H. S. COOK.

Attaching Hubs to Axles.

No. 61.402. Patented Jan. 22, 1867.

Fig:1.

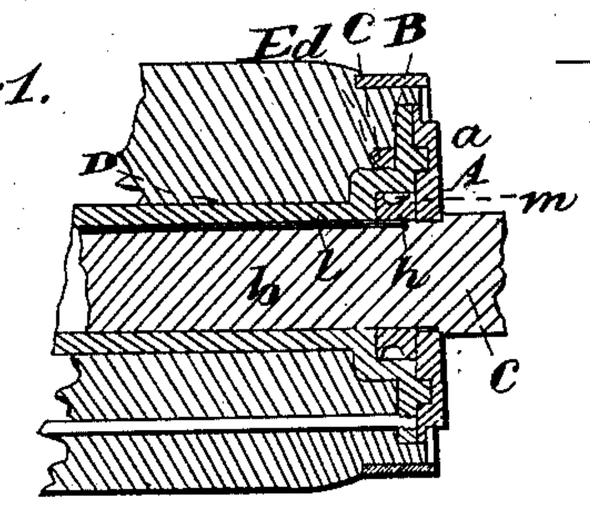


Fig:2.

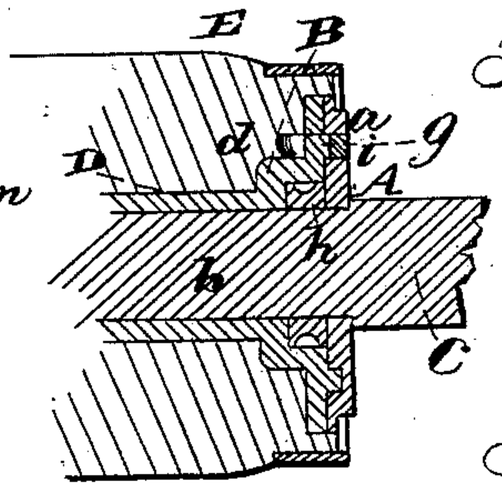


Fig:3.

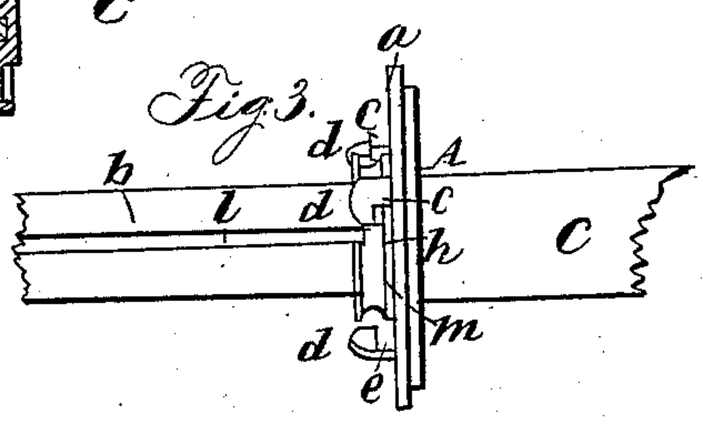


Fig:4

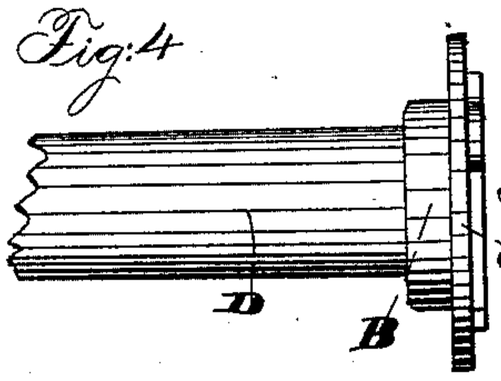


Fig:5.

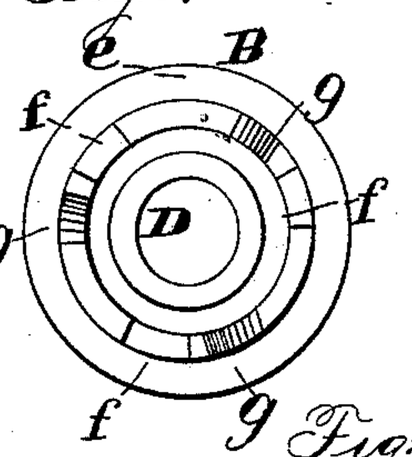


Fig:7.

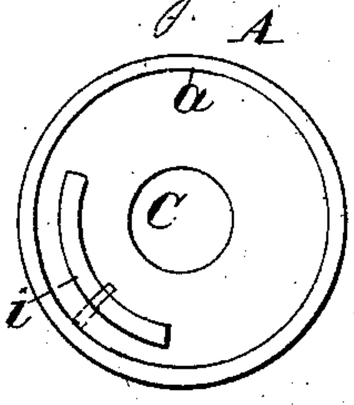


Fig:6.

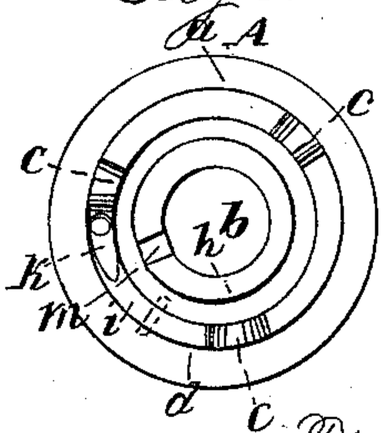


Fig:8.

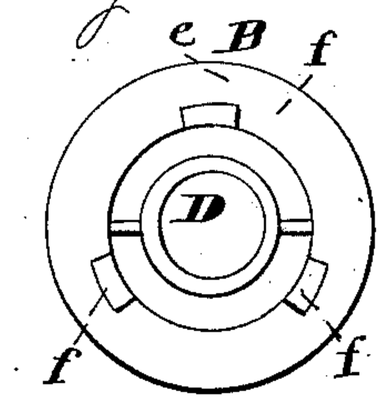


Fig:9.

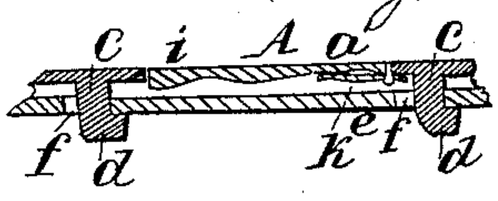
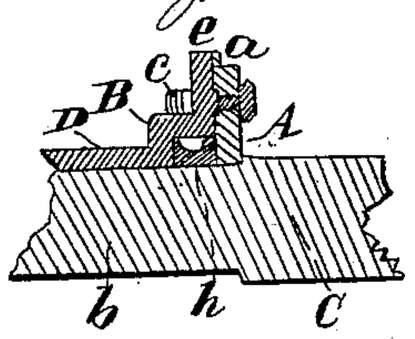


Fig:10.



Witnesses.

C W Baldwin

Wm A McDonald

Inventor:

Henry S. Cook

by his attorney

Frederick Curtis

United States Patent Office.

HENRY S. COOK, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 61,402, *dated January* 22, 1867.

IMPROVEMENT IN WHEEL AND AXLE CONNECTION.

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

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, HENRY S. COOK, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Carriage-Wheel and Axle Connection, and do hereby declare the following to be a full, clear, and exact description of the same, due reference being had to the accompanying drawings, making part of this specification, and in which—

Figures 1 and 2 represent vertical and longitudinal sections of portions of a wheel and axle provided with my invention.

Figure 3 is a side elevation of the axle with one portion of the connection applied thereto.

Figure 4 is a side elevation; and

Figure 5 an inner face view of the other portion of the connection as removed from the wheel hub.

Figure 6 is an inner face view; and

Figure 7 an outer face view of the portion of the connection referred to in fig. 3.

Figure 8 is an outer face view of the portion of the connection referred to in figs. 5 and 6.

The object of this invention is to produce a simple and efficient device for attaching a carriage-wheel to its axle, it being so constructed as to enable the wheel to be easily and expeditiously detached for the purpose of oiling its box and the journal of the axle without the inconvenience and delay of removing a number of screw-nuts, as is now the case. The invention consists in attaching the wheel to the axle by means of a "coupling connection," as it may be termed, constructed and operating as hereinafter described.

In the drawings above referred to, A denotes the male portion of the coupling as consisting of a circular cap-plate *a*, having a central opening to fit the journal *b* of the axle *c*, upon which it freely revolves, the said plate *a* being further provided with three or any other suitable number of studs, *c c c*, projecting from its inner face and near its periphery, these studs being formed with a lateral catch or hook, *d*, to clasp the outer face of a flange or hub-plate, *e*, composing part of the female portion, B, of the coupling, this flange being attached to or making part of the journal-box D of the wheel-hub E, to which it is applied by bolts, or in any suitable manner. The hub-plate or flange *e* is made with a series of concentric openings, *f f f*, corresponding in size and relative position with the studs *c c c*, which they are to receive, there being on each side of or contiguous to each of these openings a notch, *g*, as shown in figs 4 and 5 of the drawings. A spring catch or pawl, *i*, applied to the plate *a*, as represented, operates in connection with the notches *g g g* when the coupling is locked to prevent the two portions A B from revolving upon another and becoming detached. A collar, *h*, is secured to the axle-journal *b* and is encompassed by the two plates or flanges *a* and *e*, as shown in figs. 1 and 2 of the drawings, and serves to retain them and the wheel in due connection with the axle. To attach the wheel to the axle, the two parts A and B are to be brought together, which will insert the studs *c c c* within the openings *f f f* and so that their catches, *d*, shall extend through the openings. By then partially revolving the plate *a* upon the journal *b* in a direction corresponding to that in which the wheel will revolve while the carriage is advancing, the catches *d* will be caused to extend over upon or clasp the flange *e*, which having taken place the pawl *i* will be forced into one of the notches *g g g* by the action of a plate spring, *k*, applied to the plate *a* and operating against the pawl, as shown in Figure 9 of the drawings, which is a section through the said parts. In this last-mentioned figure it will be seen that the pawl or stop *i* turns upon a pin passing through its middle and into the plate *a*. To uncouple the fastening, in order to remove the wheel from the axle, pressure should be applied to the part *a'* of the pawl to press it inward, which will remove it from the notch *g* and allow the two parts to be separated. In place of this pawl I have contemplated the employment of a screw to be screwed directly through the plate *a* and into the notch *g* when the coupling is locked, as shown in Figure 10 of the drawings, which is a vertical section of a part of the plate *a* with the screw attached. This screw is to be retracted when it becomes necessary to remove the wheel. Furthermore, the axle-journal *b* has a longitudinal groove *l* cut in it, as represented, this groove leading into or making part of a groove, *m*, cut in the side and around the periphery of the collar *h* before referred to, the purpose of these grooves being to contain a material for lubricating the journal and its box, as well as to collect and retain any dirt or gummy matter which may form.

I claim the improved carriage-wheel and axle connection, consisting of the plates *a* and *e*, with their studs *c c c* and openings *f f f*, operating in combination with the collar *h*, as described.

I also claim, in combination with the above-described arrangement of parts, the pawl *i*, or its equivalent, substantially in manner and for the purpose as set forth.

HENRY S. COOK.

Witnesses:

C. W. BALDWIN,

W. A. MCDONALD.