No. 796,181. PATENTED AUG. 1, 1905.

R. W. BOCK.

SUPPORT FOR SEAT COVERINGS.

APPLICATION FILED AUG. 25, 1904.

Fig. 8.

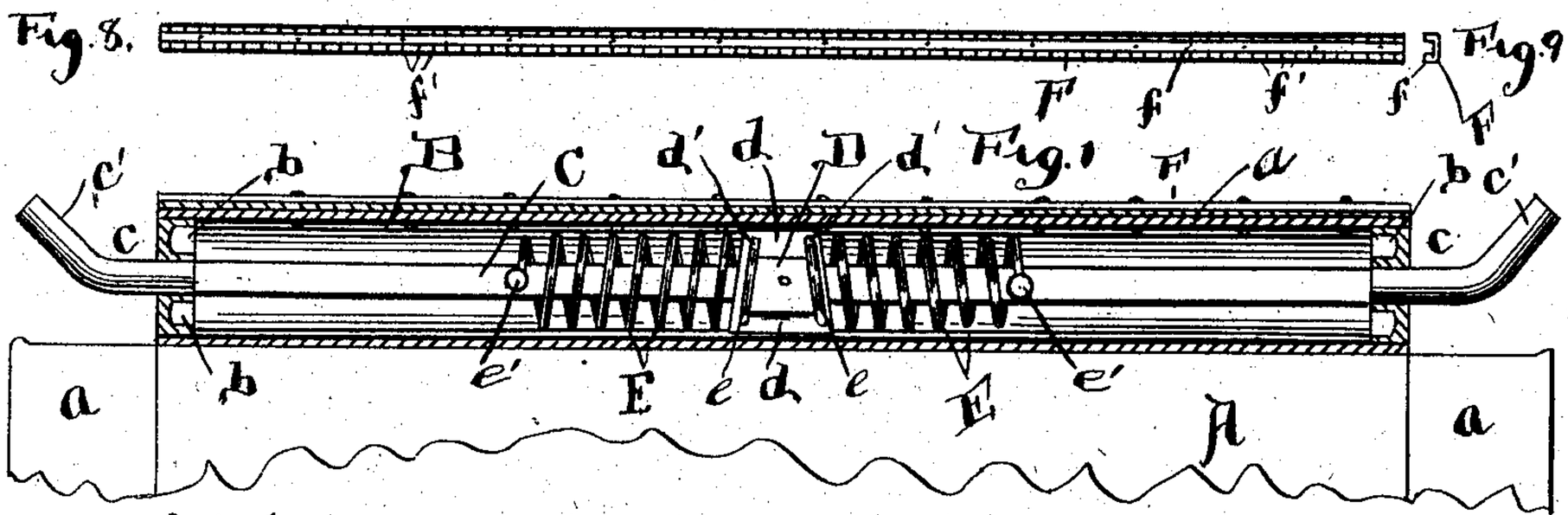


Fig. 9.

Fig. 1.

Fig. 2.

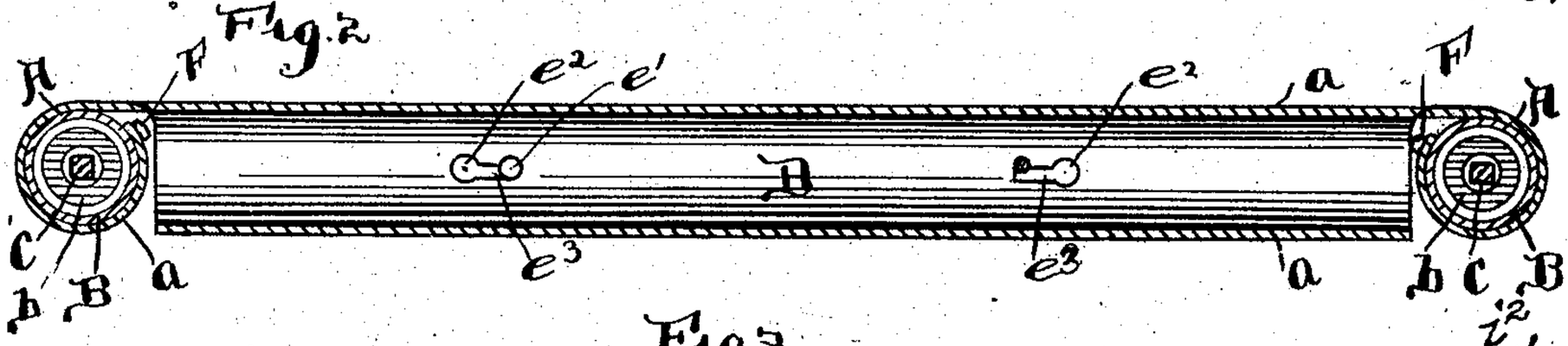


Fig. 3.

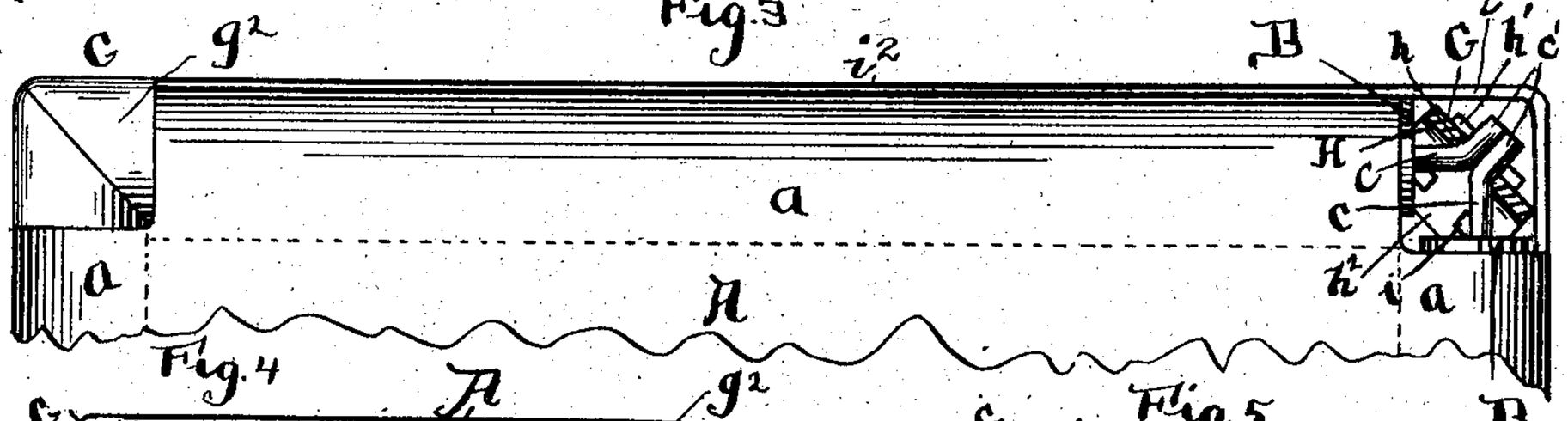


Fig. 4.

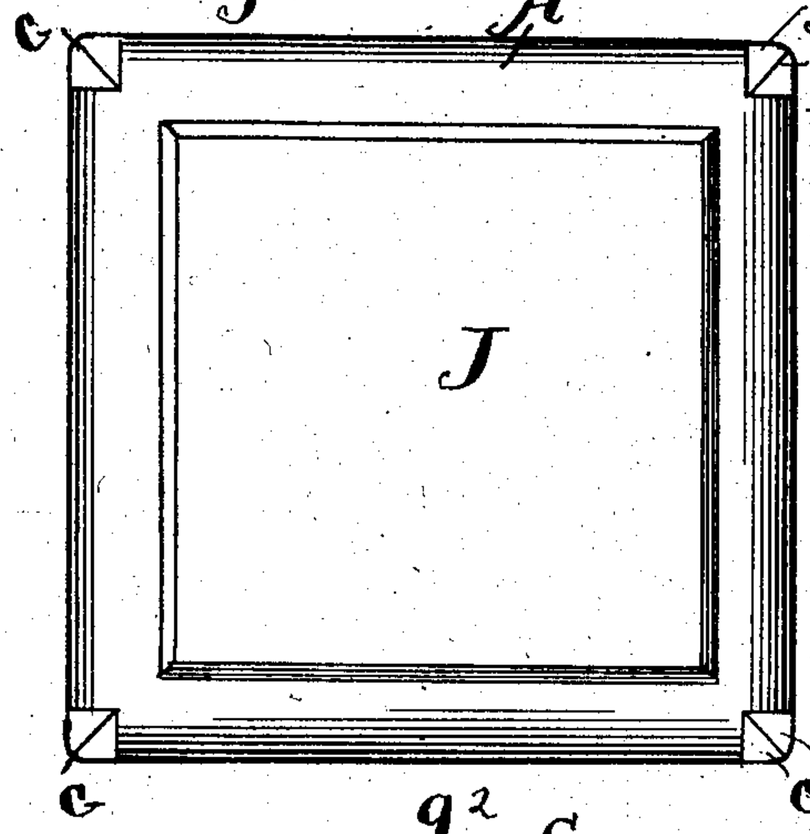


Fig. 5.

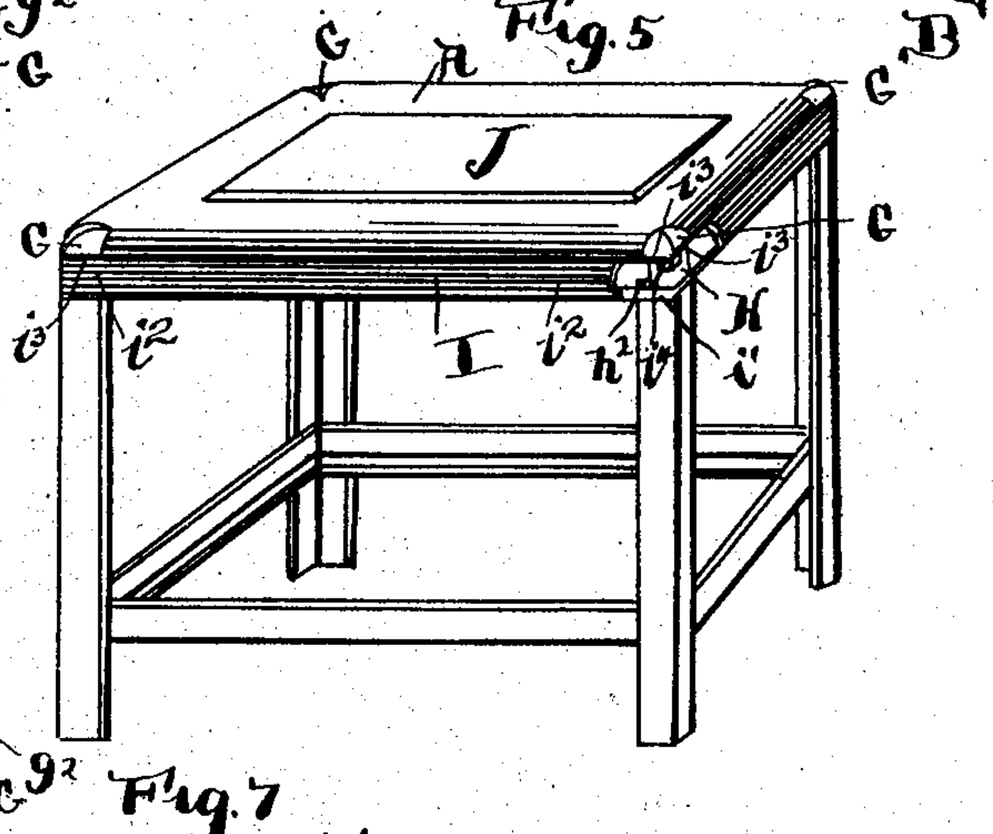


Fig. 6.

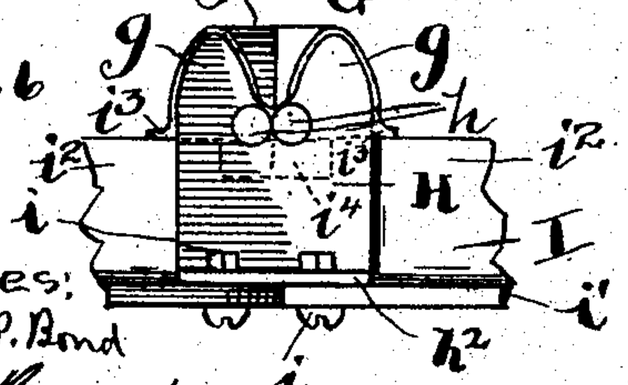
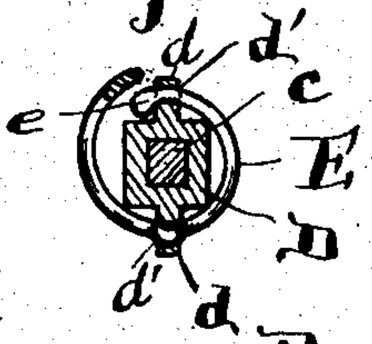


Fig. 7.



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UNITED STATES PATENT OFFICE.

RICHARD W. BOCK, OF OAK PARK, ILLINOIS.

SUPPORT FOR SEAT-COVERINGS.

No. 796,181. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed August 25, 1904. Serial No. 222,171.

To all whom it may concern:

Be it known that I, RICHARD W. BOCK, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Supports for Seat-Coverings, of which the following is a specification.

The object of this invention is to provide a support for coverings as applied to chairs, seats, lounges, stretchers, or similar supporting structures which will enable the seat to conform to the body curvature of the occupant and at the same time exert a sufficient tension or elasticity to firmly support the body and to assume a flat surface when unpressed.

A further object is to so arrange the support that the seat-covering may be easily attached thereto or removed therefrom for the purpose of repair or renovation, thereby peculiarly fitting it for use in hosiptals or sick-rooms or under all circumstances in which a sanitary condition must be constantly maintained; and the invention finally consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings illustrating the invention, Figure 1 is a longitudinal sectional view of the supporting drum or cylinder; Fig. 2, an elevation of one of the cylinders and a cross-section of the adjacent cylinders; Fig. 3, a top or plan view of the seat-covering, showing one of the corner-brackets in section; Fig. 4, a plan view of a seat provided with the covering of the present invention; Fig. 5, a perspective view of the entire seat; Fig. 6, a detail view of one of the brackets; Fig. 7, a detail showing the method of attaching the springs in the interior of the drums or cylinders; Fig. 8, an edge view of the attaching-strip, and Fig. 9 an end view of the same.

The seat, couch, chair, or other structure is provided with a covering A, having at each of its four edges outwardly-projecting attaching-strips *a*, cut away at the corners, and said attaching-strips are carried around drums or cylinders B, four in number, each of said drums or cylinders being of sufficient length to extend across one of the edges of the seat, and said drums are provided at their ends with closing-plugs *b*, fitted into the drum, and through said closing-plugs passes a supporting-rod C, squared throughout its body portion and provided with rounded ends *c*, which pass through the closing-plugs and serve as a journal for the revolution of the drum. The rounded portions terminate in angularly-bent ends *c'*, which serve to secure the supporting-rods in place, as will hereinafter appear. At the center of each of the supporting-rods is a square sleeve D, provided with ribs or flanges *d*, having therein openings *d'*. Through the openings pass oppositely-disposed coil-springs E, terminating at their inner ends in bent ends *e*, which are passed through the openings *d'* and serve to retain the inner ends of the springs in the flanges of the sleeve. The springs are coiled around the supporting-rod and terminate in heads *e'*, which are passed through openings e^2 in the wall of the drum or cylinder, and said openings terminate in inwardly-extending slots e^3 of less diameter than the heads *e'*, so that after the heads have been outwardly projected through the openings the tension of the spring will serve to draw back the heads into the slotted portions and prevent their withdrawal therefrom, forming a spring connection between the drum and its supporting-rod. The attaching-strips *a* are secured to the exterior walls of the drums by means of attaching-strips F, (shown in detail in Figs. 8 and 9,) and said attaching-strips preferably are formed of channeled metal having inwardly-projecting flanges *f*, provided in their edges with teeth *f'*, so that when the strip is fastened down onto the metal by means of bolts, rivets, or other attaching means the teeth will bite into the fabric and hold the same rigidly onto the drum. The drums, four in number, are positioned end to end, so as to extend around the entire perimeter of the seat, and the bent ends *c'* of the rods are held in place within brackets G. The brackets, as shown, are formed to have curved openings *g* of the same curvature as the drums and are provided with an angularly-formed outer face or wall g^2, which serves to complete the corner of the seat and at the same time afford a protection for the operative parts contained therein. The bracket is further provided with a diagonally-extending vertical cross-wall H, having openings *h*, through which are inserted the bent ends of the supporting-rods, so that when inserted the supporting-rods will be firmly held in place within the sockets and prevented from turning, and in order to afford a firmer fastening for the ends the latter have passed therethrough pins *h'*, which unite the ends together and prevent the removal of either from the cross-wall.

The cross-wall is extended below the remainder of the socket and terminates in an inwardly-projecting plate h^2, which affords a firm support for securing the socket to supporting-rails I, to which the sockets are attached by means of bolts i or in any other suitable manner. As shown, the supporting-rails are formed of angle-iron provided with an inwardly-extending flange i', which serves as a support or base for the attachment of the plates on the sockets. The side flanges i^2 of the supporting-rails at their corners form a support for the edges i^3 of the corner of the brackets which rest upon and are supported by the rails. In order to reinforce the corners, the brackets are provided with angular downwardly-extending lugs i^4, (see Fig. 5,) which fit into the corners of the supporting-rails and prevent the displacement of the brackets. The seat-covering may be completed by providing a finishing-piece J of ornamental fabric or by upholstering in any suitable manner.

When in use, the weight of the occupant of the seat or other structure causes a greater or less tension to be exerted on the drums or rollers when rolling the same against the tension of the springs, and the amount of revolution of the several drums will depend upon the distribution of weight over the surface of the covering, so that the covering will be permitted to adapt itself immediately to the curvature of the occupant's body, supporting the body uniformly and equally throughout its entire extent. As the weight is shifted from time to time by the movement of the occupant the drums will be moved more or less, so that the seat will immediately assume the proper position to support the body most easily and comfortably. The corner-sockets serve as a rigid support for the supporting-rods and at the same time serve to protect the corners from wear and add a finished appearance to the whole structure.

Of course the shape or size of the structure may be varied to meet the requirements of use, and under some conditions a single pair of drums may be used in place of two pairs, especially in the case of stretchers, in which the covering is supported entirely from the sides. As shown, the seat is square; but it may be made oblong by merely changing the proportion of the drums without departing in any way from the spirit of the invention.

The character of the covering and the absence of all stuffing makes the seat practically fireproof, as well as highly sanitary, and its fireproof qualities may be increased by the use of asbestos cloth or similar fabric for the covering.

While it is preferred to make the seat of metal with the exception of the covering, the invention is not limited to this form of construction, and wood may be used when desired.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination of a covering, four drums, one on each side of the covering, to which said covering is attached, four supporting side rails connected at their corners, corner-brackets to which the side rails are secured for reinforcing the corners, said brackets being provided with sockets, longitudinally-extending supporting-rods having ends entered into and rigidly held within the sockets, and springs secured at one end to the supporting-rods and at their other end to the drums for normally holding the covering taut at all four sides by the tension of the springs, substantially as described.

2. In a device of the class described, the combination of a rigid support, a rod having its ends entered into and rigidly held within the support, a hollow drum rotatably mounted on the rod and provided in its wall with a slot enlarged at one end, a sleeve fixedly mounted on the rod, a spring encircling the rod and secured at one end to the sleeve and having at its other end an enlarged head adapted to be inserted through the enlarged opening in the slot and held by the tension of the spring within the slot, and a seat-covering secured to the drum and held taut by the tension of the spring, substantially as described.

3. In a device of the class described, the combination of a rigid support, a rod rigidly mounted on the support and angular in cross-section for a portion of its length, a drum rotatably mounted on the rod and inclosing the angular portion, a sleeve provided with an opening adapted to fit onto the angular portion of the rod and be held rigidly thereon and provided with a fin or flange having an opening therein, a spring encircling the rod and having one end entered through and fixedly held within the opening in the fin or flange and having its opposite end secured to the drum, and a covering secured to the drum and adapted to be held taut by the tension of the spring, substantially as described.

4. In a device of the class described, top rails extending around the structure, corner-brackets secured to the top rails and provided with diagonally-extending cross-walls, supporting-rods rigidly secured at their ends within the cross-walls, drums rotatably mounted on the supporting-rods, a covering secured at its edges to the drums, and a spring within each of the drums secured at one end to the supporting-rod and at the other end to the wall of the drum for holding the covering taut on all sides, substantially as described.

5. In a device of the class described, the combination of four supporting side rails con-

nected at their corners, corner-brackets secured to the side rails and provided with diagonally-extending cross-walls, supporting-rods having their ends entered into and rigidly held within the cross-walls, a sleeve rigidly mounted on each of the supporting-rods, a drum rotatably mounted on each of the supporting-rods and having in its wall an elongated slot terminating in an enlarged opening, a spring secured at one end to the sleeve and provided at its other end with an enlarged head held by its own tension within the elongated slot, and a covering provided with attaching-strips at its edges, said strips being secured to the drums to normally hold the covering taut by the tension of the springs, substantially as described.

6. In a device of the class described, the combination of a rigid support, a rod secured at its ends to the rigid support, a sleeve rigidly mounted on the rod and provided with a fin or flange, a drum rotatably mounted on the rod and provided with two elongated slots enlarged at their outer ends, two springs having their inner ends passed through and rigidly held within the fin or flange and provided at their outer ends with enlarged heads adapted to be inserted through the enlarged openings to have the springs held within the slots by their own tension, and a seat-covering secured to the drum and held taut by the tension of the spring, substantially as described.

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