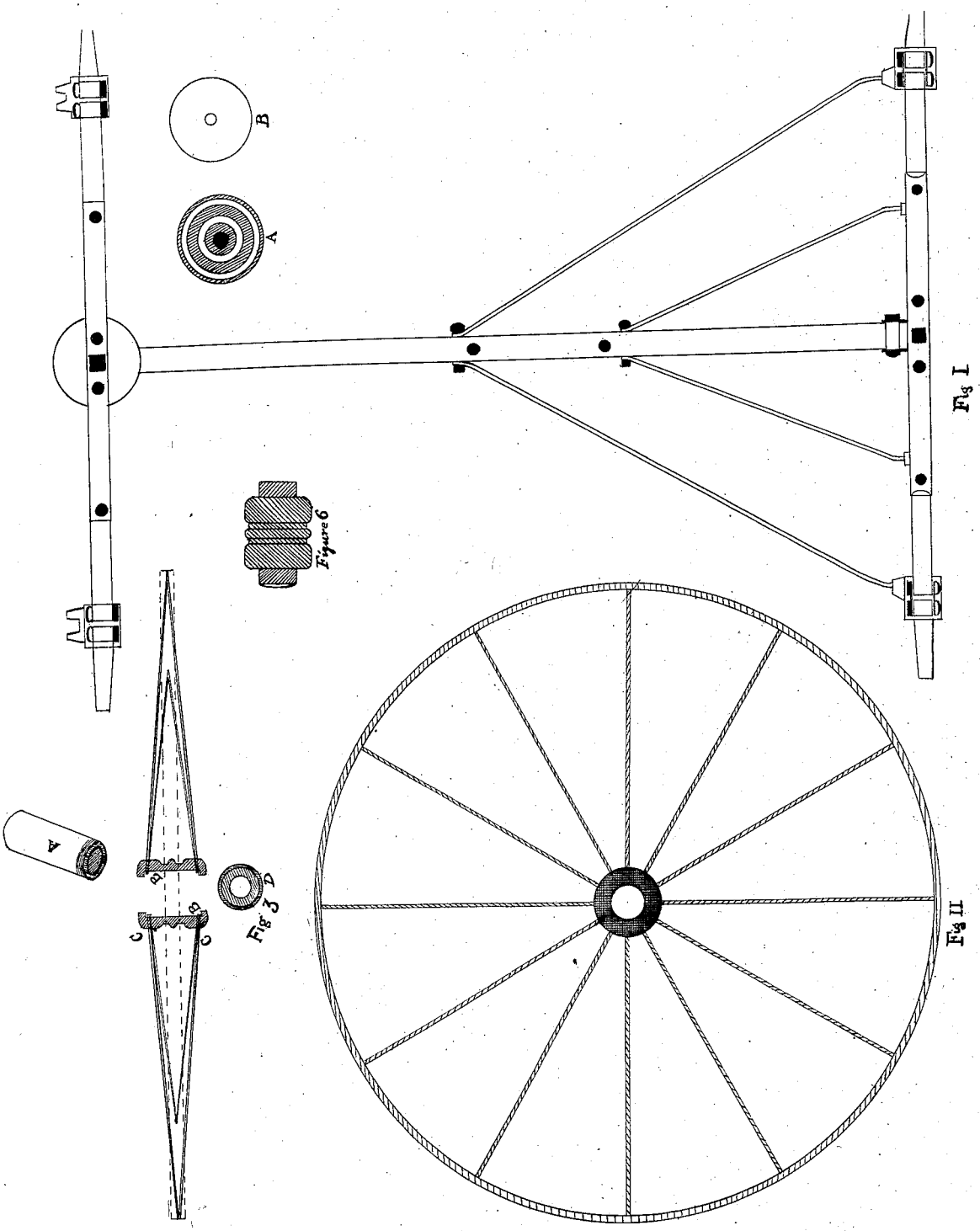
J. W. WHITNEY.

AXLE TREE.

No. 5,753. PATENTED SEPT. 5, 1848.



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UNITED STATES PATENT OFFICE.

JONATHAN W. WHITNEY, OF BUFFALO, NEW YORK.

AXLETREE.

Specification of Letters Patent No. 5,753, dated September 5, 1848.

To all whom it may concern:

Be it known that I, JONATHAN W. WHITNEY, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Carriage Running-Gear; 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 part of this specification.

First. The wheel box is made of brass or other composition of which A, Figure 3, is a representation, said box to be thimble shaped, *i. e.*, closed at one end, and on the outside of the open end is a thread to receive a box nut represented by D, Fig. 3; said box is to be keyed or otherwise fastened in the hub. The hub is to be of cast iron of the shape, on the outside, represented by Fig. 6 and on the inside as represented by B B in Fig. 3, having two bearings upon the box at either end of the hub, leaving a space in the center for the spokes to play, on receiving a sudden blow, from rough roads or otherwise. The spokes are to be of iron with a head on the inner end to be inserted on the inside of the hub, said spokes to be the usual number now in use, and receive their strength from being inserted alternately on one end and the other of the hub as represented by C C in Fig. 3, and on the outer end are screwed into an iron rim, in lieu of the wooden felly now in use. Over this rim is to be an ordinary iron tire. The benefit of this wheel consists in the facility of setting new tire or boxes without disturbing the main wheel, and in the play allowed the spokes when the wheel is compressed by jolting or otherwise, in its durability and in not being affected by the weather.

Second. The axles consist of a plate of steel represented by letters A in Fig. 10, with arms cast on of iron, such castings to be chill hardened and of the shape represented by B B in Fig. 10 having two bearing and a solid collar *b b*, over and back of which is the box nut before referred to, which holds on the wheel. The space immediately behind said collar, to be cast round and takes the friction of the said box nut. Immediately back of the last mentioned section, the casting is square, and receives a transverse standard of malleable iron or composition, represented by Fig. 7 and also by C C in Fig. 4 and which is bolted on to the axle. The lower end of said standard receives a strainer, Fig. 8, and also D D in Fig. 4 running under the axle and about 4 or 5 inches (according to the size of the carriage) from the axle. The ends of the strainer are connected with the main standard by couplings, with nuts and screws, as represented by D D Fig. 8. The principle and operation of these couplings and screws is to give any required track to the wheels by drawing in or letting out the bottom of the wheel, which can be done at any time, by turning the nuts at E E Fig. 8. Between the main axle and the strainer are three or more smaller standards represented by F F in Fig. 4 which go through both the strainer and axle and fasten with a nut and screw. The two outside standards C C, Fig. 4, receive braces which connect with the reach as also do the standards F F Fig. 4 and the middle one is constructed with a socket as represented at G Fig. 10, and receives the lower leaf of the reach on a bolt.

The upper ends of the large standards H H Fig. 4 are fastened to a curved half spring, by ties and receive in the center (on the hind axle) the two outside stays which connect with the reach, and (on the front axle) the shaft irons. These braces and shaft irons are connected with the standards by an eye and socket represented by I in Fig. 7. On the top of the curved half spring, is another spring, of steel, made straight and which receives at J J Fig. 4, the body loops. Under these springs and connected with them by a bolt and nut is an eye represented by K Fig. 4 which receives a coupling on the end of the upper leaf of the reach hereinafter referred to. Both axles are to be alike as above described except as follows viz: The front axle receives the lower leaf of the reach in a socket on a bolt, with nut and screw in the center of the middle standard, which standard revolves between the axle and strainer, and the upper leaf of the reach is attached to a bolt through the spring and center wheel and spring bar, on which it revolves. Said bolt is fastened by a nut on the top of the spring bar. On the top of the front spring is a center wheel represented by the yellow section of Fig. 9. Said center wheel is in three pieces and is represented in detail in Fig. 1. The first and second are alike and are represented by A Fig. 1, and have three bearings represented by the deep yel-

low portions of A Fig. 1. One on the outer edge of the said center wheel; one half way between the outer edge and the center; and one at the center. The first part of this center wheel is permanently attached to the top of the spring; and the second is also permanently attached to the spring bar. The third part of this center wheel is movable, separate and flat, and is called the follower. It is represented by B Fig. 1. The outer edge of parts one and two, project beyond the inner bearings exactly the thickness of this follower, and receive the follower in the center and when together are fastened by a bolt which goes through the upper leaf of the reach, the spring, the center wheel, and the spring bar, and receives a nut on the upper end. The principle of this center wheel is, that it allows of a double action, one above, and one below the follower, and removes the cramping consequent upon the ordinary construction. Said front spring bar receives at each end the front body loops. Fig. 1 also shows the position of the braces.

Third. The reach consists of two plates of spring steel about two inches apart with two standards A A Fig. 5, from six to twelve inches apart according to the size of the carriage and at equal distances from the axles with a screw and nut on both ends. Under the reach and from one to the other of these standards is a third plate B, C, Fig. 5, with an eye at each end. On each side of these eyes come the braces from the hind axle, and are fastened by a bolt through the braces and the eye with a nut and screw. At the eye B Fig. 5 are fastened the outside, and at the eye C the inside braces, allowing the braces to play when the reach is depressed. The upper leaf of the reach is attached at D D Fig. 5 to the under side of the spring by ties, and the lower leaf is attached at E E to the center of the middle standards by an eye and socket as before mentioned.

The benefit of this invention taken together, consists in the construction and combination of the different parts so as to allow a spring in every part, with out cramping others and still preserving the requisite stiffness and strength. The advantages it possesses, are great strength, durability, lightness, simplicity and beauty and also the facility of taking out and replacing any one part, without disturbing the others.

I am aware that the axles of carriages have heretofore been made in several pieces variously combined, that spring perches have also been made of several bars of steel riveted together in the middle, and that wheels have been made wholly of iron, to these therefore, I make no claim, but

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

The combination of the cross standards C C with the axle straining bar, and adjusting screws, substantially as described, for the purpose of accurately adjusting and gaging the track of the wheels by giving to the points of the axles more or less inclination, the lower spokes of the wheels being thus kept in a perpendicular, or inclined position, as may be preferred.

JONATHAN W. WHITNEY

Witnesses:

S. M. Chamberlain,

William S. Rice.