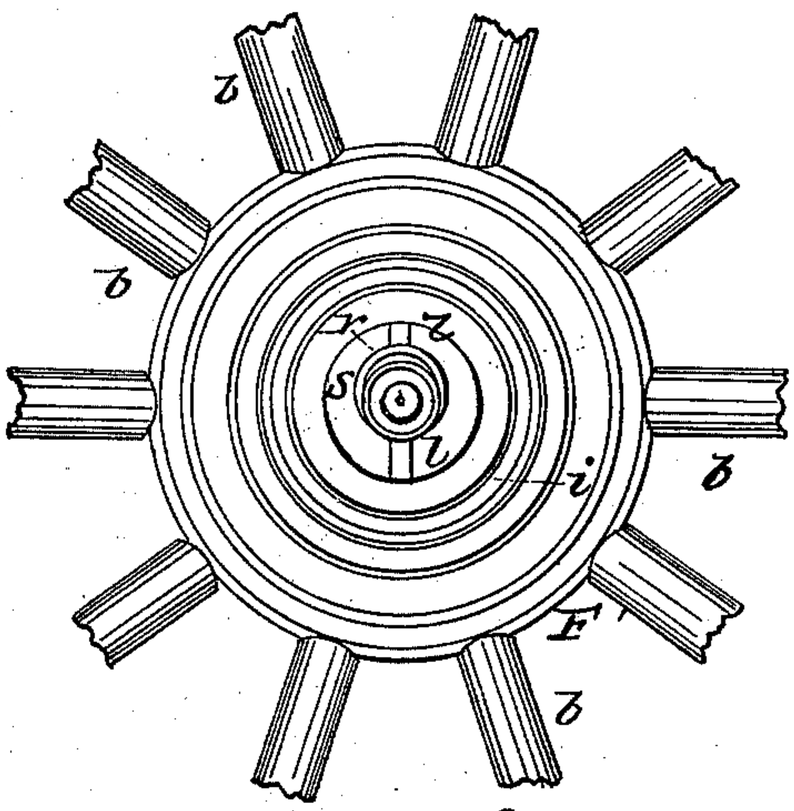


FIG. 2

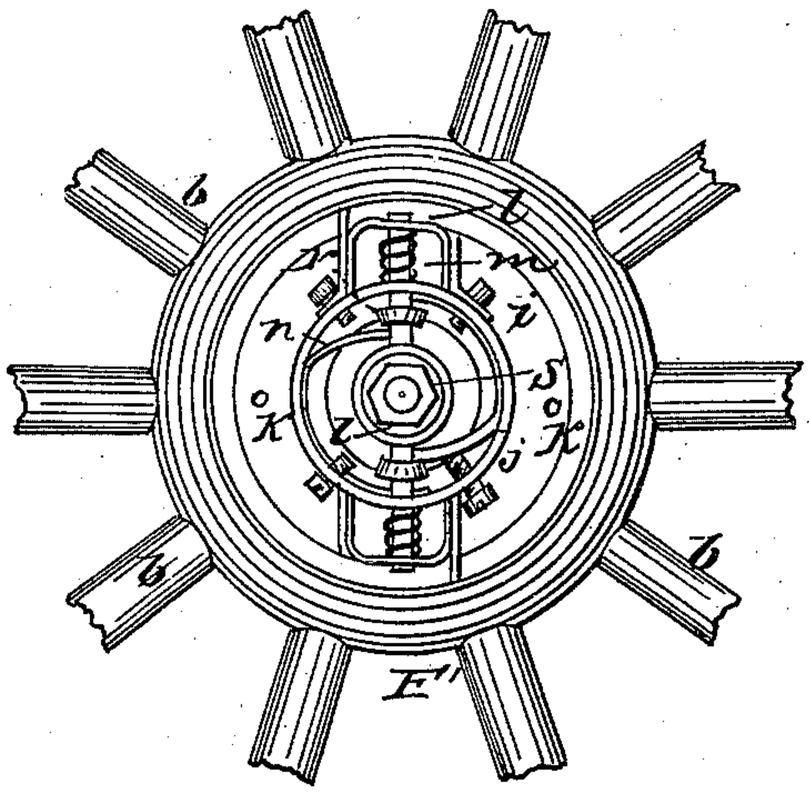


FIG. 3

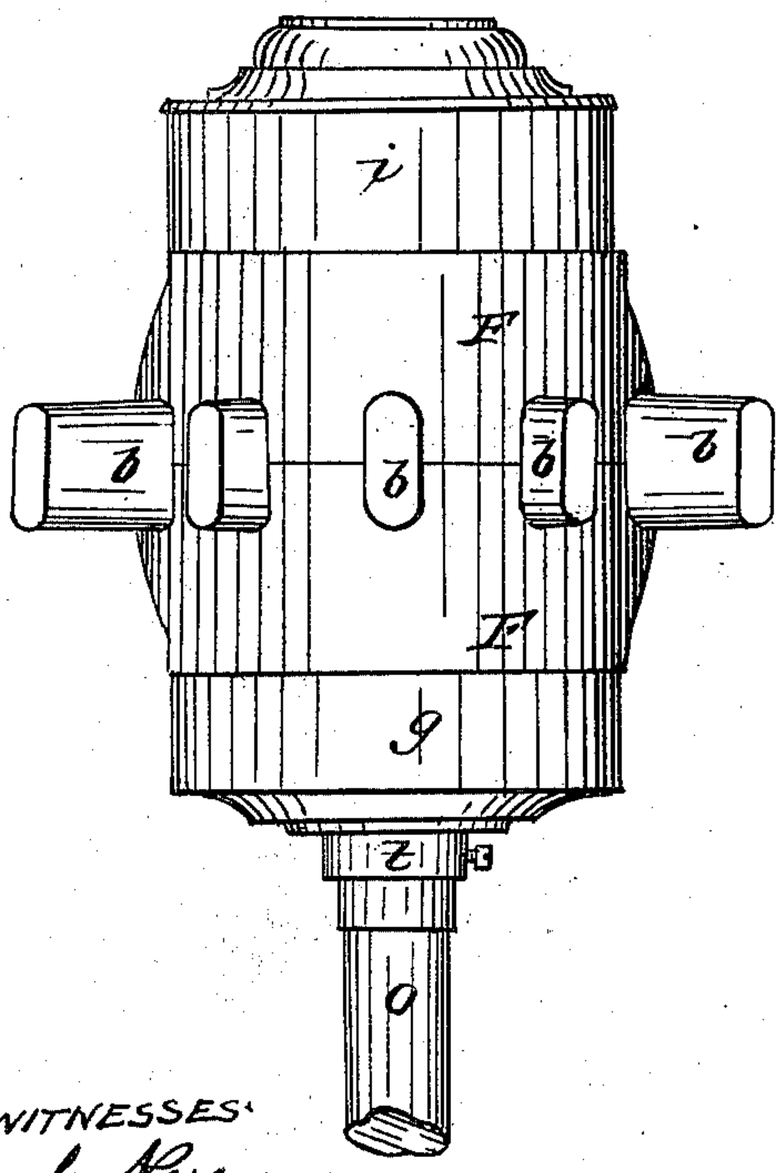
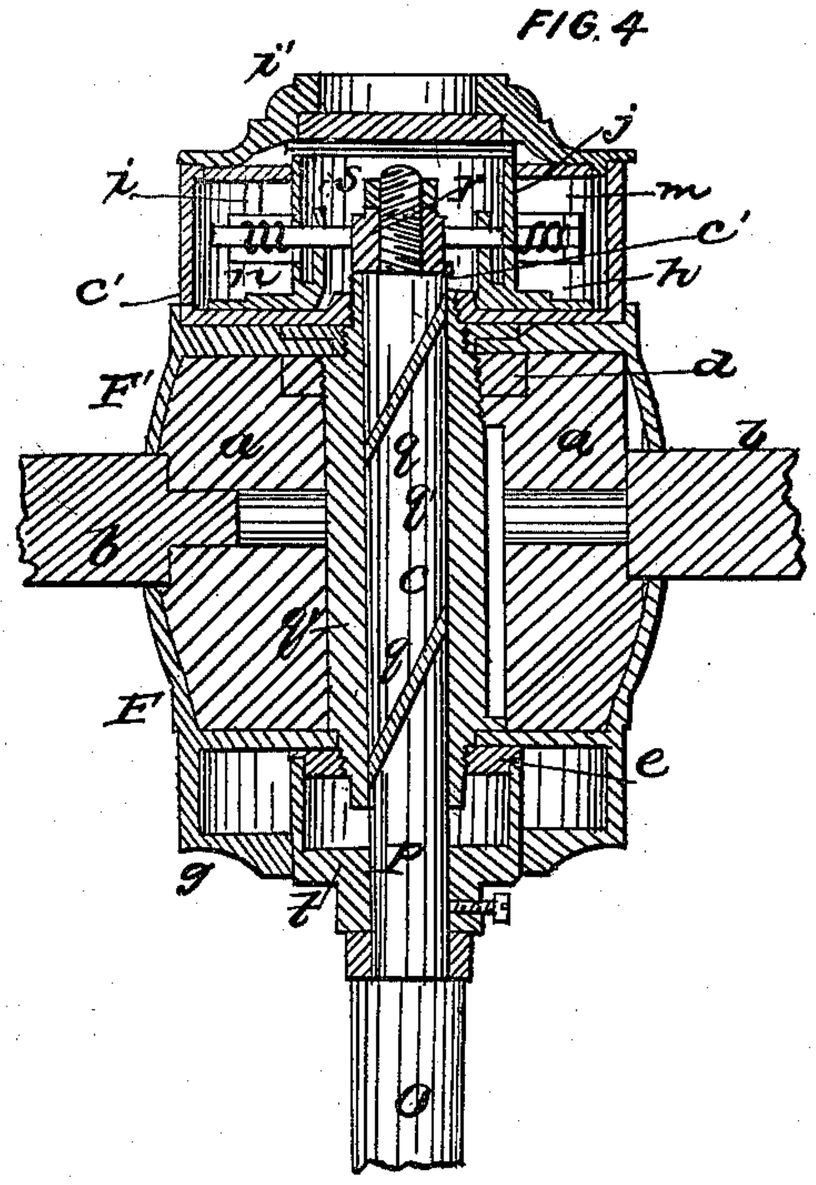


FIG. 4



WITNESSES:
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THOMAS WILSON, OF GARTON, ENGLAND.

Letters Patent No. 81,449, *dated August* 25, 1868.

IMPROVEMENT IN LUBRICATING HUBS AND 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, THOMAS WILSON, of Garton, Yorkshire, England, have invented new and useful Improvements in a Perpetual-Lubricating Hub; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing a hub to a wheel with an oil-receptacle or receiver and a perpetual-lubricating device, for keeping the bearing perfectly lubricated when required.

It also relates to enclosing the entire hub within a metallic case or shell, with joint in the middle, across its axis.

It further relates to the device which guards the bearing from dirt, sand, &c.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents an end elevation of my improved hub.

Figure 2 represents an end elevation with parts removed, showing the oil-receptacle and lubricating-device.

Figure 3 represents a plan of the same.

Figure 4 represents a longitudinal section of my improved hub.

Similar letters in the different figures indicate corresponding parts.

a represents the hub; *b*, the spokes; *c*, the journal-box, which is secured to the hub *a* by the collars *d* and *e*. This box *c* is also provided with a rib, which prevents it from turning in the hub *a*. *f f'* is the case, which is provided with suitable mortises, to correspond with the shape of the spokes *b b*, and is divided in the centre, as seen in fig. 3. Attached to the case *f* is the sand-guard *g*. *h* is a nut which secures firmly the case *f* and *f'* together, thus keeping the spokes *b b* firm and in position. *i* is the oil-receiver, which is secured to the box *c*, and is provided with a cap, *i'*, and glass, *j'*, in the same. *j* is the oiling-device, which is provided with its pistons *l l* and valves *m m*. *n n* are oil-conductors, which conduct the surplus oil to the box. *o* is the axle, which is provided with its bearing, *p*, having a spiral groove, *q*, its entire length. This axle *o* is secured in and to the box *c* by the cam-nut *v*, which also operates the pistons *l l* and valves *m m*. The cam-nut *v* is secured to the axle *p* by the reverse-nut *s*; and *t* is the waste-box, provided with waste, yarn, or thrums, for the absorption of the waste-oil which may come from the oil-receiver *i*, and not used or required in lubricating, this chamber *t* being attached to the axle *o*.

Operation.

The hub *a* being thus arranged, and its several parts adjusted and secured in their respective places, the axle-bearing *p*, accurately fitted to the box *c*, and secured in the same, is then ready for use. The oil-receiver *i* is then filled with oil by aid of the oil-holes *k k*, and is then secured to the box *c* by a screw. The wheel now being set in motion by its revolution, the cam-nut *v* comes in contact with the pistons *l l*, and lifts them vertically, opening the valves *m m*, which allows the oil to pass from the receptacle *i* on to the oil-conductors *n n*, where it is caught and conveyed on to the end of the box *c*, passing thence through the holes *c' c'* on to the bearing *p*, and conveyed its entire length by aid of the spiral groove *q* and conducting-channels *q'* in the box *c*.

The excess and waste-oil, not wanted in lubricating the journal *p*, is deposited in the waste-box *t*, and retained, this box *t* forming a compressed air-tight joint.

Thus it will be seen, with this lubricating-device an axle can be lubricated an indefinite length of time, and its bearing at the same time completely guarded and protected from dirt, sand, dust, &c.

And further, by aid of the case *f* and *f'*, additional strength and security can be given to the tenons of the spokes *b b* in the hub *a;* and in case a spoke, *b*, is broken, a new one can instantly be replaced.

And further, the glass, *j'*, in the cap *i'*, serves both as an ornament and to expose to the operator the workings of the oiling-device.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The cam-nut *v*, when arranged to operate substantially as described and set forth.

2. The oil-receptacle *j*, in combination with the conductors *n n*, substantially as and for the purpose described.

3. The pistons *l l*, with their valves *m m*, when operated upon by a cam-nut, *v*, substantially as herein described and set forth.

4. The sand-guard *g* and waste-box *t*, in combination with the box *c* and bearing *p*, when arranged substantially as described and set forth.

5. The arrangement and combination of the oil-receiver *j*, pistons *l l*, with valves *m m*, conductors *n n*, box *c*, with its nuts *d* and *e*, bearing *p*, with spiral groove *q*, waste-box *t*, sand-guard *g*, shell *f* and *f'*, and hub *a*, all when arranged substantially as described and for the purposes fully set forth.

THOMAS WILSON.

Witnesses:

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JAMES H. PEVEY.