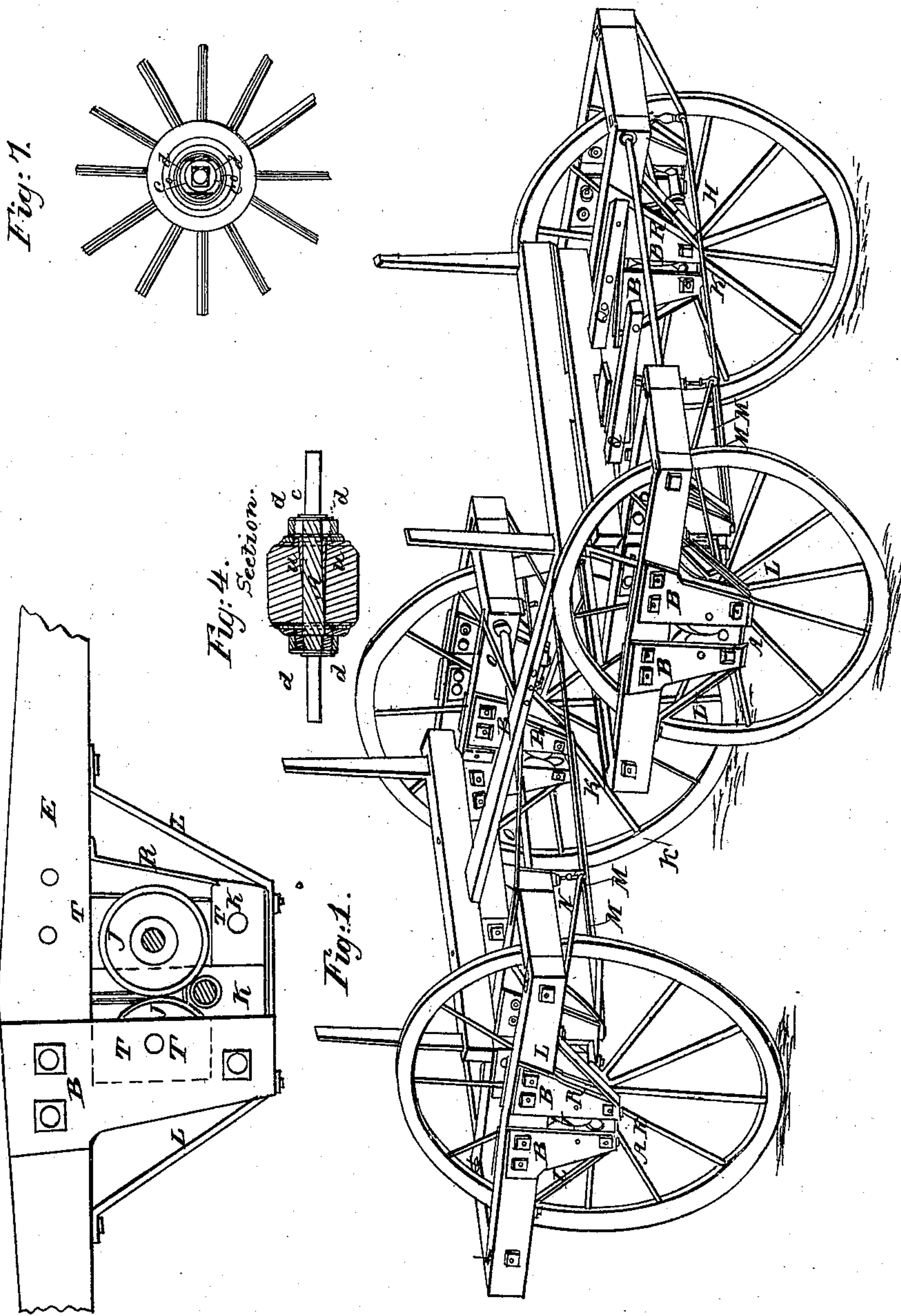


A. BRUNS.
Running-Gear.

No. 19,676.

Patented Mar. 23, 1858.

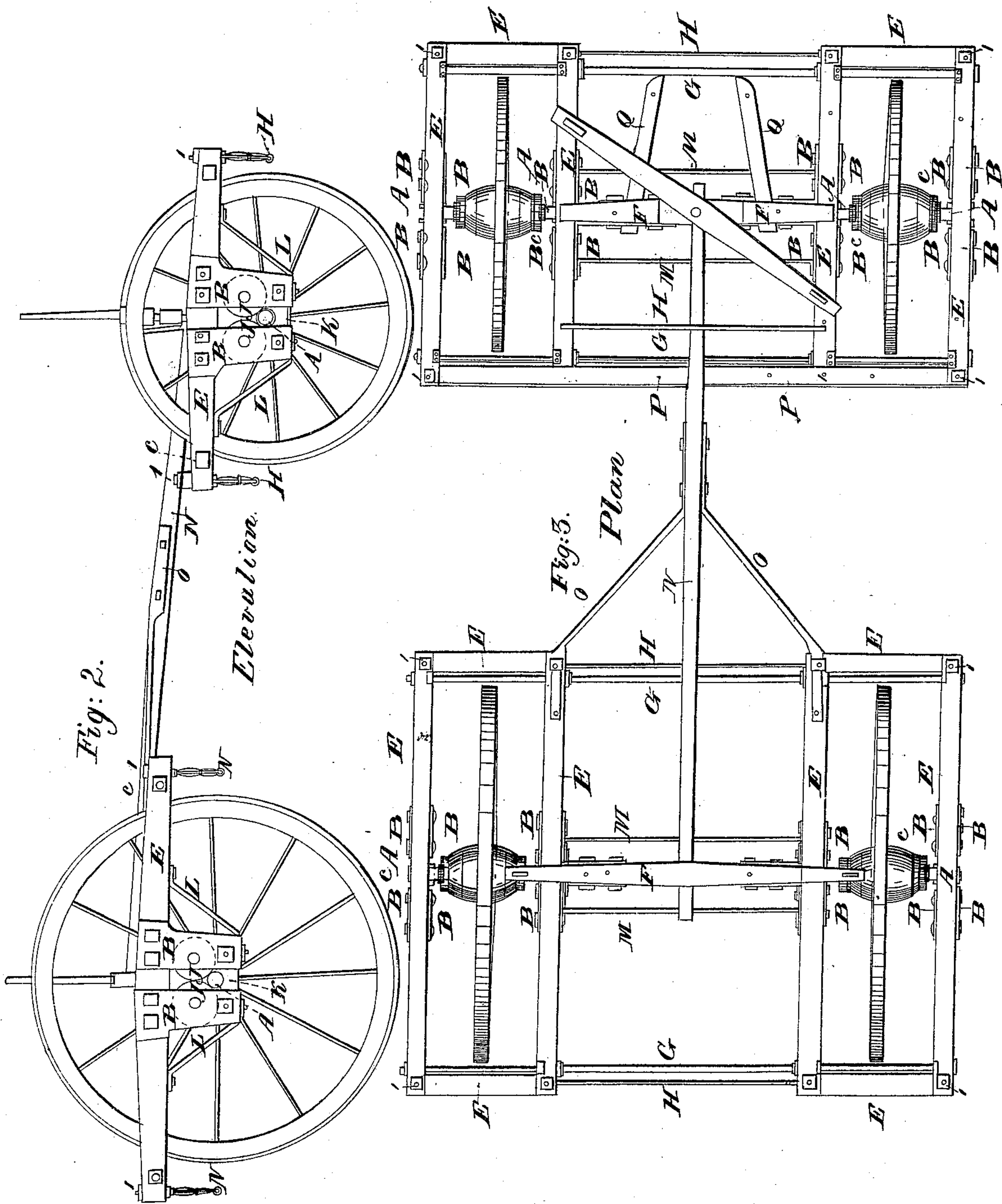


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UNITED STATES PATENT OFFICE.

ADOLPHUS BRUNS, OF DAVENPORT, IOWA.

SECURING THE WHEELS OF CARRIAGES, &c.

Specification of Letters Patent No. 19,676, dated March 23, 1858.

To all whom it may concern:

Be it known that I, ADOLPHUS BRUNS, of the city of Davenport, in the county of Scott and State of Iowa, have invented a new and useful Improvement in the Mode of Securing the Wheels of Wagons, Drays, Carts, Carriages, Omnibuses, Railroad-Cars, Locomotives, and other Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which Figure 1 is a perspective elevation, Fig. 2 an elevation, Fig. 3 a plan, Fig. 4 a section, of axle and hub; Fig. 5, a detail of axle and friction-rollers; Fig. 6 is an elevation of dust-plates, and Fig. 7 an elevation of front plate, and to the letters of reference marked thereon.

To enable others skilled in the art to make and use my improvement and invention I will proceed to describe their construction and operation as applied to a wagon, as shown in the accompanying drawings. When my invention and improvement are applied to any of the other vehicles hereinbefore enumerated they are to be constructed in the usual manner; but with such modifications as are called for in order to apply my invention and improvement to them. I construct a wagon in the usual manner, but with the modifications hereinafter mentioned in order to apply my improvement and invention.

The nature of my improvement and invention consists in providing each wheel of the vehicle with a separate revolving axle, marked A in the accompanying drawings, working on cast iron rollers marked J; which is fastened by two cast iron plates marked C in the drawings on each side of the hub (and secured in the hub in the manner hereinafter described) and by two wood screws on each side of the plates marked d in the drawings. Each wheel plays between two wooden frames marked E in the drawings connected by a center piece marked F, two wrought iron bars marked G and also by two iron suspension rods marked H; fastened to the wooden frames E by screw nuts marked I; as shown in the accompanying drawings. The construction of the wooden frames E rests on the revolving axles, marked A in the drawings; moving in wrought iron plates marked B; fas-

tened to the wooden frames by screw bolts. The plates, B, are connected at the lower end by a billow block of cast iron, marked K in the drawings, and two screw bolts. In order to make all more secure the plates marked B are fastened to the wooden frames E by a flat wrought iron bar marked L in the drawings; and screw bolts.

In order to give additional strength, and prevent the deflection of the wheels from the perpendicular, two wrought iron bars marked M in the drawings run between the flat wrought iron bars marked L supporting and connecting the frames marked E.

The coupling pole marked N in the drawings is fastened to the wooden frames E; by round iron bars marked O. The sway bar, marked P in the drawings, is not connected with the fire-hounds, as is usual, but rests on the wooden frames E and is fastened by the nuts I, and screw bolts, as shown in the drawings. The fire hounds marked Q in the drawings are short like those of a one horse wagon. To secure the plates B from dust there is a piece of sheet iron, marked R in the drawings, between each of the plates B. In order to protect the axles from dust there is a dust plate of sheet iron marked S in the drawings between each of the plates B on the inner side of wooden frames E. The bearings of the rollers work on cast iron plates, marked T in the drawings, which are united to the inside of plates B, and exactly fill the space which is left between the wooden frames E and the billow block K. The bearings are wrought.

The following is a full clear and exact description of my new and improved mode of fastening and securing the axle in the hub. From the center of the nave to the inside of the rim the axle is made square; but thickest in the center of the nave. On the inside of the rim there is a shoulder decreasing the size of the square at that point. This part of the axle projects half an inch beyond the outside of the rim upon which is shipped the cast iron plate marked C in the drawings; said plate being countersunk into the hub; and also fastened with two wood screws marked d. The axle is further secured in the hub by a wooden wedge, marked U in the drawings, which fills the space between the angle of the axle and the square hole of the hub, in which it is placed. The rest of the axle running on the friction rollers, J, is rounded to the length required.

I hereby disclaim being the inventor of wheels with independent axles or revolving axles running upon friction rollers, they having been heretofore used. But

5 What I claim as my invention, and desire to secure by Letters Patent of the United States is,

Securing the wheels upon the independent revolving axles, in the manner herein set forth.

ADOLPHUS BRUNS.

Witnesses:

JOHN T. O'REARDON,
EDW. LEEDS KERR.