

(No Model.)

H. K. JAMES & L. G. MAYER.
COMBINED SPRING AND SHACKLE.

No. 503,087.

Patented Aug. 8, 1893.

Fig. 1.

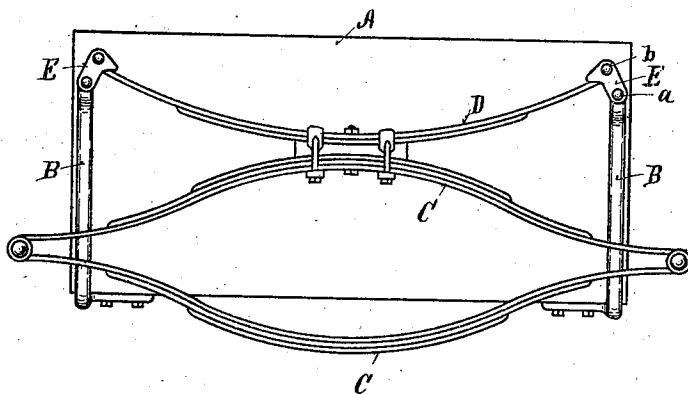


Fig. 2.

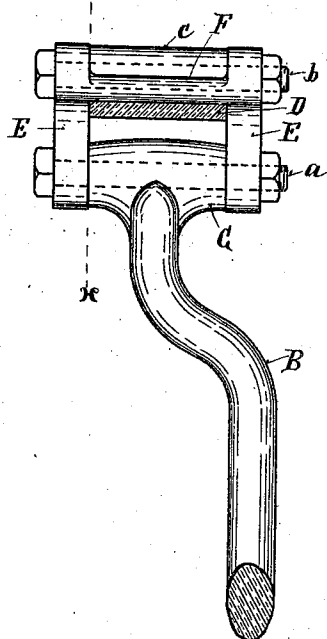
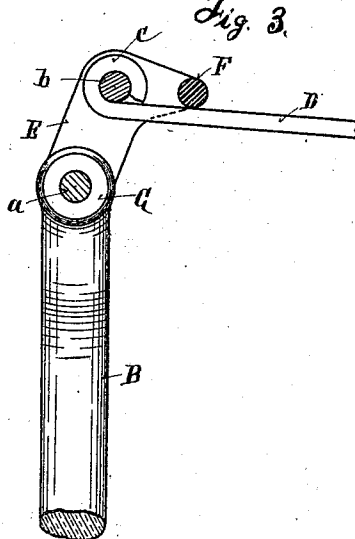


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

HOWARD K. JAMES AND LOUIS G. MAYER, OF LAWRENCEBURG, INDIANA.

COMBINED SPRING AND SHACKLE.

SPECIFICATION forming part of Letters Patent No. 503,087, dated August 8, 1893.

Application filed May 4, 1893. Serial No. 472,996. (No model.)

To all whom it may concern:

Be it known that we, HOWARD K. JAMES and LOUIS G. MAYER, citizens of the United States, residing at Lawrenceburg, in the county of Dearborn and State of Indiana, have invented certain new and useful Improvements in a Combined Spring and Shackle, of which the following is a specification.

One of the objects of our invention is to employ a spring in lieu of the cross bar for connecting an elliptic spring to a carriage body.

Another object of our invention is to so combine the spring with the body loop that an undue rising motion is avoided by a stop on the shackle.

The various features of our invention are fully set forth in the description of the accompanying drawings making a part of this specification, in which—

Figure 1 is an end elevation of our improvement attached to a carriage body. Fig. 2 is a side elevation of the body loop, shackle and spring attached. Fig. 3 is a section on line *x, x*, Fig. 2.

A represents an ordinary carriage body; B, the body loop which is attached in the ordinary manner.

C represents an elliptic spring; D, a supplemental spring; E, shackles hinged to the spring D and to the body loop.

F represents a lug or stop on the inner edge of the shackle.

G represents the eye of the body loop which is secured to the links of the shackle by a bolt *a*. Bolt *b* is a bearing for the eye *c* of the spring D; the eye of the body loop forms a firm bearing and support for the shackle.

Mode of operation: As the springs are depressed by the weight the shackles E turn on their centers *a* as the spring lengthens by compression; when the springs recoil the shackles E are drawn together and the stop F limits their inward movement and prevents undue flexation of the spring, and undue vibrations of the carriage body. This is an important feature as it enables a spring D to be used in lieu of the spring bar.

Having described our invention, what we claim is—

1. The combination of the body loops B, the springs C, D, shackle E provided with a stop F, substantially as specified.

2. In combination with the spring D, the body loops B, provided with an eye G, and the shackle E provided with the stop F, substantially as specified.

In testimony whereof we have hereunto set our hands.

HOWARD K. JAMES.
LOUIS G. MAYER.

Witnesses:

W. E. ENGART,
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