

(No Model.)

W. S. HAGGARD.

WAGON SPRING.

No. 354,548.

Patented Dec. 21, 1886.

Fig. 1.

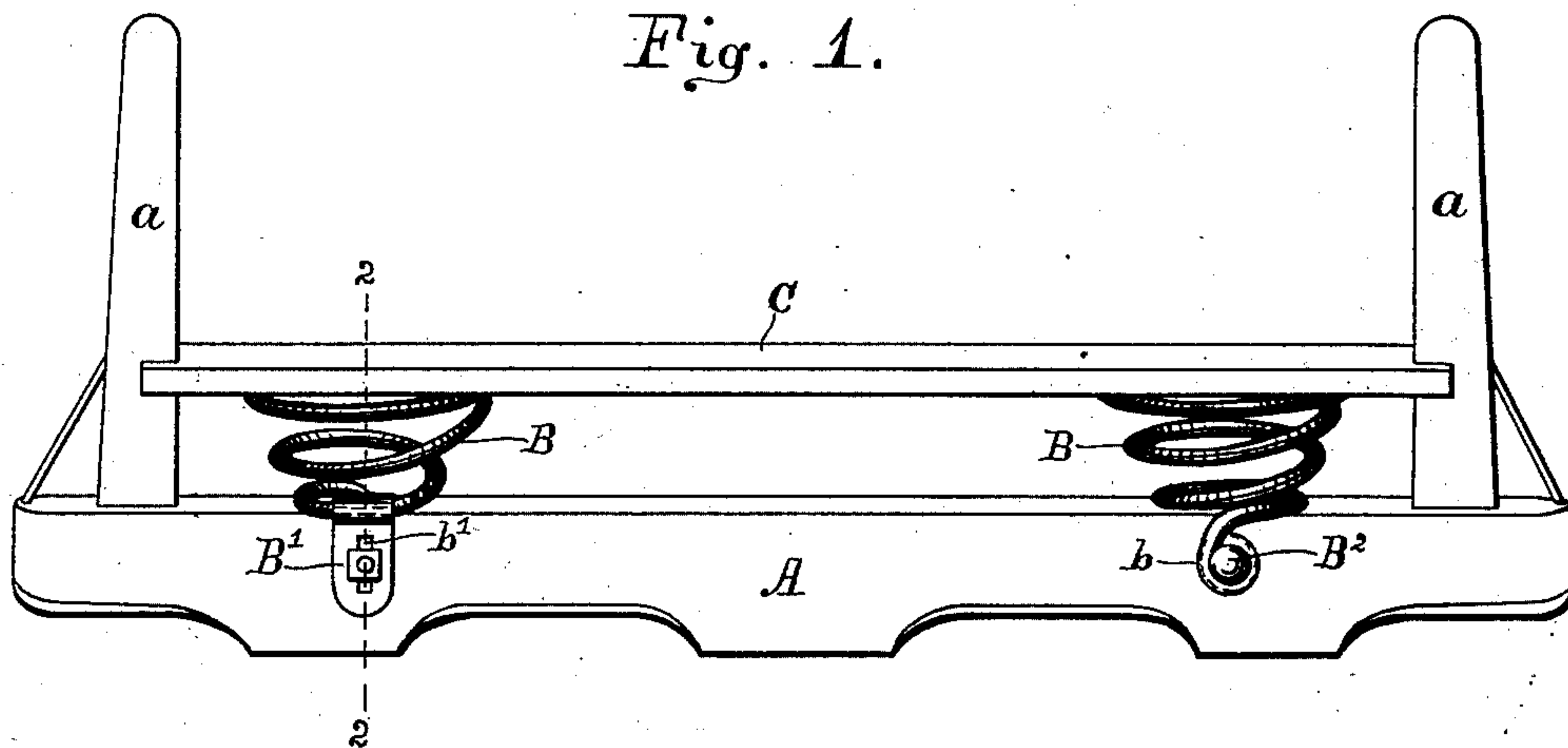


Fig. 2.

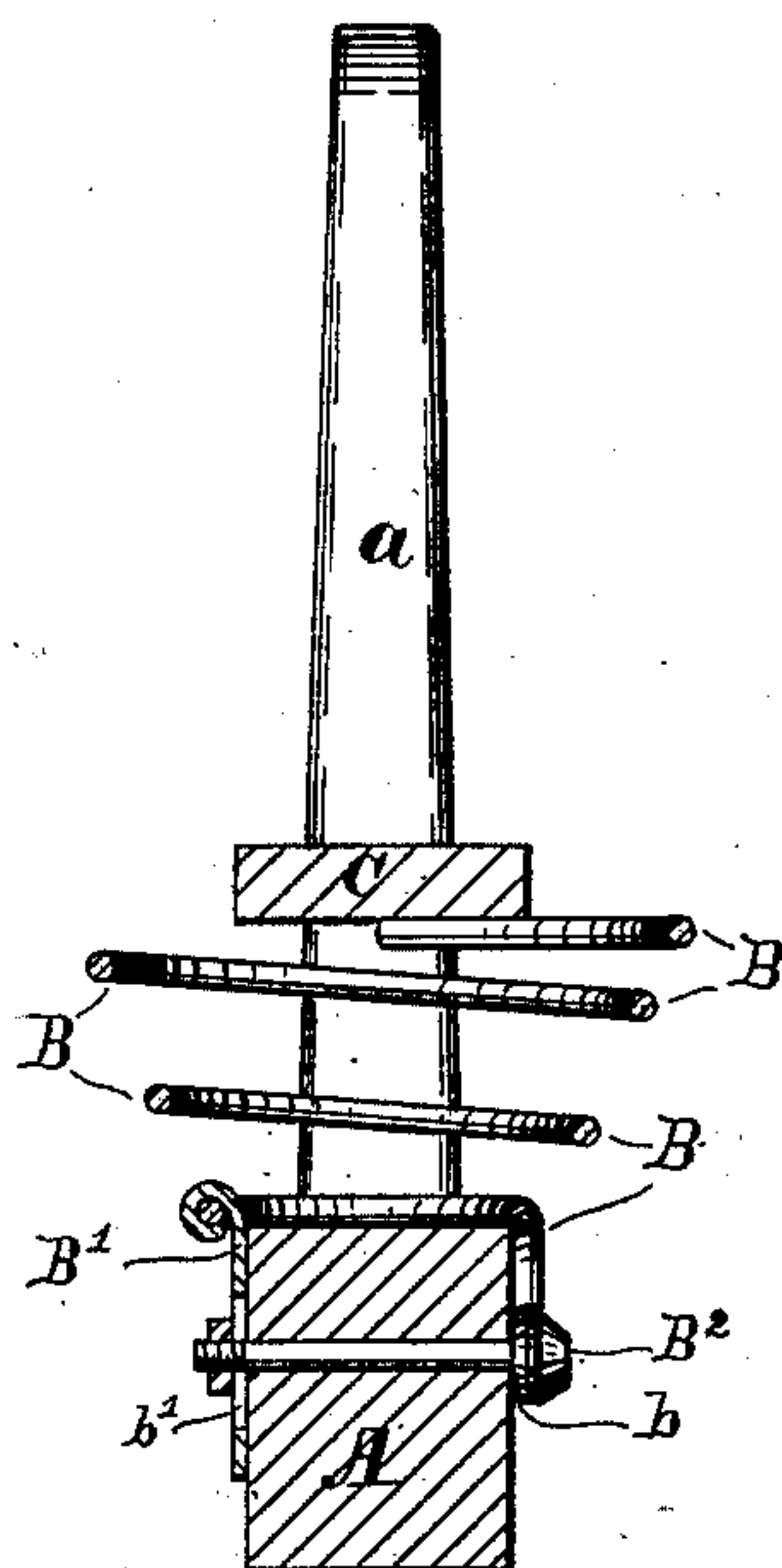


Fig. 3.

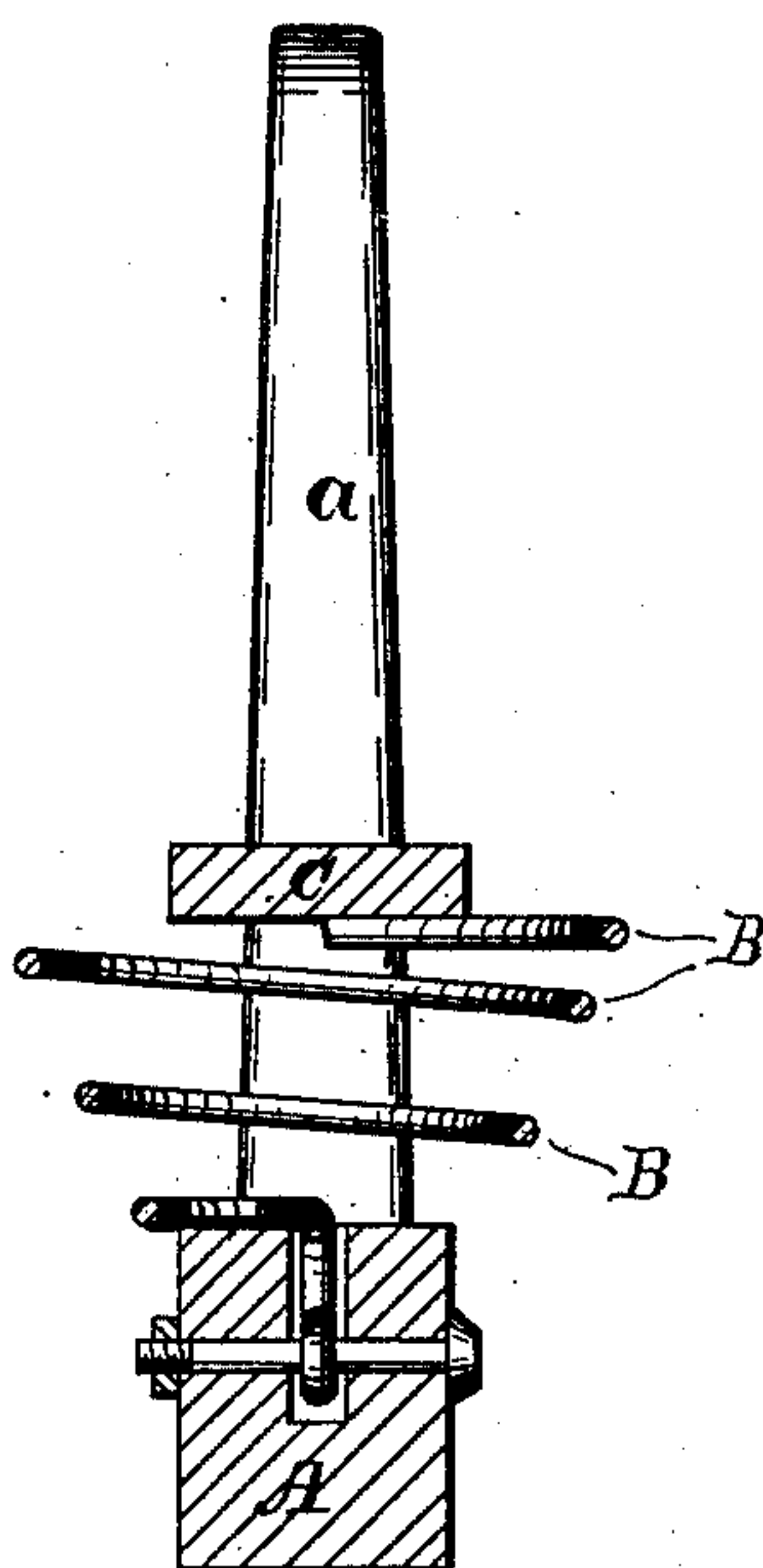
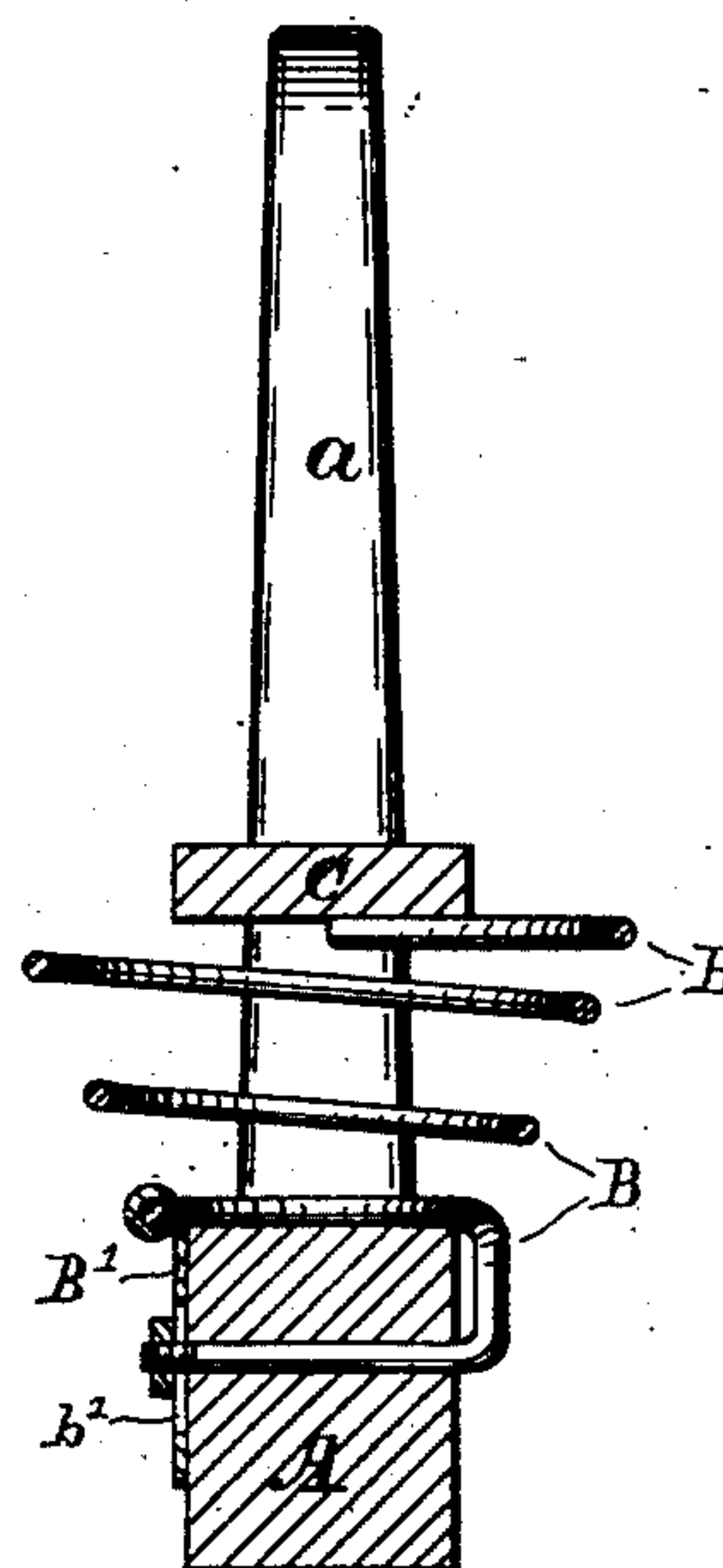


Fig. 4.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## WAGON-SPRING.

SPECIFICATION forming part of Letters Patent No. 354,548, dated December 21, 1886.

Application filed August 14, 1886. Serial No. 210,886. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. HAGGARD, of the city of Lafayette, county of Tippecanoe, and State of Indiana, have invented certain new and useful Improvements in Wagon-Springs, of which the following is a specification.

My said invention relates to that class of wagon-springs for which Letters Patent No. 213,818 were granted me April 1, 1879; and it consists in an improved means for securing said springs to the wagon-bolster, whereby a very cheap, simple, and at the same time durable construction is provided.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a wagon-bolster provided with a set of springs embodying my said invention; Fig. 2, a cross-section through the same on the dotted lines 2 2, and Figs. 3 and 4 views showing modifications of the construction which may be used if preferred.

In said drawings, the portions marked A represent the bolster, B the springs, and C a bar resting on said springs.

The bolster A is provided with standards *a*, as is usual, and is of any ordinary or desired construction, the transverse holes for the bolts securing the springs in position being provided, as shown. The springs B are in main ordinary conical spiral springs. The last coil at the small end is formed to give said end a flat bearing-surface, and the end is then bent down at an angle corresponding to the corner of the bolster with which it is to be used, (usually a right angle.) Said bent-down end is extended a short distance, and has a bolt-eye, *b*, formed thereon. On the opposite side of the bolster I provide a strap, *B'*, formed at one end to engage with one of the coils of the spring, (preferably the last one,) and at the other end with a slot, *b'*, which is arranged opposite the eye *b* on the end of the spring, and by means of which this side of the spring may be readily adjusted to bring its bearing-surfaces level or into a horizontal plane, as will be readily understood. The parts are secured in place by a bolt, *B<sup>2</sup>*, passing through said eye *b*, the transverse hole in the bolster, and the slot *b'* in the strap *B'*, as shown, and the nut *b<sup>2</sup>* thereon. While the strap *B'* is

desirable in many cases and adds strength and durability to the device, it will be readily seen that in some cases it might be omitted from the construction (as shown at right in Fig. 1) without materially impairing its operation.

The construction shown in Fig. 3 is substantially the same as that shown in Fig. 2, except the last coil is brought around to the center of the bolster, and the end with the eye is inserted in a mortise in said bolster. In Fig. 4 I have shown the end of the spring bent to form the bolt *B<sup>2</sup>* in itself, either of which constructions is but a slight modification of that shown in the principal views, and may be used, if desired; but I prefer that shown in said principal views on account of the slight cost to manufacture, its simplicity, and the ease with which it may be applied to any bolster.

The bar C is simply the ordinary bar mounted upon the top or large ends of the springs, and notched at its ends to engage with the standards *a* in the well-known manner.

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

1. In a wagon, the combination of the bolster A, springs B, mounted on the top of said bolster, the ends of which are bent down over the corner of the bolster and provided with eyes *b*, the bolts *B<sup>2</sup>*, passing through said eyes and said bolster for securing said springs in position, and the bar C, mounted on top of said springs and arranged to slide vertically and support the wagon-body, all substantially as set forth.

2. The combination of the bolster A, spring B, formed as specified, the strap *B'*, and the bolt *B<sup>2</sup>*, all substantially as shown and specified.

3. The combination of the bolster A, spring B, strap *B'*, having the slot *b'*, and a bolt for securing said parts in place, all substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 11th day of August, A. D. 1886.

WILLIAM S. HAGGARD. [L. s.]

In presence of—

E. W. BRADFORD,  
CHARLES L. THURBER.