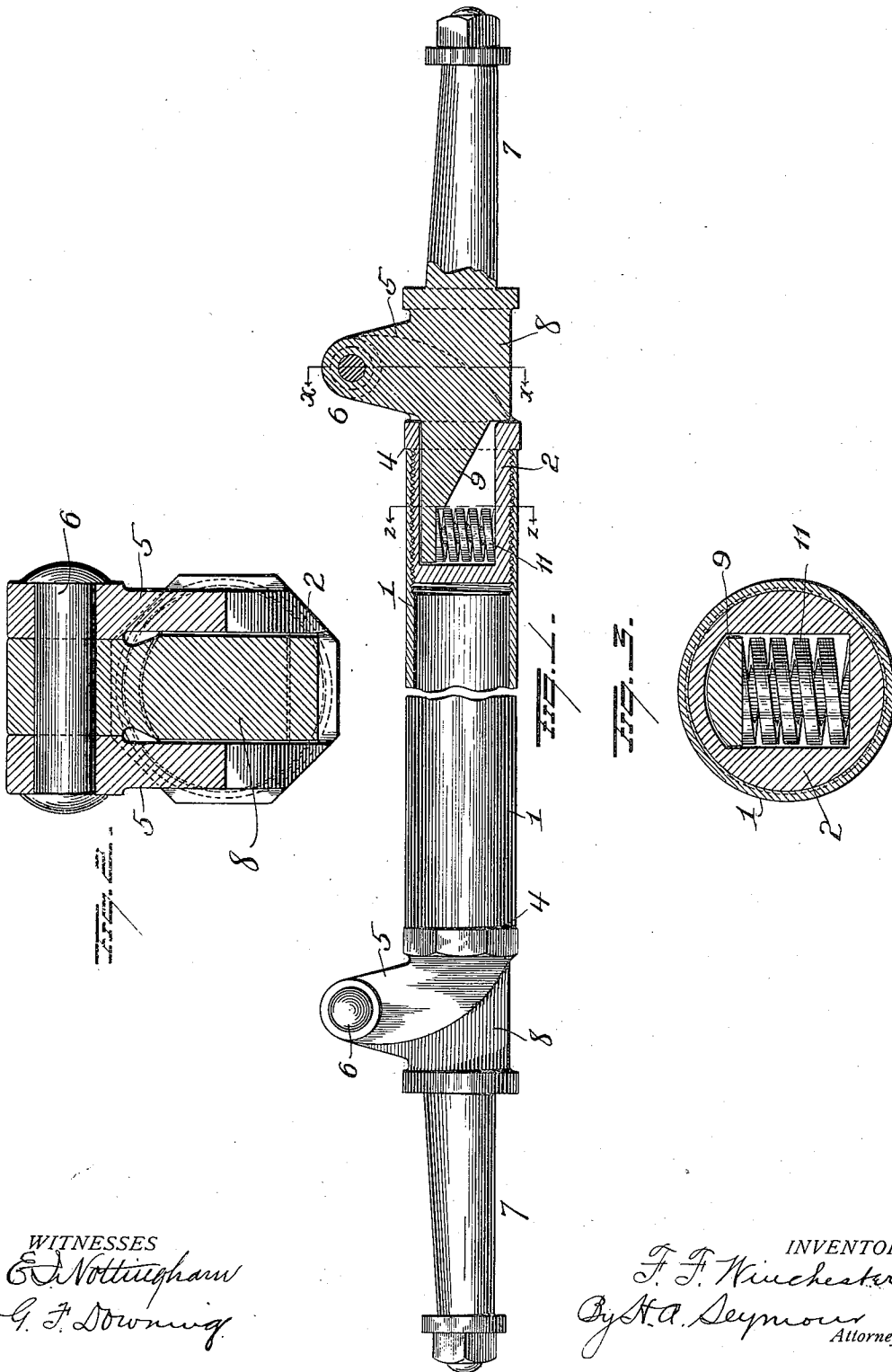


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VEHICLE AXLE.  
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1,069,213.

Patented Aug. 5, 1913.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

FRED F. WINCHESTER, OF ELLWOOD CITY, PENNSYLVANIA.

VEHICLE-AXLE.

1,069,213.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FRED F. WINCHESTER, of Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Vehicle-Axles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in vehicle axles, the object being to so construct the axle that shocks occasioned by the wheels of the vehicle striking obstructions in the roadway will be absorbed by the axle and not transmitted to the vehicle body.

A further object is to provide a yielding or spring axle that may be used on vehicles that have heretofore been without springs, and also that may be used in connection with the ordinary spring vehicle for increasing the resiliency and for preventing shocks from being transmitted to the main springs carrying the body of the vehicle.

With these objects in view my invention consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation partly in section of an axle embodying my invention. Fig. 2 is a view in vertical section on the line  $x-x$  of Fig. 1 and Fig. 3 is a view in section on the line  $z-z$  of Fig. 1.

1 represents the axle, which may be solid with hollow ends, but which is preferably made of a steel tube as shown, its ends being internally threaded to receive the externally threaded cylindrical boxes 2. Each box 2 is hollow, the cavity being rectangular in cross section as shown in Fig. 2, and open at the outer end as shown in Fig. 1, and each box is provided at its outer end with a shoulder 4, adapted to abut against the free end of the axle and limit the penetration of the box. Each box is provided at its outer end with the upwardly projecting parallel brackets 5, integral with the box and located at opposite sides of the cavity or recess in the latter. Each pair of brackets is provided with aligned holes for the passage of the bolt 6, on which the head 8 of the axle spindle 7, is pivotally mounted. The head 8 of each spindle 7 is provided with an inwardly projecting integral member 9, the top surface of which, when the parts are in normal posi-

tion, rests against the top wall of the recess in the box, and extends approximately throughout the length of the recess, while the lower face of said member is inclined upwardly part way of its length and is straight from said shoulder to the extreme rear end.

The inner end of the head 8 of the spindle abuts against the front end of the box and prevents injurious contact between the upper face of the member 9 and the top wall of the box 2, due to jolting while passing over rough roads, and each spindle is yieldingly held in proper position with relation to the axle by the heavy springs 11 which latter are located within the recesses in the boxes 2, and bear upwardly against the free ends of the member 9 of the spindle.

From the foregoing it will be seen that when the spindles are supported by the vehicle wheels, the weight on the body of the axle, depresses the latter and causes the spindles to turn on the horizontal bolts 6, thus depressing the inner ends of the members 9 and compressing the springs 11. These springs therefore permit the body of the axle to yield or give and not only absorb shocks, but also perform the function of the ordinary springs of a vehicle, or add to the resiliency of the vehicle as a whole if used on the ordinary spring vehicle.

Applicant's improvement is exceedingly simple, and old spindles can be removed and new ones applied by unskilled labor, and without the use of any tools other than a wrench.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but,

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination with an axle body having hollow ends, boxes secured within the ends of said body, each box having a recess open at its outer end, and a pair of brackets integral with outer end of each box, a spindle having a horizontal pivot connection with each pair of brackets, each spindle having a member projecting inwardly into its box, and a spring within the box and bear-

ing against the underside of the inwardly projecting member of the spindle.

2. The combination with an axle body having hollow ends, a box secured within  
5 each end of the body, each box being open at its outer end and provided with a pair of upwardly projecting integral brackets, the latter being located at opposite sides of the end opening of the box, a spindle having a  
10 horizontal pivot connection with each pair of brackets and provided with an integral member projecting inwardly into its box, and a spring within each box and bearing against the underside of the free end of its  
15 spindle member.

3. The combination with a hollow axle body having internally threaded ends, a

cylindrical box for each end of the axle body, each box being externally threaded to engage the internal threads in said body, and each  
20 provided with a pair of integral brackets, spindles each having a horizontal pivot connection with a pair of brackets and provided with an integral inwardly extending member projecting into its box, and a spring  
25 within each box and bearing against the underside of its spindle member.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRED F. WINCHESTER.

Witnesses:

JOS. W. HUMPHREY,  
REBECCA MCCONAHY.