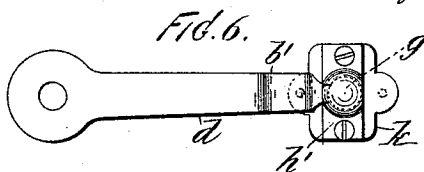
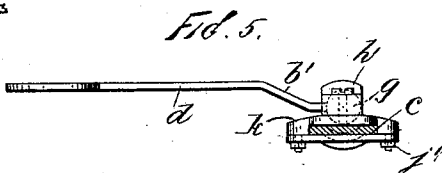
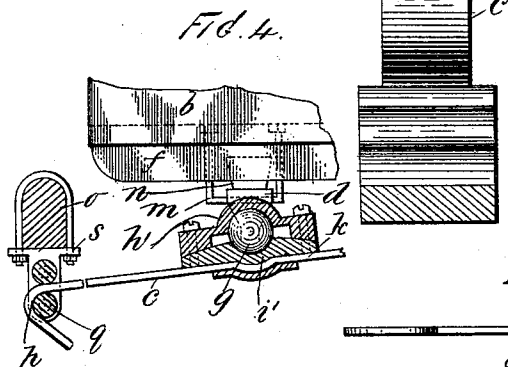
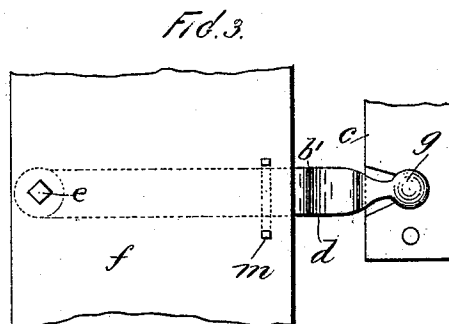
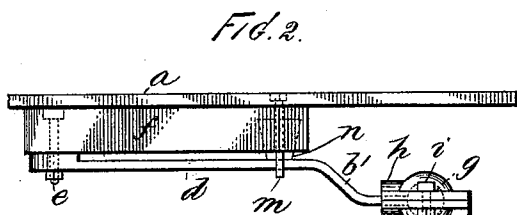
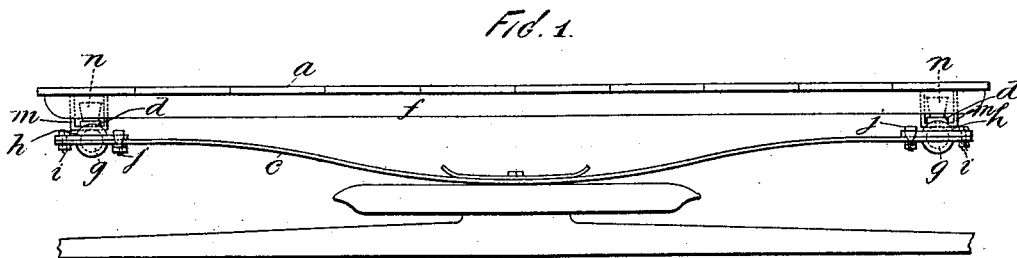


(No Model.)

G. T. CHAPMAN.
WAGON SPRING.

No. 500,532.

Patented June 27, 1893.



WITNESSES:

John Buckler,
O. J. Morgan

INVENTOR

Geo. T. Chapman

BY

A. P. Thayer

ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE T. CHAPMAN, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM HARVEY MERRITT, OF SAME PLACE.

WAGON-SPRING.

SPECIFICATION forming part of Letters Patent No. 500,532, dated June 27, 1893.

Application filed October 20, 1892. Serial No. 449,445. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. CHAPMAN, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Wagon-Springs, of which the following is a specification.

My invention relates to mounting the body or buck-board on the springs, and is designed to provide for the lengthening and shortening of the springs, and for the vibratory motions of the connecting parts with greater freedom, and less wear and stress of the parts, and thereby afford more easy play and uniform motion of the springs than as heretofore arranged all as hereinafter fully described reference being made to the accompanying drawings, in which—

Figure 1, is a front elevation of a buck-board mounted on a spring in accordance with my invention, the spring being mounted on the axle. Fig. 2, is a side elevation of the same on a larger scale with the buck-board broken off and the axle in transverse section. Fig. 3, is a plan view of some of the parts, also enlarged. Fig. 4, is a front elevation of a portion of the body of a side bar wagon mounted on the spring in accordance with my invention, and a transverse section of a side bar. Fig. 5, is a cross section of the spring and side view of the bearing bracket and clip for connecting it to the spring in the most preferred form of construction. Fig. 6, is a plan view of the devices of Fig. 5.

a, represents the buck-board, *b*, the body of the side bar wagon, and *c*, the spring. Both the buckboard and the body are represented as connected to the spring through the instrumentality of bearing brackets *d*, of like character in general principle as are shown and broadly claimed in my Patent No. 477,622 and are therefore not broadly claimed herein, said bearing brackets (hereinafter called brackets for convenience) being at one end connected to the body or buck-board by a pivotal joint *e*, allowing them to swing horizontally and at the other end connected to the spring *c*, by a ball and socket joint allowing such vibration as the lengthening and shortening of the spring through vertical play demands.

Both the body and buck-board will be here-

inafter referred to as body except when the buck-board is to be specifically distinguished. In this case I represent the brackets *d*, as straight bars except as they may be bent at *b'*, in the neck of the ball in some cases as in Figs. 2, 3, and 5, and pivoted to the cross bar *f* instead of the bent bars connected directly to the body as shown in the said Letters Patent. The subject of the claim in this case is the ball and socket connection of the brackets with the springs, which I find in practice to be much superior to the concave seats and the convex bearing points of the brackets of the aforesaid patent. I now make the said brackets with a ball *g*, on the end connected with the spring and provide a socket therefor on the spring so that besides the vibrating motion of the brackets effectually compensating for the lengthwise variations of the spring, I have the entirely free and universal motions of the parts relatively to each other absolutely essential for the best action, there being no hindrance whatever in any direction, which not only affords much more satisfactory action of the springs, but largely relieves the parts from wear and danger of fracture.

When the brackets are to be mounted at the ends of the springs as in the arrangement for buck boards, Figs. 1, 2 and 3, I prefer to make the cavity for the lower half of the socket directly in the spring plate near its ends, and provide a cap *h*, with the other cavity in it for the upper half of the socket, and secure the cap to the spring plate in any approved way as by the bolt *i*, inserted through holes at the outer extremities and by a clip *j* on the other side of the socket where it is preferable not to make a hole through the spring because of its breaking effect. And I may provide the socket in the same manner when the brackets are mounted at a greater distance from the ends of the spring and the spring is suspended at the ends as in side bar wagons Fig. 4, preferably using like clips as *j*, or other suitable means for securing both ends of the cap without holes through the spring, but I prefer in this case to use a bearing plate *k*, having the lower cavity for the socket in it, instead of making the cavity in the plate, and fasten said bearing plate to the spring by the clamps *j'* or other approved means with

the caps as *h'* screwed on to the bearing plates. When such bearing plate is used for the lower cavity the spring will preferably be slightly recessed and the plate made with a spur *l'* on the bottom to enter such recess to prevent the bearing plate from slipping out of place on the spring.

A guard yoke *m* pendent from the body extends under each bracket near the spring to keep the said brackets and the body in their due parallel relation and prevent wrenching the pivot joints *e*, when sudden severe upward jerks of the body would otherwise tend to thrust them in that direction more quickly than the movements of the spring, but this is the subject of a claim in another case filed with this and is not claimed herein.

The bracket may bear against the under side of the cross bar *f*, along the whole breadth of the latter but I prefer to have a short bearing at the pivot *e*, with another bearing as at *n*, dotted in Figs. 1, 2 and 4, but this is also the subject of a claim in another application

for a patent filed at the same time with this and is not claimed herein.

In the side bar wagon I connect the springs to the side bars *o* by the hooked ends *p* of the spring hooked on a roller *q*, suspended under the side bar by clips *s*, but this is also the subject of another application for a patent filed at the same time with this and is not claimed herein.

I claim—

The body mounted on the springs by brackets pivoted at one end to said body so as to vibrate laterally, and at the other end connected to the springs with a ball and socket joint having uniform universal motion substantially as described.

Signed at New York city, in the county and State of New York, this 30th day of September, A. D. 1892.

GEO. T. CHAPMAN.

Witnesses:

W. J. MORGAN,
C. E. WHITNEY.