J. BULLARD.

Carriage-Spring Shackle.

No. 110,006. Patented Dec. 13, 1870.

fig. 1.

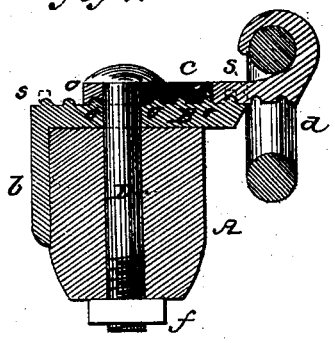
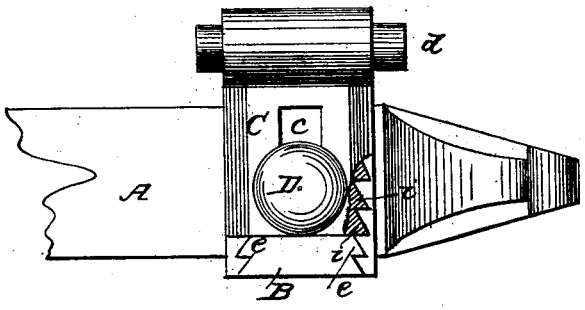



fig. 2.




Witnesses:
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# United States Patent Office.

JOHN BULLARD, OF NORTH HYDE PARK, VERMONT.

Letters Patent No. 110,006, dated December 13, 1870.

## IMPROVEMENT IN ADJUSTABLE SHACKLES FOR CARRIAGE-SPRINGS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN BULLARD, of North Hyde Park, in the county of Lamoille and State of Vermont, have invented a new and useful Improvement in Shackles for Carriage-Springs; and I do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to fully understand and to make and use the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 is a section of the shackle and the rocker to which it is attached; and

Figure 2 is a top view of the shackle and part of the rocker.

Similar letters of reference indicate like parts in the two figures.

My invention relates to that class of shackles which is secured transversely to the rocker, near the ends thereof, for the attachment of the side springs of carriages.

With shackles as heretofore constructed, if there was a difference between the springs on the same vehicle, or in case of the load being heavier upon one side than on the other, these defects could not be easily remedied, if at all.

My improvement consists in making an adjustable shackle, whereby the springs, either or both, can be readily tightened as required, so as to make the body of the wagon balance evenly.

Referring to the drawing—

A represents a portion of what is known as the "rocker" of a wagon, carriage, or other vehicle, which is the part resting upon the axle or upon the ordinary elliptic spring secured to the axle.

B represents the lower plate of the shackle, formed with a vertical flange or lip, *b*, and secured across the rocker, near the end thereof by screws or bolts or in any other approved manner.

C is the upper plate of the shackle, made with a slot, *c*, and carrying a loop, *d*, which is attached, so as to swing freely, by bending over the end of the plate.

The plate C is held in contact with the lower plate by a headed bolt, D, passing through the slot in the upper plate, a round or square opening in the plate B, and thence through the rocker, being provided at its lower end with a nut, *f*.

The end of the side spring is bent and hooked onto the link or loop *d*.

In order to prevent the slipping of the upper plate of the shackle I form rows of teeth *e* at the sides of the lower plate which engage with corresponding indentations, *i*, in the plate C, as shown in fig. 2, said plate being made with flanges at the sides, in which the teeth *i* are formed.

Instead of teeth *e i*, as just described, the contiguous surfaces of the plates B C may be transversely ribbed and grooved, as shown at *o o*, fig. 1; or the same result may be accomplished by forming, on the one plate, short pins or studs adapted to enter corresponding recesses in the other, as represented at *s s*, in dotted lines, fig. 1.

To adjust the shackle the nut *f* is loosened to permit the disengagement of the plate or cap C, which is then moved, tightening or slackening the attached spring as required, and is again made fast by screwing up the nut *f* until the ribbed or toothed surfaces are engaged and bound rigidly together.

The device is obviously simple, durable, and effective, and, on account of its easy adjustment, will prove highly useful for correcting any inequality in the springs or unequal disposition of the load.

Having thus described my invention,

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

An adjustable shackle for carriage-springs, constructed and applied substantially as herein described.

JOHN BULLARD.

Witnesses:

C. E. STUFFLEBEAR,

LUCIUS H. NOYES.