(No Model.)

W. W. KRUTSCH.

CARRIAGE TOP SPRING.

No. 534,892. Patented Feb. 26, 1895.

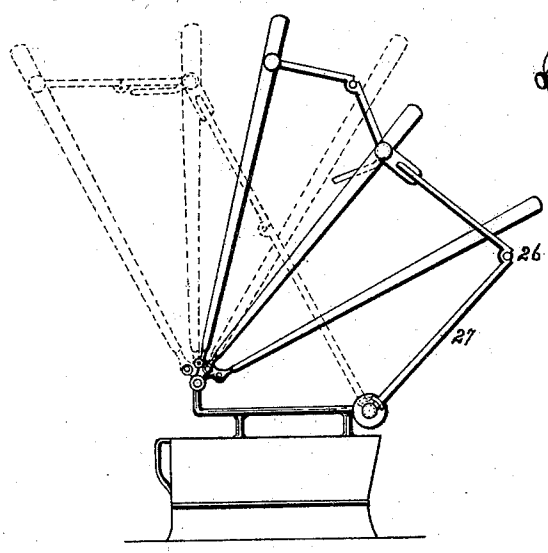

Fig. II.

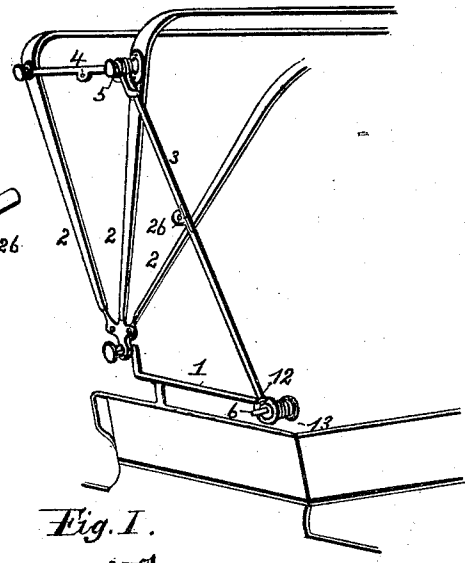

Fig. I.

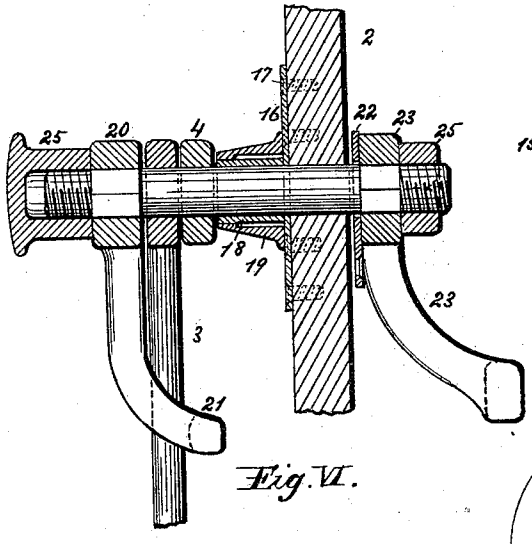

Fig. VI.

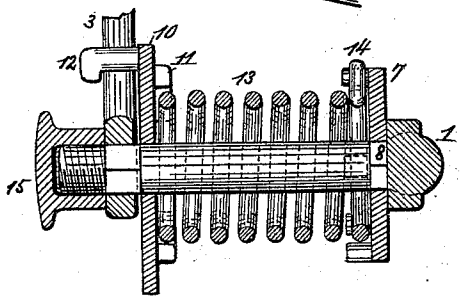

Fig. III.

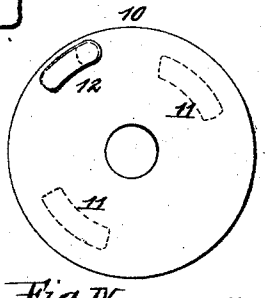

Fig. IV.

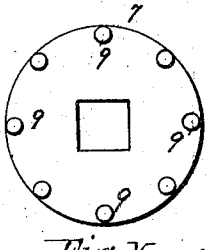

Fig. V.

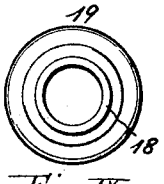

Fig. IX.

Fig. VIII.

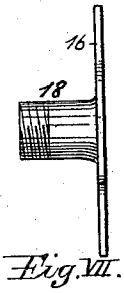

Fig. VII.

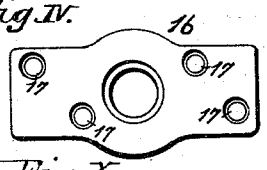

Fig. X.

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UNITED STATES PATENT OFFICE.

WILLIS W. KRUTSCH, OF COFFEYVILLE, KANSAS, ASSIGNOR OF ONE-HALF TO LOREN H. STEVENS, OF SAME PLACE.

CARRIAGE-TOP SPRING.

SPECIFICATION forming part of Letters Patent No. 534,892, dated February 26, 1895.

Application filed August 25, 1894. Serial No. 521,341. (No model.)

To all whom it may concern:

Be it known that I, WILLIS W. KRUTSCH, of Coffeyville, in the county of Montgomery, in the State of Kansas, have invented certain new and useful Improvements in Carriage-Top Springs and Operating Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in carriage top springs and operating devices for lowering carriage tops provided therewith, and my invention consists in certain features of novelty hereinafter described and pointed out in the claims.

Figure I represents a perspective view of a buggy top with my improvements thereon. Fig. II represents a side elevation with the top partly down and in dotted lines with the top up showing the application of my improvements. Fig. III represents a detailed view partly in cross sections of my improved carriage top spring and the plates by which they are held in position. Fig. IV represents the outer plate on which the spring is held in position. Fig. V represents the inner plate by which the spring is held in position showing the lugs by which the tension of the spring is adjusted. Fig. VI represents a detailed view partly in cross section of the device for letting the top down. Fig. VII represents the plate and collar forming the journal for the rod carrying the top stays. Fig. VIII represents in cross section a sleeve threaded to be carried on the collar shown in Fig. VII. Fig. IX represents an end view of the sleeve and collar. Fig. X represents a front elevation of the plate carrying the sleeve and collar.

Similar numerals refer to similar parts throughout the several views.

1 represents the shifting rail.

2 represents the top bows.

3 and 4 represent the top stays.

5 represents the rod by which the top stays are carried on and secured to the top bow.

6 represents the rod or pin by which the top stay 3 is carried on and secured to, the shifting rail.

7 represents a plate carried on to pin 6 adjacent to the shifting rail. The opening in this plate is squared to receive the squared portion 8 of the pin 6 so that it may not turn thereon. It is provided on its inner face with the lugs 9.

10 is the outer plate carried on the pin 6 adjacent to the top stay. It is provided on its inner face with the lugs 11 and on its outer face with the hook 12 engaging the top stay.

13 is the top spring the outer end of which is engaged and held in position by the lug 11 on the inner face of the outer plate. The inner end of the spring is formed with the hook 14 which engages one of the lugs 9, the tension of the spring being adjusted and determined by the engagement of the hook with the lug.

15 is a screw cap threaded on the pin 6 by which the top stay and the several parts are retained on the pin.

16 is a plate secured to the top bow by the screws 17. It is provided with the collar 18 upon which is threaded at the outer end the sleeve 19 the purpose of which will be hereinafter mentioned.

20 is an arm carried on the rod 5 the lower end of the arm at 21 being turned inward and embracing the top stay 3.

22 is a plate on the inner side of the top bow.

23 is an arm or handle operating the arm 20 to let the top down.

24 and 25 are nuts securing the several parts upon the pin 5.

The operation of my improved device is very simple.

Pressing down upon the arm 23 the pressure is carried through the arm 20 to the top stay 3 and the joint therein at 26 is easily broken and the top let down. When let down the weight of the top is carried on the lower section 27 of the top stay 3 near the lower end of which, it is engaged by the hook 12 on the plate 10, the lug 11 on the inner face of which bears on the end of the spring 13 whereby the weight of the top is supported by the spring and the strain on the top stay and the top bows is relieved, the weight of the top being taken off of the top bows which would otherwise lie fully and entirely across the pin 6 in which position there is constant and great danger of breaking the top bow. This consti-

tutes one of the principal advantages among the many presented by my improvement.

Having thus fully described my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the shifting rail, the shifting rail arm and the top stay, of a plate 7 carried on the shifting rail arm adjacent to the shifting rail, lugs on the face of said plate, a coil spring carried on the shifting rail arm, a hook on one end of said coil spring in the direct line of the coil and adapted to engage one of the lugs on the plate for the adjustment of the tension of the spring, a plate on the outer end of the shifting rail arm, a lug on the inner face of said plate, engaging the end of the coil spring, and a hook on said plate engaging the top stay, substantially as shown and described.

2. The combination with the shifting rail, the shifting rail arm and the top stay, of a plate 7 carried fixedly on the shifting rail arm, adjacent to the shifting rail, lugs 9 on the face of said plate, a coil spring 13 carried on the shifting rail arm, a hook 14 at one end of said coil spring formed integral therewith in the direct line of the coil and adapted to engage one of the lugs 9 on the plate 7 for the adjustment of the tension of the spring, a plate 10 on the outer end of the shifting rail arm, a lug 11 on the inner face of said plate engaging the end of said coil spring, and a hook 12 on said plate 10 engaging the top stay, substantially as shown and described.

3. The combination with the shifting rail, the shifting rail arm, the top stay, a plate carried fixedly on the shifting rail arm adjacent to the shifting rail, lugs on said plate, a coil spring carried on the shifting rail arm, a hook at one end of the coil spring formed integral therewith in direct line of the coil and adapted to engage one of the lugs on the plate for the adjustment for the tension of the spring a plate on the outer end of the shifting rail arm, a lug on the inner face of said plate engaging the end of the coil spring, and a hook on said plate engaging the top stay, of a pivot pin pivoted in the top bow and upon which the top stay is pivoted at its upper end, an arm carried fixedly on said pivot pin, a loop on said arm embracing the top stay, and a handle fixed on said pivot pin inside of the top to operate said arm substantially as shown and described.

WILLIS W. KRUTSCH.

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