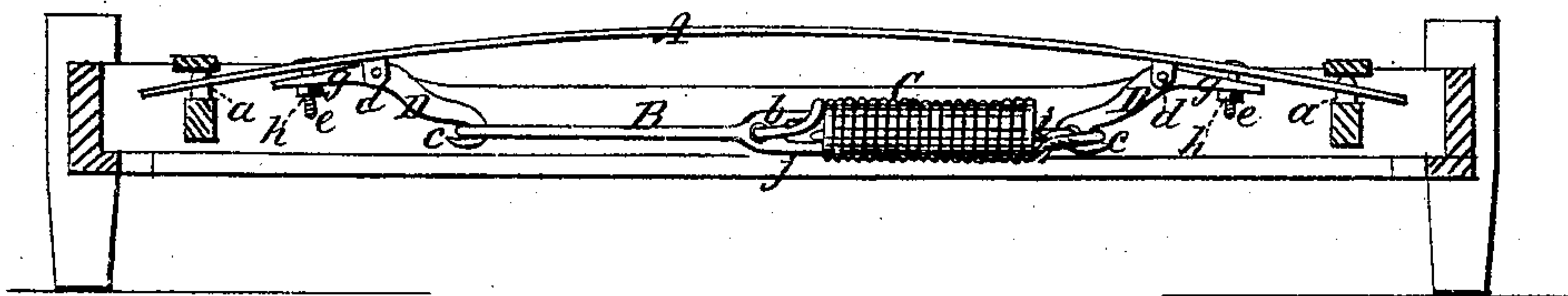


**S. P. SMITH.**  
**Springs for Bed-Bottoms.**

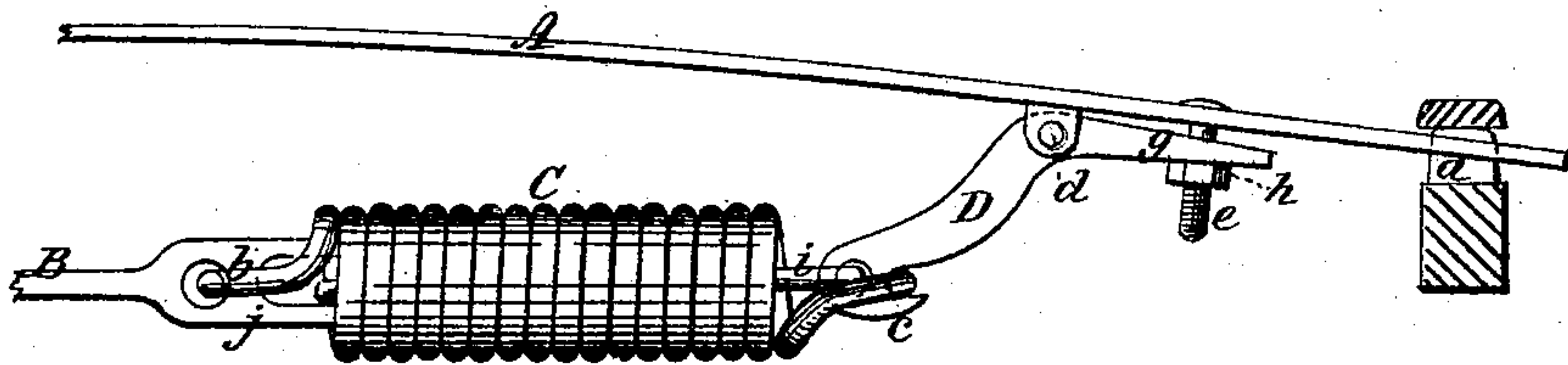
No. 152,182.

Patented June 16, 1874.

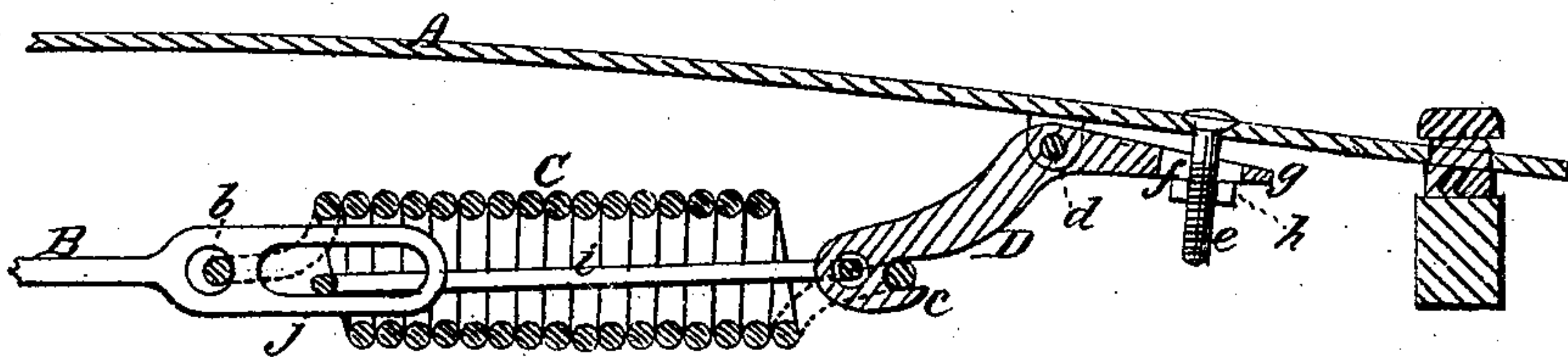
*fig. 1.*



*fig. 2.*

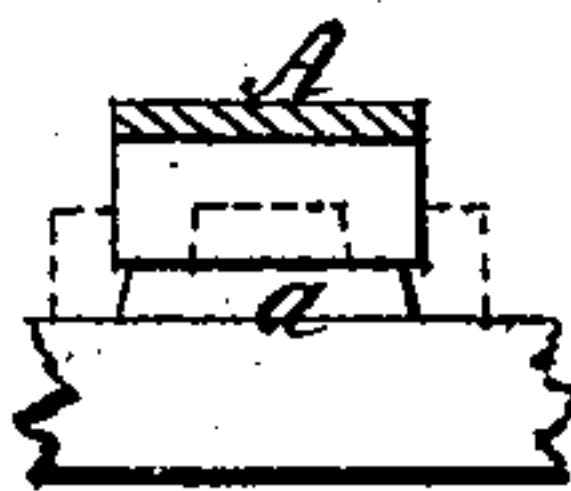


*fig. 3.*



*Witnesses:*

*Wm. Wagner,*  
*Alex. Rutherford.*



*Inventor:*

*Solomon P. Smith,*  
*By Johnson & Johnson*  
*his Attorneys.*

# UNITED STATES PATENT OFFICE.

SOLOMON P. SMITH, OF WATERFORD, NEW YORK.

## IMPROVEMENT IN SPRINGS FOR BED-BOTTOMS.

Specification forming part of Let'ter's Patent No. **152,182**, dated June 16, 1874; application filed November 11, 1873.

*To all whom it may concern:*

Be it known that I, SOLOMON P. SMITH, of Waterford, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Springs for Bed-Bottoms and other purposes, of which the following is a specification:

My invention relates to springs which may either form cambered slats for bed-bottoms or be applied for use in vehicles, the object of the improved camber-spring being to compensate for the sagging of the slats when forming bed-bottoms, as, in practice, this class of springs are found to sag in the middle of the bed after a short use, owing in part from the packing and thinning of the mattress in the center, where the principal weight of the occupant comes upon the slats, and this sagging renders it uncomfortable for the occupant from the necessarily cramped position of the body. My invention consists in the combination, with a camber-spring, its cord, and a coil-spring, of an adjustable tension device, pivoted to one or both ends of the camber-spring, and forming the means of connection with the latter, its cord, and the coil-spring, for the purpose of adjusting and maintaining the uniform camber of the spring-slats; also, in the combination, with a camber-spring and its spring-cord, of a safety device, the object of which is to prevent undue straining of the coil-spring in case of excessive loading, and collapse of the camber-slat in case the spring of the cord should break; the design of these improvements being to obtain the advantages of a more perfect cambered slat than any in use, greater flexibility, combined with strength, and greater durability.

In the accompanying drawings, Figure 1 represents an elevation of my improved camber-spring; Fig. 2, an enlarged view of a portion of the same; Fig. 3, a vertical longitudinal section of the same.

For a bed-bottom the camber-slats A, of wood or metal, are arranged parallel to each other, with their ends fitted upon rubber bolsters *a*, secured in the head and foot rails of the bedstead. These spring-bolsters may project through openings in the ends of the slats, or against their opposite edges, to hold them from lateral displacement; and as they form

the bearings for the slats, they yield with the lengthwise movement of the latter, and prevent all wearing and rubbing noise upon the inflexible supports. Each slat is cambered from two to three inches, and is held in that position by a metal cord, B, which unites the ends of the slat with a coiled spring, C, and the three parts thus joined cause the slat, in seeking a straight line, to work against the coiled spring, and in approaching this line, or nearly so, the two springs work together through the straining-cord B. The coil-spring C forms only a short section upon the cord, and is attached thereto by one end, *b*, while the other is connected to the long arm *c* of a lever device, D, pivoted at *d* to the under side of the spring-slat, and rendered adjustable by a screw, *e*, from the slat, passing through a slot, *f*, in the short arm *g* of the lever, for the purpose of adjusting the tension of the spring C by raising or lowering the short arm *g*, which bears by the force of the spring C upon a nut, *h*, of the screw *e*, in order that it may have such adjustment.

In this way the uniform camber of the slats is maintained through the connecting-cords and coil-springs. The opposite end of the cord may be connected to the slat by a similar adjusting and compensating device, or by a saddle-piece, over which the cord may pass and be fastened directly to the slat. The cord B of the camber and the adjusting-lever device D serve also as the means of attachment of a safety device, *i*, to limit or restrict the strain upon the coil-spring C within certain bounds, in order to relieve the spring of too great strain. This is done, in the example shown, by a link, *i*, connected with the long arm *c* of the lever D, and, passing through the coil-spring C is interlocked with the looped end *j* of the cord B, in a manner to allow free tensional action or strain upon the spring within certain limits; but beyond this the spring is relieved by the abutting of the end of the link and cord in the loop *j*, and the strain is thereby transferred from the spring to the inflexible cord and link, and should the spring break the camber-slat will thereby be maintained in position and a collapse of the spring-slat prevented, so that in this particular the safety attachment is of advantage to



both springs, and materially adds to their durability.

While I have shown a very simple form of such device, I do not wish to be confined to my particular construction, as I propose to use any substantial equivalent thereof. The ends of the slats may be secured from vertical displacement by a cap-bar, or in any suitable way.

I claim—

1. The combination of the camber spring-

slat A, its cord B, and coil-spring C with the lever tension device D, substantially as described.

2. The safety device *i*, in combination with the camber spring-slat, cord B, and coil-spring C, substantially as described.

SOLOMON P. SMITH.

Witnesses:

JOHN H. QUACKENBUSH,  
HARVEY J. KING.