S. G CLOUGH.

Carriage-Spring.

No. 51,697. Patented Dec. 26. 1865.

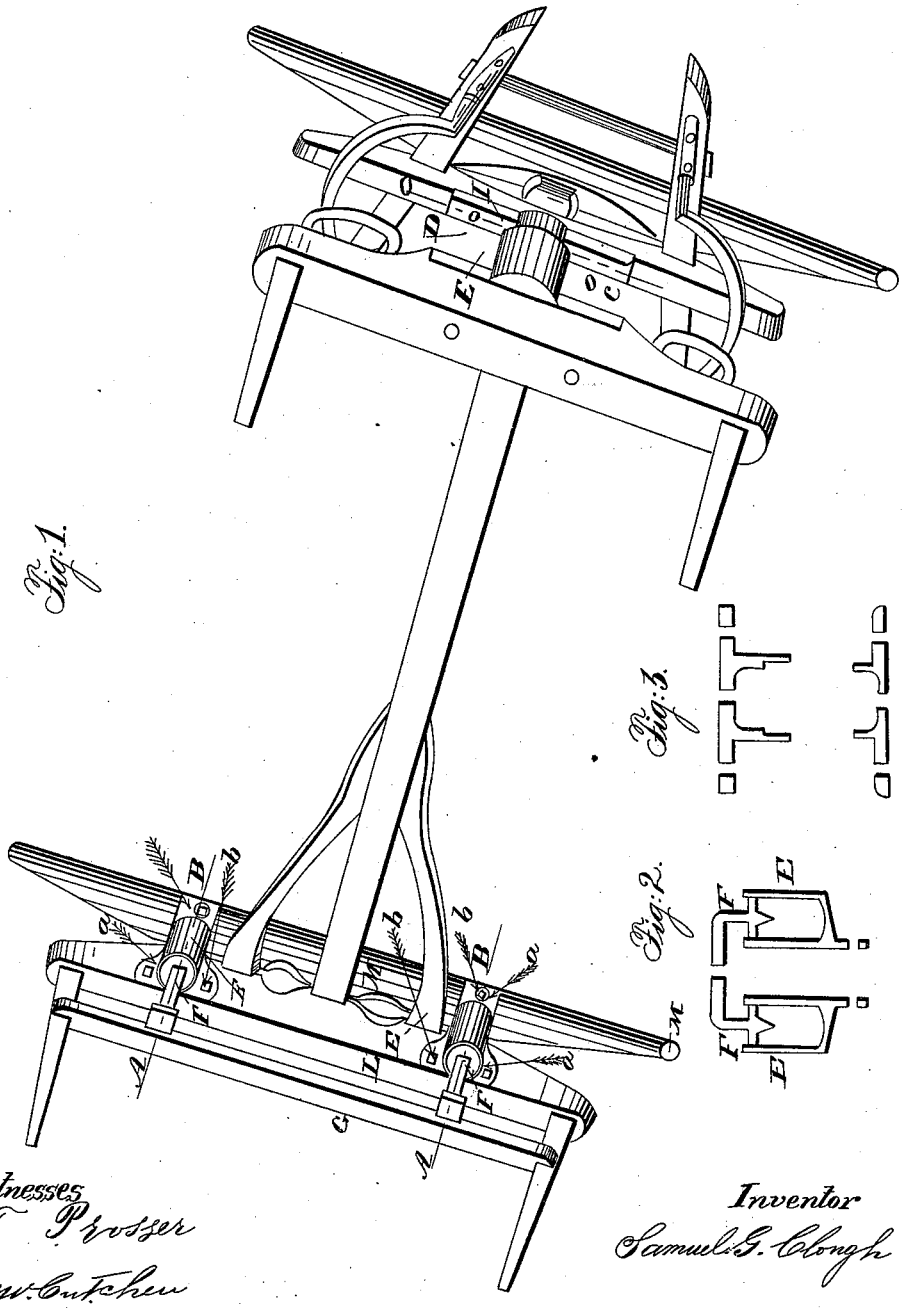

Fig. 1.

Fig. 3.

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL G. CLOUGH, OF WAUPUN, WISCONSIN.

IMPROVEMENT IN RUBBER SPRINGS FOR WAGONS.

Specification forming part of Letters Patent No. **51,697**, dated December 26, 1865.

To all whom it may concern:

Be it known that I, SAMUEL G. CLOUGH, of the village of Waupun, county of Dodge, State of Wisconsin, have invented a new Method of Attaching or Applying Rubber Springs to Wagons; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon, in which—

Figure 1 is a perspective view of the running-gear of a lumber-wagon with my improvement attached or applied; Fig. 2, a section of the cups on the hind axle and bolster, in which the springs are placed, through the red lines A B. Fig. 3 is a longitudinal section through forward cups on the line C D, which are placed upon the forward bolster and sand-board.

The nature of my invention consists in attaching two sets of cast-iron cups to the hind axle and bolster of a wagon in such manner as to receive rubber springs, on which pistons are placed, which are attached to the cross-bar above the bolster, and which supports the box or load; also, in using two cups for the forward axle, which is made in such a manner as to hold the spring, answer the purpose of bolster-plates, and keep out the dirt and gravel. Thus it will be seen that good durable springs are easily and permanently applied to a lumber-wagon.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my wagon in any of the well-known forms, and apply or attach my improvement thereto in the following manner: On each side of the hind bolster, L, and axle M I attach two cups, E E, Fig. 1, in which I place rubber springs. On these springs press a double piston, F F, Fig. 1, which is connected to the cross-bar G, that sustains the load. It will be seen, Fig. 1, that these cups have flanges *a* fitted to them, through which bolts *b* pass, that fasten them to the bolster and axle of the wagon, thereby affording a durable mode of attaching them thereto and to each other.

Another important object is accomplished by my mode of attachment—viz., the strengthening of the axle by connecting it with the bolster by means of the bolts and flanges on the cups. In my arrangement I do not use a rubber spring thinking it to be new or its application to lumber-wagons as new, but simply from the fact of its being a good elastic spring. Neither do I use the cups thinking them to be new, nor could I without adapting them to the specific purpose; but to do this they need to be changed so as to conform to the sides of the bolster and axle on which they are placed and afford ready means of attaching them thereto. To accomplish this I cause a flange, *a*, to be made so as to project below the bottom and from each side of the cup, so as to permit bolts to pass through them to confine them to the bolster and axle. These bolts, passing through the flange on one side of the bolster and axle, then through the bolster and axle, and then through the flange on the other side, are confined by means of a head and nut in the ordinary manner. Between the front bolster and sand-board I insert another spring by means of two cups, as shown, Fig. 1, H I. These cups serve the purpose of bolster-plates and take their place when applied. To prevent the dirt and sand from falling into these front cups I make the upper one to project down over the lower one, as seen in Fig. 3, the rubber being contained in both cups.

I am aware that rubber springs have been applied to lumber-wagons by means of clasps passing below the hind axle and pins passing through the axle and bolster communicating with the cross-bar. There are serious objections to this mode of application. The clasp passing below the axle, it is liable to be caught by obstructions and broken. Another objection is that the passing of the pin through the axle and bolster tends to weaken them, making them liable to be broken when heavily loaded.

It will be seen by my arrangements that the above objections are fully obviated; and instead of diminishing the strength of the bolster and axle by connecting them together, I greatly increase their strength and durability.

I am aware, also, that springs have been applied to the forward bolster and axle by means of a cup cut into and placed upon the axle, completely cutting into the sand-board and

deeply into the axle. There are objections to this mode of application, among which is the cutting into of the sand-board, cutting into the axle, and having the cup in which the rubber is placed open upward.

It will be seen that by my arrangement all of the above objections are obviated, besides affording a much easier mode of application.

There are no alterations necessary to apply it to ordinary wagons, and when applied it increases their strength and durablity instead of diminishing it.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The combination and arangement of the cups E E, the axle M, and bolster L with the double-headed piston F F and cross-bar G, all constructed and operating substantially as set forth, for the purpose described.

SAMUEL G. CLOUGH.

Witnesses:
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