(No Model.)

W. F. RIPPON.

SEAT OR COUCH SPRING.

No. 386,849. Patented July 31, 1888.

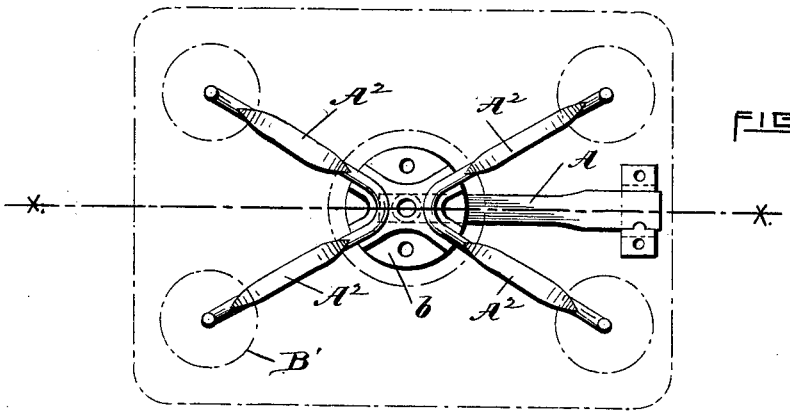


FIG. 1.

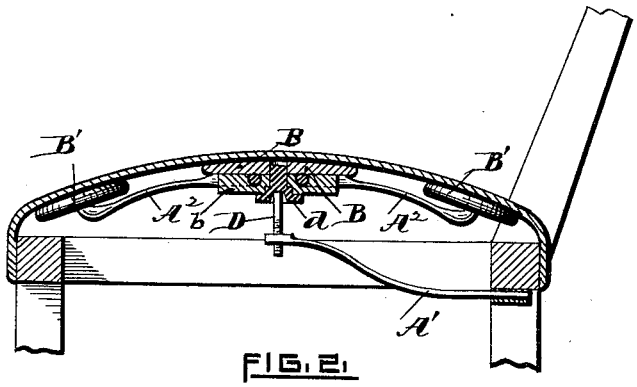


FIG. 2.

FIG. 3

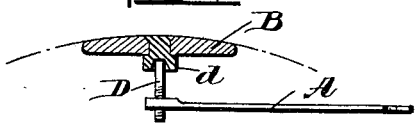
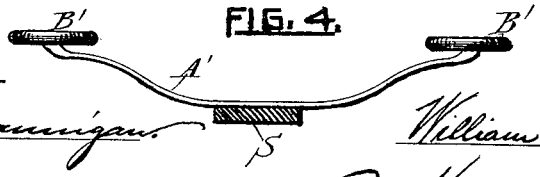


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM F. RIPPON, OF CRANSTON, RHODE ISLAND.

SEAT OR COUCH SPRING.

SPECIFICATION forming part of Letters Patent No. 386,849, dated July 31, 1888.

Application filed April 6, 1888. Serial No. 269,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. RIPPON, a subject of the Queen of Great Britain, having declared my intention of becoming a citizen of the United States, and a resident of Cranston, in the county of Providence, in the State of Rhode Island, have invented a new and useful Seat or Couch Spring, of which the following is a specification.

Prior to my invention seat-springs made of woven or spiral wire had been known and used, with various devices—such as twine or links of chain or metal straps—necessarily used to retain the springs in the required position and to strengthen and prevent lateral movement of the springs. Considerable expense is involved in the manufacture of such devices, and it has proved to be a difficult matter to replace or repair broken parts of the device, and the repairing is costly because of the necessity of reupholstering the seat.

The purpose of my invention is to obviate these objections and to provide a simple and effective and reliable spring which can be applied and removed for repair or replacement without disturbing or dissecting the upholstery of a seat or couch.

I accomplish the desired results by the novel construction and arrangement of the parts hereinafter described. I use a single strap or flat spring in some forms of my invention, and in other forms I use a combination of such flat springs, and for the purposes of this specification I term such combination a "cluster" or "duplex" spring. In connection with each spring I use a disk mounted loosely upon one end of each spring in such manner that it may rock freely to yield to pressure.

In the drawings, Figure 1 is a plan view showing one form of my invention as applied to the bottom of a chair-seat. Fig. 2 is a sectional elevation on line *x x* of Fig. 1. Fig. 3 is an elevation, partly in section, showing the single spring with its post and disk. Fig. 4 is an elevation representing a modified form of my invention applicable to the slats of a couch or bed.

Similar letters of reference indicate like parts in all the drawings.

The spring which I use I construct preferably of either the form A or the form A′, as these are conveniently used and cheaply made. The spring I secure to the frame of the seat or couch by one end and tap the free end and insert therein a threaded post, D. Upon this threaded post is loosely mounted a disk, B, which has a free rocking movement on said post, whereby it adapts itself to pressure applied at an angle to its axis. For purposes of adjustment the post-head is square-sided, and is fitted loosely into a hub, *d*, provided with a similar rectangular recess. By turning the post D in either direction, the disk B is raised or lowered, as the case may be, thereby increasing or lessening the tension upon the chair-seat upholstery. In many instances, as in a couch or similar piece of furniture, it is desirable to have more than a single spring. I therefore, as occasion warrants or demands, use a collection of springs and disks radiating from the said disk B as a center. These secondary disks B′ B′ B′ B′ are smaller than said central disk, B, and each is loosely mounted upon a post formed by the upwardly-turned end of the auxiliary springs A^2, and, like the central disk, has a free rocking movement upon its post. The auxiliary springs A^2, I preferably make of the V form shown, and secure them upon the under side of the central disk, B, by a retaining-plate, *b*, suitably recessed to receive and confine them, as shown. The secondary disks B′ B′ B′ B′ are intended to lie a trifle below the plane of the central disk, B, to permit the chair or couch seat to crown or be a trifle highest in the center. Any pressure applied to the seat will depress the disks and their springs, and ultimately the central disk and main spring. The purpose of the auxiliary springs and disks is to preserve an even tension and uniform surface in the chair-seat.

Modifications of the parts shown may be made without departing from the principle of my invention. For instance, the main spring may be scroll-shaped and be secured at its center, thereby leaving both ends of the spring free, and to each I can attach either a single disk or a cluster, as shown in Fig. 4. Such device would be very well adapted to a couch or bed or mattress spring.

It is obvious that the auxiliary springs may be varied or modified in form, or that a collec-

tion of single springs may be used, each spring being secured to the central disk or post independently of the others in the cluster.

The end of my spring or post cannot therefore puncture the upholstery, and, moreover, the disk prevents the rust from the metal spring or post from reaching and injuring the webbing or upholstery in the seat or couch.

By the use of my invention I am enabled to spring a seat and upholster it with the use of less stuffing or filling than is required with other forms of springs. The webbing is applied or laid in the seat, as in other cases, the disks pressing directly against the webbing from the under side.

It is obvious that I can use either flat or round springs; but I prefer the flat or strap form on account of its greater resiliency.

I claim as my invention and desire to secure by Letters Patent—

1. The spring A, post D, threaded at one end, hub *d*, and disk B, said disk being loosely pivoted upon said post and having free rocking movement thereon, all combined with each other and with the frame or slats of a seat, couch, or analogous article, as shown and described, and adapted to serve as specified.

2. The clamping-plate *b*, auxiliary springs A^2, and disks B′ B′ B′, combined with a central disk, B, post *d*, and main spring, as A, to form a cluster spring for seats, couches, and analogous articles, said auxiliary springs radiating from said central disk, and said auxiliary disks B′ having each independent free rocking movement pivotally upon upwardly-turned ends of said springs A^2.

3. A spring for seats, couches, and analogous articles, consisting of a main spring and central disk, as shown, combined with one or more springs radiating from said central disk in planes parallel with that of the main spring, and a disk loosely pivoted upon each of said radiating springs and having free rocking movement thereon yieldingly to pressure applied at any angle to its pivotal axis, all arranged, substantially as shown and described, for joint operation, and adapted to serve as specified.

4. In a seat, couch, or analogous article, the spring A, adapted to be secured at one end to the frame of the chair or couch, and a post, D, tapped into the other end of said spring, combined with each other and with a disk, B, carried on the free end of said post, all arranged and adapted to serve to raise or lower said disk to increase or lessen the tension of the seat or couch upholstery.

In testimony whereof I have hereunto set my hand, in presence of two witnesses, this 8th day of October, 1887.

WILLIAM F. RIPPON.

Witnesses:
HENRY MARSH, Jr.,
E. H. LINCOLN.