(No Model.)

# T. G. MANDT.

## WAGON BOLSTER SPRING.

No. 563,497. Patented July 7, 1896.

Fig. 1.

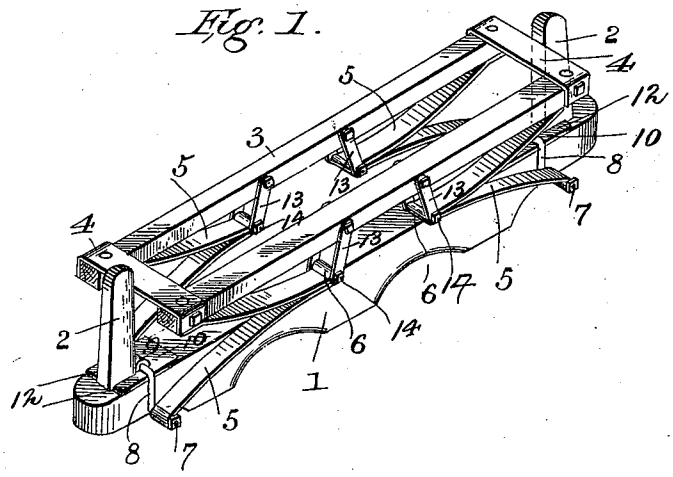



Fig. 2.

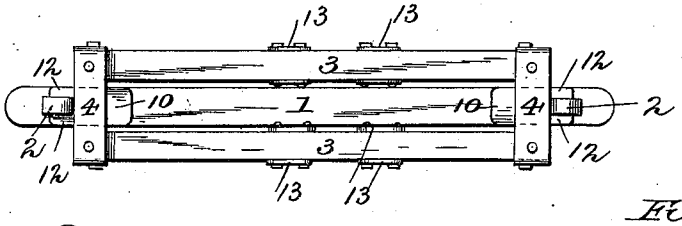



Fig. 4.

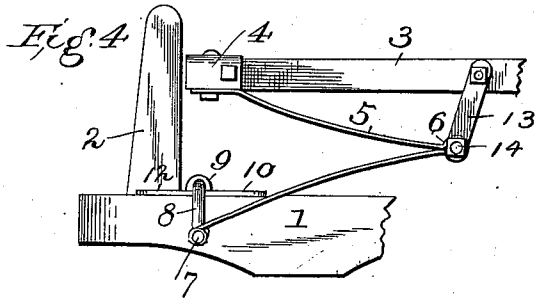
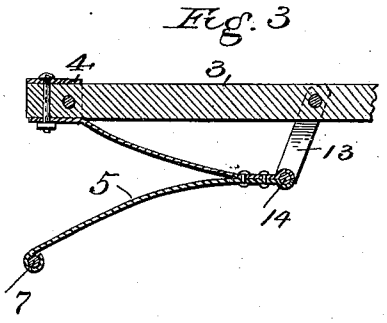



Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

TARGE G. MANDT, OF STOUGHTON, WISCONSIN, ASSIGNOR TO TILLA G. MANDT, OF SAME PLACE.

## WAGON-BOLSTER SPRING.

SPECIFICATION forming part of Letters Patent No. 563,497, dated July 7, 1896.

Application filed April 5, 1895. Renewed November 29, 1895. Serial No. 570,541. (No model.)

*To all whom it may concern:*

Be it known that I, TARGE G. MANDT, a citizen of the United States, and a resident of Stoughton, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Wagon-Bolster Springs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in bolster-springs for wagons and other similar vehicles, and its object is to provide an improved construction of the same, which shall possess superior advantages with respect to elasticity, carrying strength, durability, and efficiency in operation generally.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view showing a wagon-bolster and bed-pieces with my improvements applied thereto. Fig. 2 is a plan view, the bed-piece being removed. Fig. 3 is a longitudinal sectional view of one of the compound springs, showing it made in two parts or sections riveted together. Fig. 4 is a detail front elevation of the spring shown in Fig. 1, also showing one end of the bolster and wagon-bed.

In the said drawings the reference-numeral 1 designates an ordinary wagon-bolster provided near each end with standards 2, which hold the wagon-body against lateral movement.

The numeral 3 designates the bed-pieces located above the bolster and consisting of two rectangular bars or beams connected together at each end by metal plates 4.

The numeral 5 designates a compound spring, consisting of a spring-metal strip or plate bent over upon itself at the center, forming a loop 6. There are two of these springs at each end of the bolster, being arranged in pairs, and the upper ends of each pair of springs are secured to the outer ends of the bars or beams comprising the bed-piece. The lower ends of these springs are secured to cranks 7 of swinging shackles 8. These shackles consist of metal rods or bars bent into U shape with their ends bent laterally outward, forming the cranks, and are journaled in loops 9 of bearing-plates 10. These plates are formed with two longitudinal slits at their outer ends, forming three arms, the center one of which is bent inwardly into circular shape, forming the loop. The other arms 12 embrace the standards 2 and thus serve to hold the plates in place.

Bolted to the bars or beams constituting the bed-piece, at each side of the center thereof, are two downwardly-depending bars 13, the lower ends of which are connected together by means of bolts 14, passing through the loops or eyes of the springs.

In the modification shown in Fig. 3 the springs, instead of being made in a single piece, are composed of two parts riveted together at their inner ends.

In operation, when the springs are subjected to pressure, they roll together, so that the upper and lower sections thereof will support each other, by which a compound action is obtained, which adds to their resiliency and elasticity.

It is obvious that my invention may be used in connection with buggies, carriages, and other similar vehicles, as well as wagons, the ends of the springs being secured to the axles or side-bars instead of to the bolster, as above described.

Having thus fully described my invention, what I claim is—

In a vehicle, the combination with the bed-piece and bolster of the compound springs arranged in pairs at each end thereof, each consisting of a spring-metal plate bent over upon itself at the center and formed with an eye or loop, the depending yokes secured to the vehicle and engaging with said eyes, the plates formed with horizontal arms and loops, the standards at the outer ends of the bolster with which said arms engage, the swinging shackles journaled therein provided with cranks to which the lower ends of each pair of springs are secured, the upper ends of said springs being secured to the outer ends of the bed-piece, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

TARGE G. MANDT.

Witnesses:
B. E. WAIT,
GEO. N. CAMPBELL.