C. J. HOLMAN.

VEHICLE-SPRING.

No. 191,428. Patented May 29, 1877.

Fig. 1.

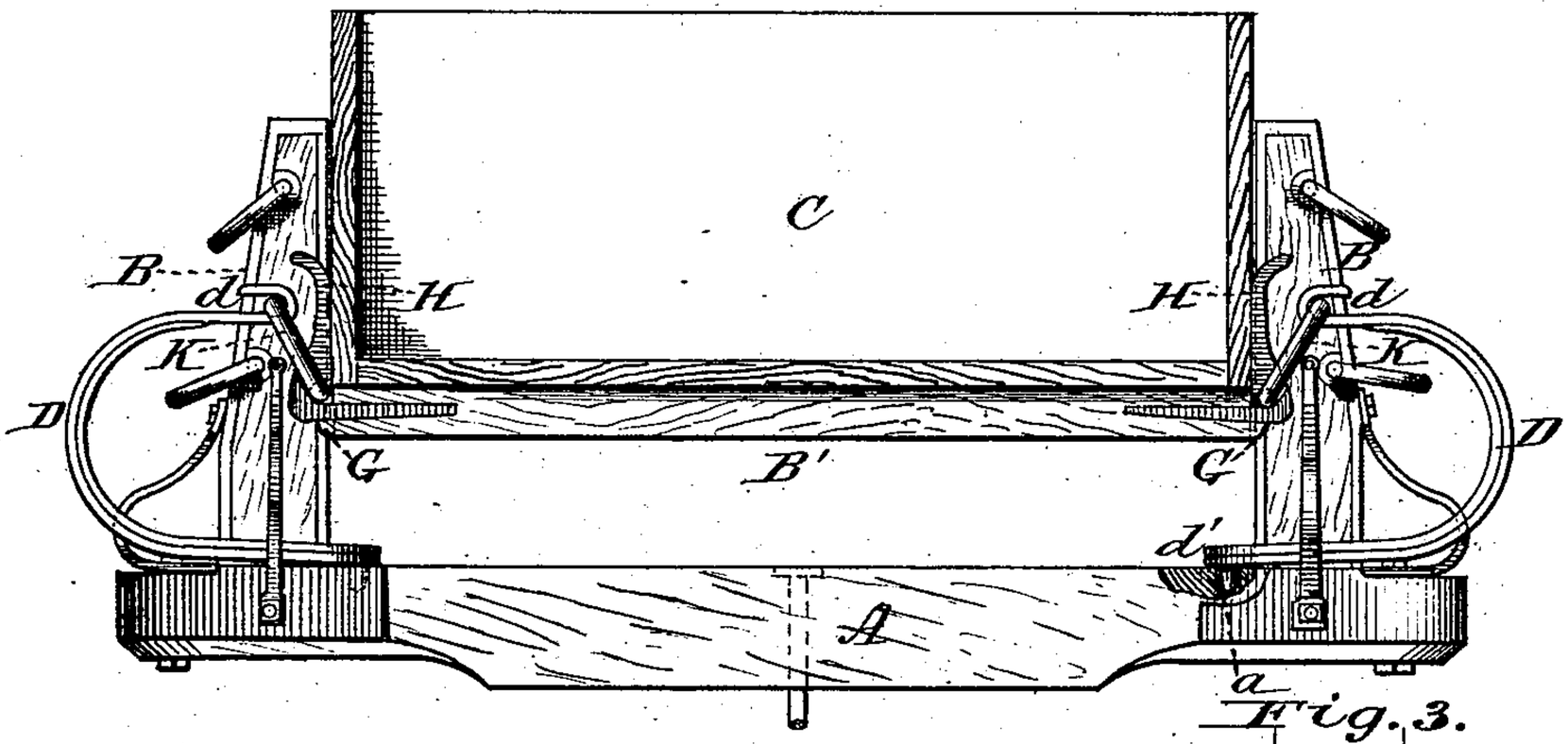


Fig. 2.

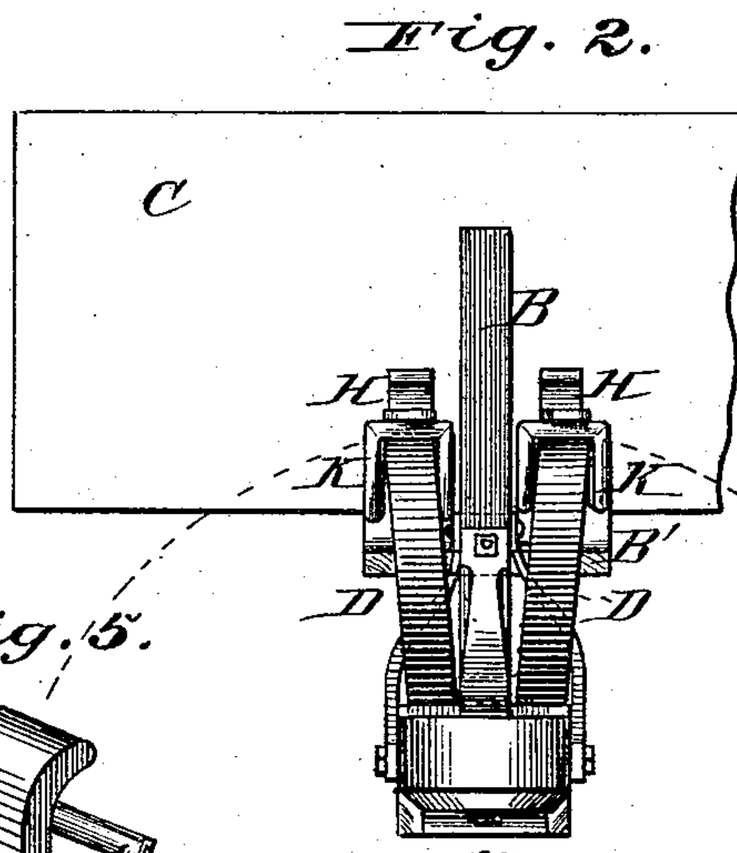


Fig. 3.

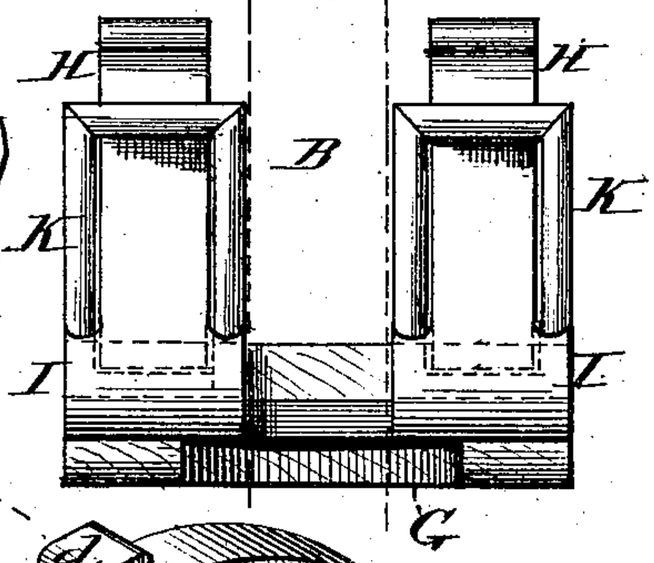


Fig. 4.

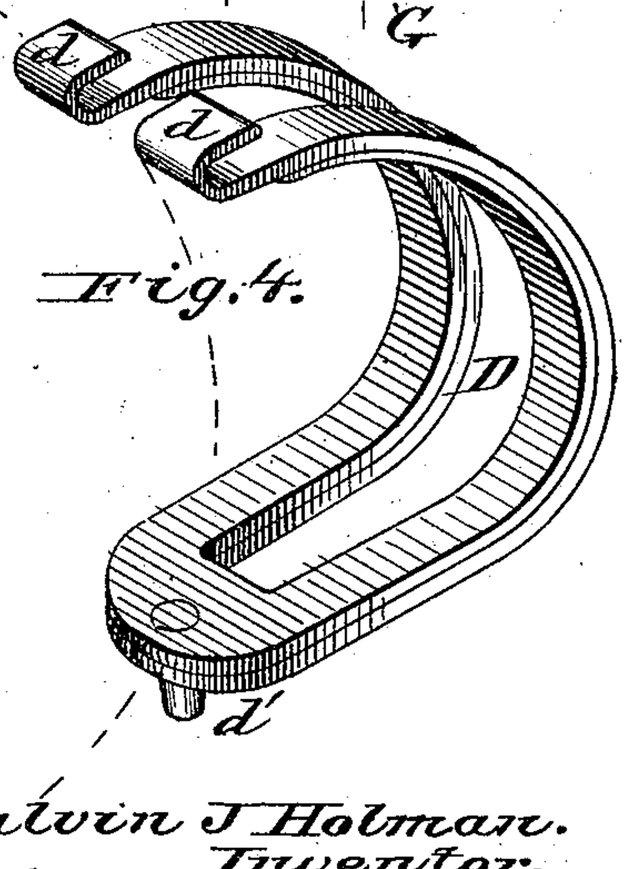
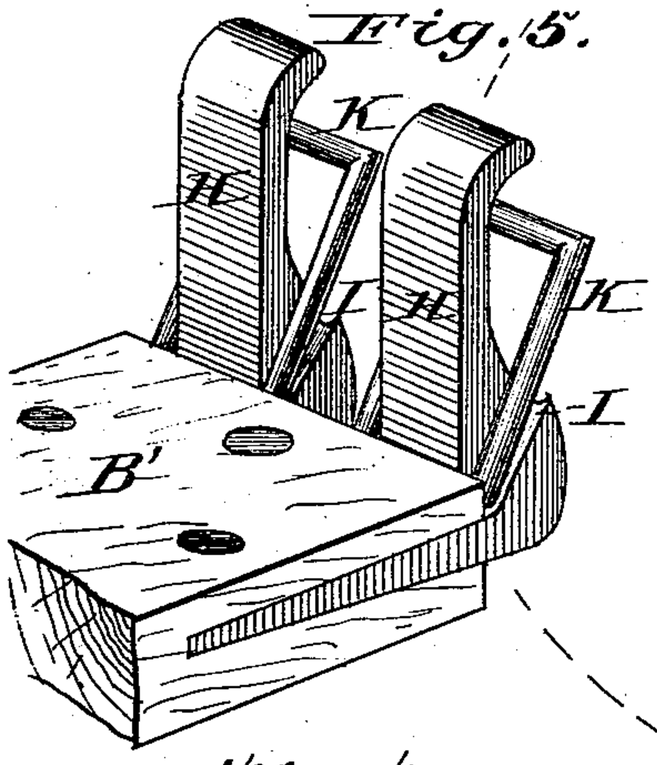


Fig. 5.



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UNITED STATES PATENT OFFICE.

CALVIN J. HOLMAN, OF TOLEDO, OHIO.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **191,428**, dated May 29, 1877; application filed May 16, 1877.

To all whom it may concern:

Be it known that I, CALVIN J. HOLMAN, of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Adjustable Springs for Wagons, of which the following is a specification:

My invention relates to certain improvements in that class of road-wagons known as "dead-bed" wagons, in which the body of the wagon rests directly upon the bed or bolster of the wagon, and is confined thereon between upright standards or stakes attached to the bed or bolster of the same.

The object of my invention is to provide for converting at will such dead-bed wagon into a spring-wagon, and vice versa; and to this end it consists, first, in the combination, with the bed or bolster of the wagon and the body of the same, of a peculiarly-constructed spring adapted to embrace the standards or stakes of the wagon, and rest upon the bed of the same, the upper ends of said spring being provided with hooks, and hold suitable links secured to the ends of cross-bars on which the body of the wagon rests, so as to support the same upon said springs, and enable said body and cross-bars to ride upon the same with proper elasticity, as more fully hereinafter set forth; second, in the combination, with the body of the wagon and the hooked ends of the springs, of upright curved brackets, attached to the cross-bars on which the body rests, and connected to the springs by means of links in such position with respect to the ends of springs that when the body of the wagon is unduly depressed the curved ends of the standards will fall in contact with the springs, and relieve the links of the strain thereon, as more fully hereinafter set forth.

In the drawings, Figure 1 is an end view of my invention; Fig. 2, a detached side view of one of the standards, the spring, and bolster; Fig. 3, an enlarged end view of the end of one of the cross-bars, its links, and curved upright brackets; Fig. 4, a detached perspective view of one of the springs, and Fig. 5 a detached perspective of the end of one of the cross-bars.

The letter A represents the bolster or truck of the wagon, and B the upright or vertical standards or stakes applied to the sides thereof, as usual. The letter C represents the wagon-body, which sets between the upright standards, and in the ordinary dead-bed wagons rests directly upon the bed or bolster. The letter D represents my improved spring, which consists of one or more bifurcated levers of metallic wire or plates of steel bent into semicircular shape, or shape approximating thereto, the upper or open end of such spring being formed or bent into hook form, as shown at *d*, and lower or united end being provided with a projection or stud, *d'*, which is adapted to set in a recess, *a*, formed for the purpose in the bolster A of the wagon.

The members of the bifurcated spring, when in position, embrace the standards of the wagon, the upper hooked ends being in position to engage the links K K on the cross-bars B', which support the wagon-body, so as to support said body and cross-bars on the springs, and give the said body the elastic motion of an ordinary spring-wagon.

The standards B of the wagon may be provided with the usual sockets for the purpose of securing the extensible standards usually employed in such wagons to build the standards up or make them higher.

The under side of the cross-bars B', which support the body of the wagon opposite the point at which the springs are secured, is recessed, as shown at G, so as to set over the ends of said springs, when the links are released from the hooks at the upper ends of said springs, in case the wagon is to be used as a dead-bed wagon and it is not desirable to remove said springs.

The letters H H represent the two vertical brackets attached to each end of the cross-bars B', and having their upper ends bent outwardly to overlap the hooked ends of the springs, for the purpose before mentioned. The lower portion of the brackets have lateral flanged sockets I, and the links K K are pivoted in transverse bearings or apertures in said brackets, and bear against the lateral flanged sockets, thereby greatly supporting the same. The links, being pivoted, are capable of having an oscillating or yielding movement.

The operation of my invention will be readily understood in connection with the above description.

The bifurcated semicircular springs are se-

cured in place by causing the two members of each to embrace their respective standards, their lower ends resting upon the bed or bolster of the wagon. The upper hooked ends are then engaged in the pivoted links attached to the ends of the cross bars B′, which support the body of the wagon, as before stated, thereby supporting said body upon the springs.

It will be seen that, as thus supported, the body of the wagon has a strictly-vertical spring movement between the upright standards or stakes, and that when excessively loaded the curved upper ends of the brackets H, attached to the ends of the cross-bars B′, fall in contact with the hooked ends of the springs, and relieve the links of a great portion of the strain, thus tending materially to increase the strength and durability of the wagon. Besides, as the springs or the members thereof embrace the standards, they do not interfere with the extensible standards usually employed with such wagons, which is a decided advantage.

When the wagon is to be used as a dead-bed wagon, it is simply necessary to release the springs from the links of the cross-bars B′, in which case the body will take its natural position between the stakes or standards, the recesses G in the bottom of the cross bars setting over the lower ends of the springs, and allowing the same, with the body, to ride upon the bed or bolster of the wagon, as usual.

What I claim, and desire to secure by Letters Patent, is—

1. The detachable springs, adapted to embrace the standards or stakes of the wagon, and resting upon the bolster thereof, their upper ends supporting the cross-bar on which rests the wagon-body, substantially as and for the purposes specified.

2. In combination with the bifurcated semicircular springs, provided with hook-shaped upper ends, the cross-bars B′, provided with links adapted to engage said hooked ends of the springs, substantially as and for the purposes set forth.

3. In combination with the springs having hooked shaped ends for supporting a wagon-body, the upright curved brackets H, secured to the cross-bars which support the wagon-body, and adapted to rest upon the hooked ends of the springs, substantially as set forth, for the purposes described.

4. The combination, with the semicircular springs D, having hooked ends *d*, of the cross-bars B′, having at each end the brackets H, provided with curved upper ends, and the pivoted links K K, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

C. J. HOLMAN.

Witnesses:
JAMES L. NORRIS,
J. A. RUTHERFORD.