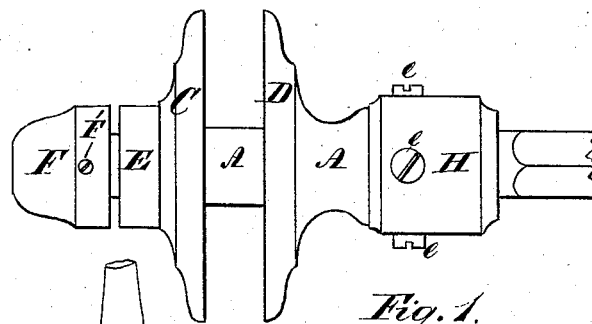


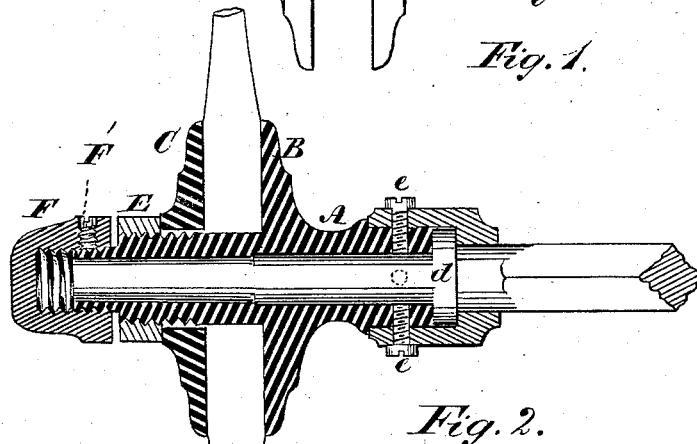
W. F. SAWDON & H. NORTH.  
Metallic-Hub.

No. 219,413.

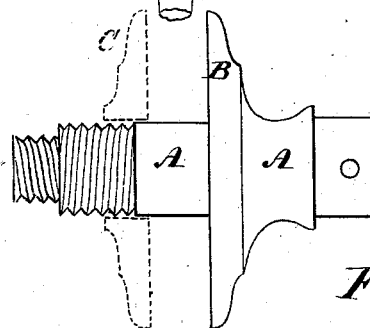
Patented Sept. 9, 1879.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

*Witnesses.*

*John Grist*  
*J. J. Ross*

*Inventors.*

*W. F. Sawdon*  
*H. North*

*By Henry Grist*  
*Attorney.*

# UNITED STATES PATENT OFFICE.

WILLIAM F. SAWDON AND HENRY NORTH, OF DRESDEN, ONTARIO, CANADA,  
ASSIGNORS OF ONE-THIRD THEIR RIGHT TO WILLIAM GEORGE CRAGG,  
OF SAME PLACE.

## IMPROVEMENT IN METALLIC HUBS.

Specification forming part of Letters Patent No. 219,413, dated September 9, 1879; application filed  
January 29, 1879.

*To all whom it may concern:*

Be it known that we, WILLIAM FOSTER SAWDON and HENRY NORTH, both of Dresden, in the county of Kent, in the Province of Ontario, in the Dominion of Canada, have jointly invented certain new and useful Improvements in Metallic Hubs; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, in which—

Figure 1 is an elevation of our improved hub. Fig. 2 is a longitudinal vertical section of the same; and Fig. 3 is an elevation of integral pipe-box and flange with removable disk, shown in dotted lines.

Our invention relates to the means for clamping the spokes in the hub; and it consists of a pipe-box having a fixed flange and a removable disk, between which flange and disk the spokes are clamped by a collar-nut and cap screwing reversely on the pipe-box, the former forcing the disk, and the latter locking the collar.

The hub consists of the pipe-box A, having formed thereon integrally a flange, B, and a corresponding disk, C, which slips on the pipe A. Between the flange and disk the spokes are placed in the usual manner and are clamped by the pressure of a collar, E, screwing on the pipe-box, said collar forcing the disk C and spokes against the flange B, and is secured from working loose by a cap, F, screwing over the end of the pipe-box against the screw-collar E, both cap and collar having a contrary screw-motion on the pipe-box, which is cut with right and left handed screw-threads. The screw diameter of the cap F is less than the inside diameter of the collar E, to allow the

latter to be slipped on the pipe-box to its place of screwing. The cap F at the end of the pipe-box forms a lubricating chamber, which is fed with lubricant through the screw-plug hole F'.

The inner end of the pipe-box is formed with a peripheral plain surface corresponding to the internal diameter of a tubular cap, H, fitting thereon and inclosing the shoulder *d* of the axle, the cap being slipped thereon previously to welding the ends of the half-axles together.

The axle at that portion which passes through the end of the cap H is formed with a rotund enlargement of greater diameter than the square of the axle, and corresponds in diameter to the hole in the end of the cap through which the enlargement passes, the close-fitting character of the cap excluding dust, mud, &c., from the pipe-box.

The cap H is secured by screws *e* passing radially into the pipe-box, and confines the shoulder *d* of the axle loosely, and prevents the arm of the axle from moving endwise in the pipe-box, thereby securely attaching the axle to the hub.

We claim as our invention—

In combination with the pipe-box A, having a fixed flange, B, and a disk, C, slipped thereon, the collar E and cap F, of different internal diameters, screwing reversely to each other on the pipe-box, to retain the spokes, as set forth.

W. F. SAWDON.  
H. NORTH.

Witnesses:

J. W. SHARPE,  
W. B. SMITH.