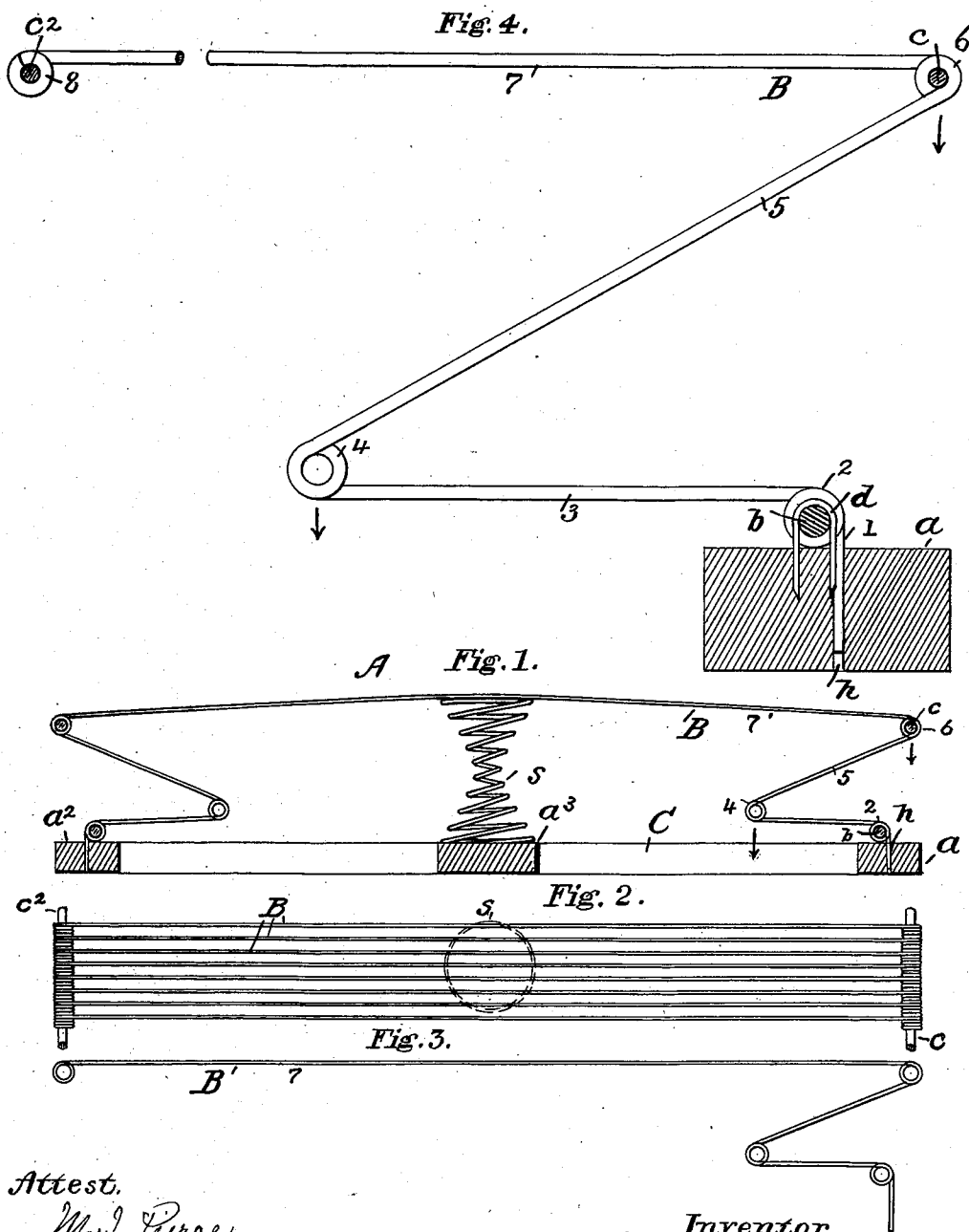


(No Model.)

J. B. GARDINER.
SEAT FOR COUCHES.

No. 605,095.

Patented June 7, 1898.



Attest.

M. J. Pierce.

Thomas L. Madden

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by his attorney, Jos. Willis Pierce.

UNITED STATES PATENT OFFICE.

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SEAT FOR COUCHES.

SPECIFICATION forming part of Letters Patent No. 605,095, dated June 7, 1898.

Application filed October 29, 1897. Serial No. 656,804. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. GARDINER, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Seats for Couches and the Like, of which the following is a specification.

The present invention relates to improvements in the manufacture of seats for articles of furniture—such as lounges, divans, and the like—and especially to that class of seats in which wire springs are combined with supporting flexible wires and rods and a base or frame to form a skeleton which is padded and covered with upholstery according to prevailing modes and tastes and adapted to yield by pressure applied to any portion of its upper part and to as freely return to its normal position upon the removal of the pressure. Great difficulty has been found in the construction of such seats to obtain the requisite flexibility and mobility after the upholstery has been secured thereto, as a skeleton which as a whole seems to be easy and yielding after the padding and covering are in place proves to be rigid, hard, and unsatisfactory, and while the upper part of the seat may be right its edge may be of such a character that when successively depressed and elevated at any part of its length it does not fall and rise vertically, but swings in and out, causing wrinkles in the covering and a displacement of the padding. My invention aims to avoid such disadvantages as have been enumerated, and it contemplates a seat composed of a base or frame, preferably of wood, and a series of independent springs supported upon said frame, which are united by supporting rods and wires. The said springs consist, preferably, of steel wire bent into two or more arms, one of the arms being longer than the others to form a link or extension, each spring having coils at its ends and bends or elbows. The springs are secured to a base or frame, and a rigid rod passes through the coils near the frame and is secured thereto, while a flexible supporting-wire extends around the seat in part or whole, as may be, and passes through the coils at the outer bends or elbows and forms the edge of the seat, while the longer or

linking arms extend or reach across the seat and the flexible edge wire passes through the eye or coil on the ends of the arms. Suitable coil-springs are supported midway of the frame, and their upper ends rest on the under side of the said long crossing arms with sufficient pressure to cause them to assume an upward curve.

In the drawings, Figure 1 represents a cross-section of a seat embodying my invention. Fig. 2 is a top view of the same. Figs. 3 and 4 are side views of a spring detached, the latter being drawn full size.

Referring to Figs. 1, 2, 3, and 4, A represents the seat as a whole, and C is the supporting-frame therefor, which may be of any desired shape, shown as made of parallel wooden bars or rails a , a^2 , and a^3 , which are to be tied together by end and cross pieces. A series of holes h are bored in the bars a and a^2 at suitable distances apart, into which the ends 1 of springs B are inserted.

The springs B are, as shown in Fig. 3, made from a single piece of steel wire bent into a Z shape, with a short straight end 1, a coil 2, a horizontal arm 3, a coil 4, an angle-arm 5, a coil 6, and a long arm 7, terminating in a coil 8. The springs alternate with each other in position when in place, as the fingers of one hand are interleaved when those of one hand are inserted between those of the other, the ends 1 being inserted into the holes h . A stout rigid rod b is passed through the series of coils 2, one on each side, fitting snugly therein, and is fastened to the rail a by staples d , holding all of the springs securely to the rail. The ends 1 inserted in the holes serve to keep the springs in alinement and as resistance levers or posts when the upper part is depressed.

The coils 6 are smaller than coils 2 or 4, and a highly-flexible wire c is passed through them in series and also through the coils 8 at the ends of the arms 7, which alternate therewith, supports, and links them altogether, and the coils c are secured close to each other, as seen in Fig. 2. It will be seen that the springs B not only constitute the elasticity of each side of the seat, but also of the top thereof, in connection with the hour-glass-shaped spiral springs s , which are placed upon the middle

rail a^3 , their upper ends resting under several of the springs and pressing upward cause them to assume a curved shape.

The construction of the springs B is such that when pressure is put upon them they sink and rise in a practically vertical line, as denoted by the arrows in Fig. 4, the arms 7 falling downward with the arms 3 and also rising in the same manner, for as the arm 7 falls with the wire c^2 as a fulcrum, modified by the presence of spring s , the arm 3 falls with the rod b as a fulcrum, so that one practically compensates the other. Owing to the fact that the rod b is supported close to the frame-rails, the lower ends of which are driven into said rails, the said rod b forms a firm fulcrum for the arms 3 of the springs, which are therefore prevented from having any movement that would tend to permit any lateral movement of the springs as a whole.

Whatever the form of the seat, the wire c extends around its configuration, and while it is marked c^2 on the left side it is supposed to be the same wire. The flexible wire c , strung thus between so many coils, each of which has four rings preferably, forms a very flexible and pliant edge, and in use has demonstrated its appropriateness for the purpose when covered by the upholstery required to make a seat.

Having fully described the invention, I claim—

1. A seat for an article of furniture, composed of a base or frame having rails a and a^2 ,

and a series of springs each consisting of a single piece of spring-wire bent to form coils 2, 4 and 6 with intermediate arms 3 and 5 and having a short end 1 and a long arm 7 terminating in a coil 8, the said springs having their ends 1 secured to the said rails a and a^2 alternately, the arms 7 alternating in their direction of extension across the top, rigid rods passing through the coils 2 and flexible wires or rods passing through the coils 6 and 8 to string them together.

2. A seat for an article of furniture, composed of a base or frame having rails a , a^2 and a^3 , and a series of springs each consisting of a single piece of spring-wire bent to form coils 2, 4 and 6 with intermediate arms 3 and 5 and having a short end 1 and a long arm 7 terminating in a coil 8, the said springs having their ends 1 secured to said rails a and a^2 alternately, the arms 7 alternating in their direction of extension across the top, rigid rods passing through the coils 2, flexible wires or rods passing through the coils 6 and 8 to string them together, and springs s interposed between the rail a^3 and the arms 7 of the springs.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of October, 1897.

JOSEPH B. GARDINER.

Witnesses:

GEO. WILLIS PIERCE,
A. H. SAWYER.