C. DARLING.

Attaching Hubs to Axles.

No. 11,521. Patented Aug. 15, 1854.

Fig. 1.

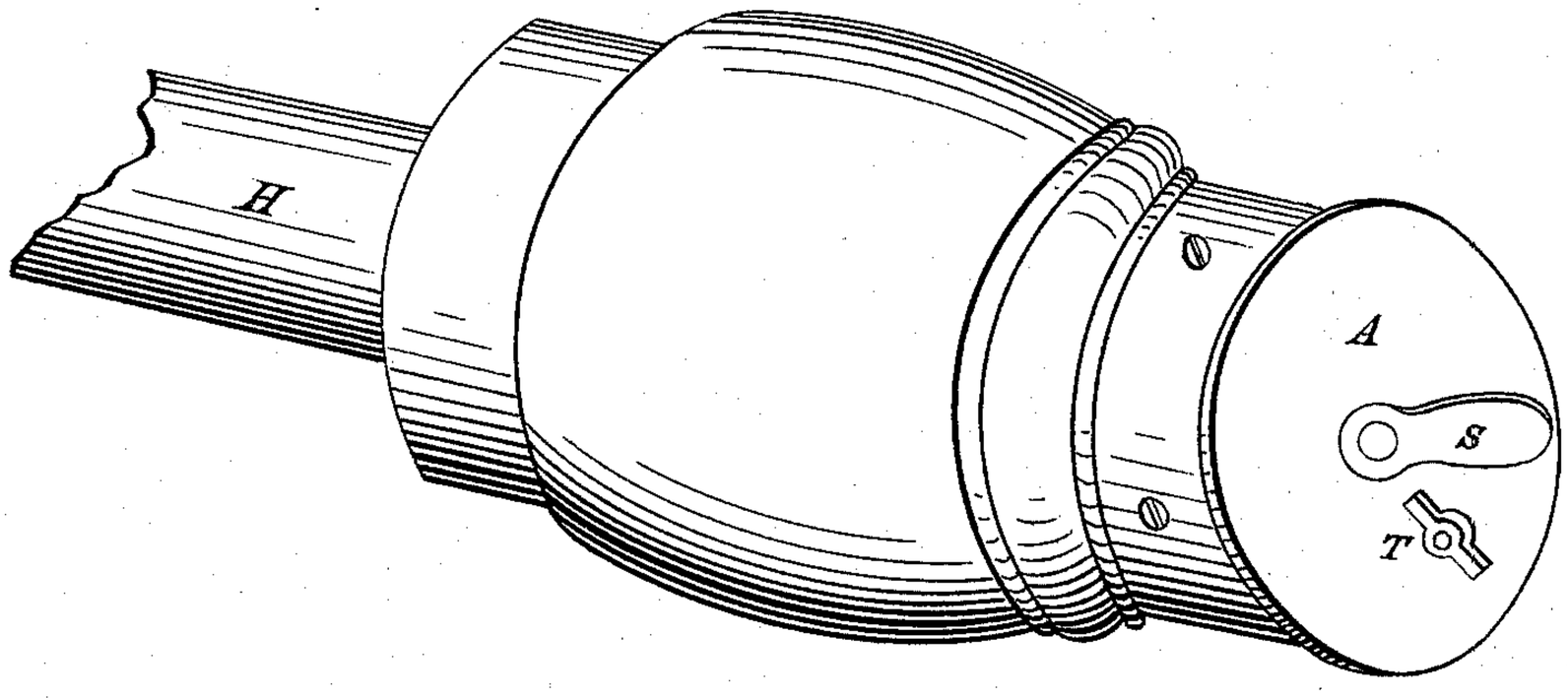


Fig. 2.

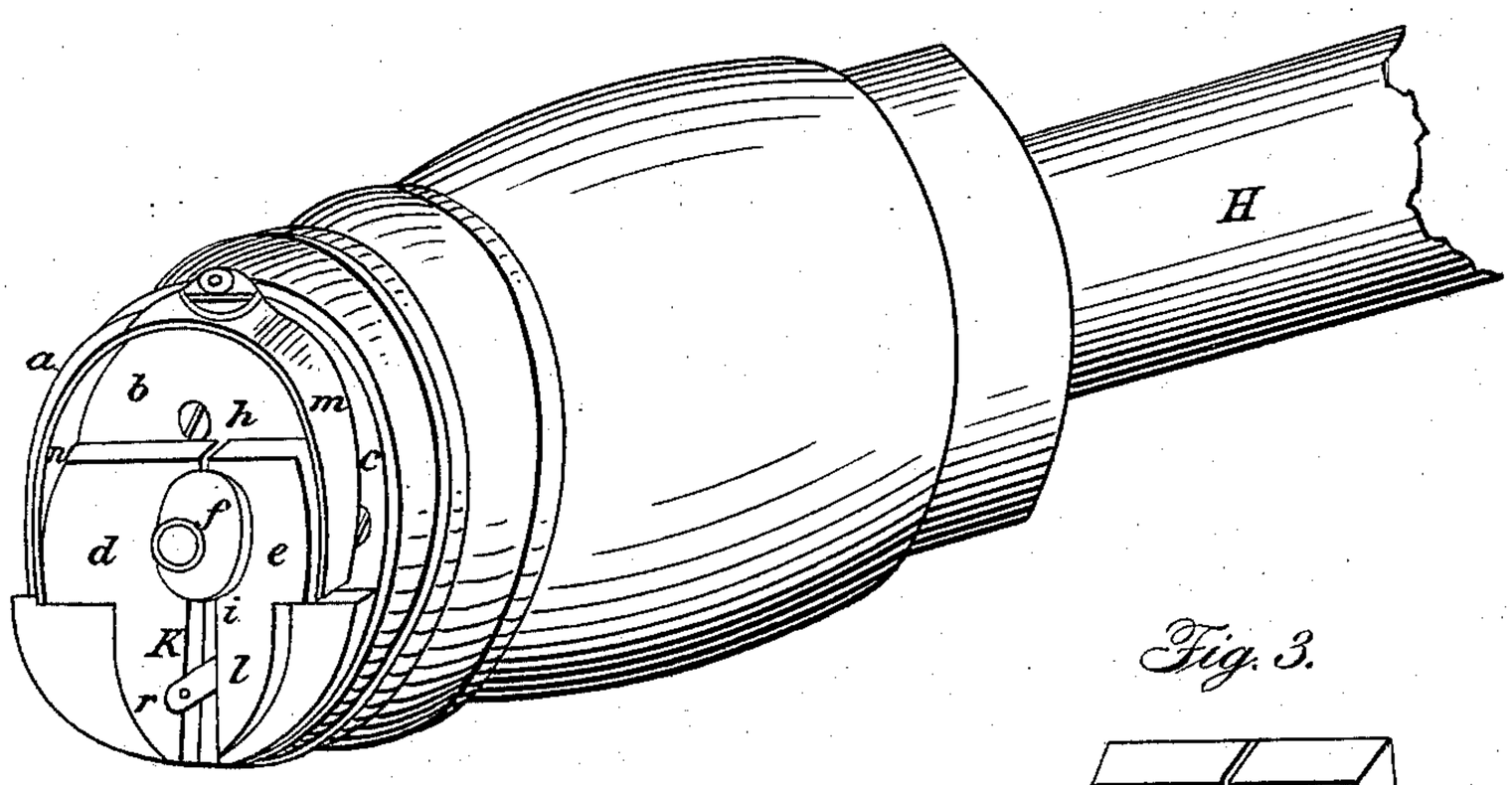


Fig. 3.

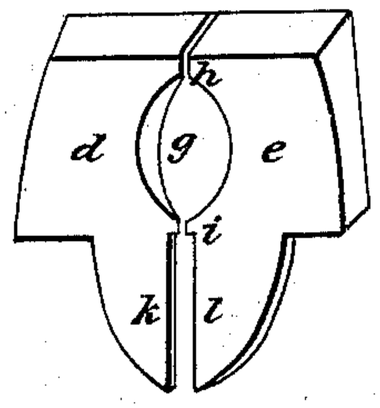
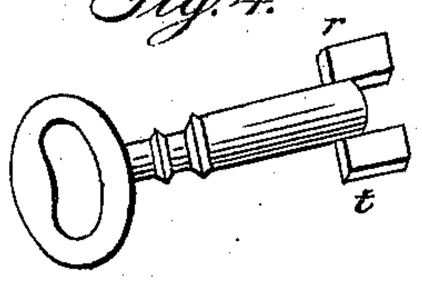


Fig. 4.



Inventor:
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Witnesses:
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UNITED STATES PATENT OFFICE.

COOK DARLING, OF UTICA, NEW YORK.

MODE OF SECURING HUBS TO AXLES.

Specification of Letters Patent No. 11,521, dated August 15, 1854.

To all whom it may concern:

Be it known that I, COOK DARLING, of the city of Utica, in the county of Oneida and State of New York, have invented a new and useful Mode of Securing the Wheels of Carriages on their Axles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, and to the letters of reference marked thereon, which make a part of this specification.

The nature of my invention consists in providing a mechanical arrangement of parts to be fastened upon the outer, or front end of the wheel hub by which a pair of movable guard plates are made to embrace the end of the axle as it protrudes through the hub, when the wheel is put on, and to hold the wheel and prevent it from coming off, unless these guard plates are forced apart so as to let the knob which is formed on the end of the axle pass between them. These parts are all covered by a neatly finished cap which is screwed on permanently in front; and the operation of loosening the wheel so as to permit it to be taken off is performed by the use of a key applied from without through a key hole in the face of the cap, without taking off the cap, or unscrewing any nuts, or fastenings whatever. When the wheel is to be replaced it is simply to be shoved on to the axle in the usual way, and the fastening takes place by the operation of the parts themselves.

In the annexed drawings, Figure 1, exhibits the exterior of the hub on the axle, the cap A, covering the parts above mentioned. Fig. 2, is the same with the cap off showing these parts in their proper connection.

a, *b*, *c*, is the base, being a circular plate, or ring of cast iron, or other suitable metal, corresponding in diameter to the end of the hub, and screwed permanently thereto. It has a hole in the center for the passage of a knob formed on the end of the axle.

d, and *e*, are the movable guard plates which seize and hold the axle; and *f*, is a cone shaped knob on the end of the axle by which it is held. There is a recess cast in the face of the circular plate *a*, *b*, *c*, of a dove-tail shape and the guard plates *d*, and *e*, are so constructed as to slip into this recess for a portion of their depth and to move easily therein. Fig. 3, shows these plates separately. The elliptical orifice *g*, is formed in the center between these plates, by an arched depression being cast in the edge of each plate at opposite points, as here shown. When the plates are closed together, they come in contact only at the points *h*, and *i;* the parallel sides *k*, *l*, receding from each other to give space for the operation of the key as hereafter described.

In Fig. 2, the guard plates *d*, and *e*, are seen closed together behind the knob *f*. They are closed into a circular groove turned into the axle, leaving the conical knob *f*, on the end of the axle. This groove allows the edges of these guard plates to move freely in it as the wheel revolves. The guard plates are kept closed in the position shown in the figure by the arched plate spring *m*, *n;* which being screwed at the top of the arch at (*o*), to the outer edge of the permanent plate *a*, *b*, *c*, descends on both sides of the guard plates, as seen in the drawing, pressing inward against these plates, and prevent their spreading while the wheel is in use. The permanent plate *a*, *b*, *c*, is cut away for a portion of its thickness at each side to permit the action of the springs.

The pintle P, is inserted in the solid plate in the rear, on which the key (Fig. 4) is to turn in disengaging the wheel.

H, is the axle, being here broken off; the front extremity being the knob *f*, (Fig. 2).

It is now evident that if the key (Fig. 4) is inserted upon the pintle P, (Fig. 2,); the fangs *r*, and *t*, settling into the cavity between the plates and is slightly turned either to the right or left, the guard plates *d*, and *e*, will be forced apart, and the orifice *g*, (Fig. 3,) behind the knob, will be opened so as to let the knob *f*, through and the wheel will be thus readily taken from the axle. Now when the cap A, (Fig. 1,) is put on covering and securing all this work, the operation of taking off the wheel is performed without removing the cap A, by simply using the key as described, through the key-hole T. And when the wheel is to be replaced, it is only to be put on in the usual manner, pressing it home with reasonable force, and the conical shaped knob *f*, (Fig. 2,) meeting the orifice *g*, (Fig. 3,) forces back the guard plates, admitting the passage of the knob; the plates again closing behind it and securing the wheel as before described.

The guard S, (Fig. 1) being placed over the key-hole T, all dust and filth are effectually excluded.

I do not claim as new the holding on the wheel by means of a groove encircling the front end of the axle, because that feature of the fastening has been used before. Neither do I claim operating the guard plates, or collar closing over the groove, by means of the key in front; because that device has also been used before. Neither do I claim as new simply the conical end of the axle, because that feature has also been used before. But

What I do claim as new, and desire Letters Patent for, is—

The combination and arrangement of the several parts, viz: The axle with the conical end; the guard plates and the means of operating the same by the use of the key in front.

COOK DARLING.

Witnesses:

WM. BAKER,

D. GILLMORE.