

No. 791,297.

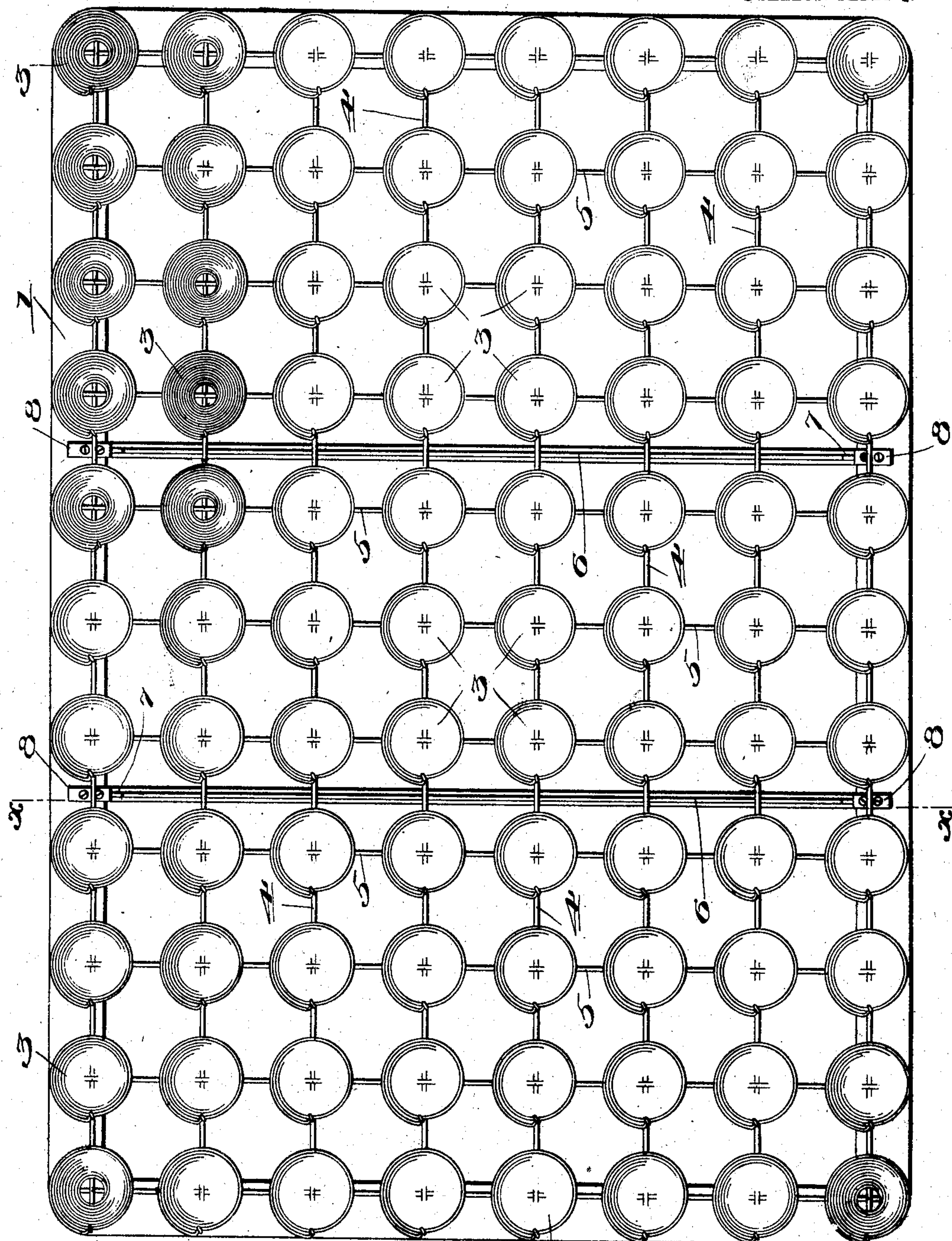
PATENTED MAY 30, 1905.

J. H. SHERRARD.

FRAMEWORK AND SPRING SYSTEM FOR BEDS OR OTHER ARTICLES
OF FURNITURE.

APPLICATION FILED MAR. 8, 1904.

2 SHEETS—SHEET 1.



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Fig. 1

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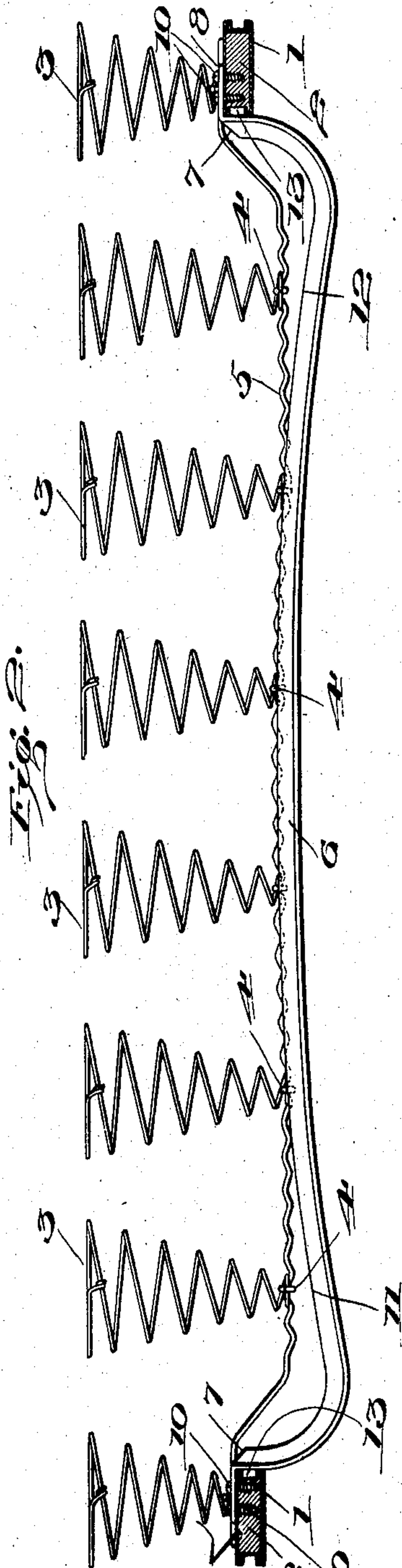
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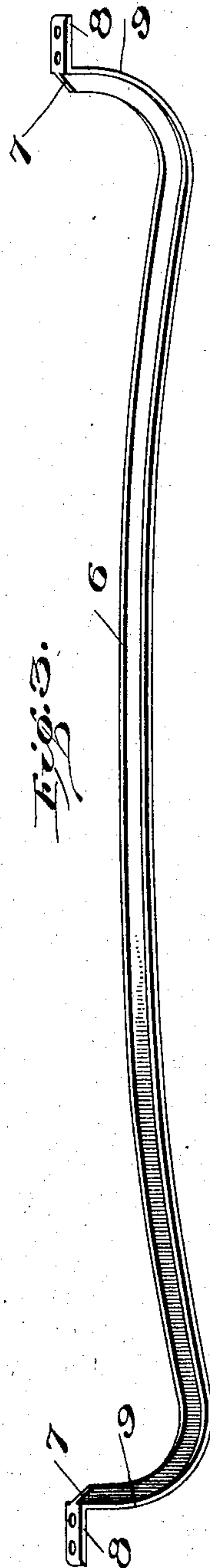
FRAMEWORK AND SPRING SYSTEM FOR BEDS OR OTHER ARTICLES
OF FURNITURE.

APPLICATION FILED MAR. 8, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES H. SHERRARD, OF MONTREAL, CANADA, ASSIGNOR TO STAPLES & HANFORD COMPANY, OF NEWBURGH, NEW YORK, A CORPORATION OF NEW JERSEY.

FRAMEWORK AND SPRING SYSTEM FOR BEDS OR OTHER ARTICLES OF FURNITURE.

SPECIFICATION forming part of Letters Patent No. 791,297, dated May 30, 1905.

Application filed March 8, 1904. Serial No. 197,144.

To all whom it may concern:

Be it known that I, JAMES H. SHERRARD, residing at Montreal, in the county of Hochelaga and Province of Quebec, Canada, have invented certain new and useful Improvements in Framework and Spring Systems for Beds or other Articles of Furniture, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the spring systems and supporting devices of beds and other articles of furniture.

One of the objects thereof is to provide means for bracing and strengthening the frames of beds and other articles of furniture, whereby the peculiar tension to which they are subjected in use may be balanced in whole or in part and the injurious effects thereof substantially eliminated.

Other objects and advantages will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be hereinafter fully described and the scope of the application thereof pointed out in the claims.

In the accompanying drawings, which illustrate one of various possible embodiments of the invention, Figure 1 is a plan view of a bed-spring frame, showing my invention as applied thereto. Fig. 2 is a transverse section taken on line *xx* of Fig. 1. Fig. 3 is a perspective of a brace used as an auxiliary supporting means for the spring system.

Similar reference characters refer to similar parts throughout the several views.

The invention proposes, broadly, a frame, whether adapted to be used in a bed or for other articles of furniture, a main supporting system adapted to be carried thereby, and an auxiliary support or supports adapted to cooperate with the main supporting system in transferring the load to the frame and also adapted to relieve the frame of injurious strains present in structures known in the art.

As carrying out these broad features of invention there is shown in Figs. 1 and 2 a frame 1, preferably rectangular in form and of metallic construction. Where this frame is hollow, as shown, this feature being known in the art, it is preferably stiffened and the tendency to buckling of the members thereof reduced by inserting a filler-strip 2, preferably of wood. As embodying a main supporting system carried by this frame Figs. 1 and 2 show a spring system composed of spiral springs 3, over which upholstery or other covering may be placed. These spiral springs are supported upon longitudinal and transverse wires 4 5, the ends of the wires being supported from the sides and ends of the frame and the springs being supported at the points where the various wires cross. As shown, the supporting-wires are preferably bent or corrugated in order to provide a more convenient and efficient means for supporting and securing the spiral springs thereon and their central portions are dropped down or depressed below the plane of the frame. This construction, however, is known in the art and is only illustrated herein as a construction which may be efficiently used in combination with the invention here disclosed. With this spring system and other systems known in the art there is a marked tendency for the frame to become distorted and to buckle inwardly in use by reason of the fact that the greater portion of the weight to be sustained by the system is normally carried at points within the outline of the frame, so that there is a downward and inward pressure which acts to draw the various parts of the frame inwardly toward the center. The present invention accordingly proposes an auxiliary supporting means, which shall cooperate in part with the longitudinal and transverse supporting-wires of the spring system for transferring the weight therefrom to the frame and which shall do this in such manner as to neutralize the tendency of the frame to buckle inwardly. As shown in Figs. 2 and 3, this object is attained by means of a brace or connecting member 6, which is preferably of T-iron having the web upper-

most and cut away at each end, as shown at 7, Fig. 3, and the remaining flange arranged to form the horizontal supporting member 8, but may be of any desired form and material. This connecting-brace is stretched across the frame at any desired point and secured in any desired manner to the frame members, and the length of the brace is determined by the horizontal distance between the inner edges of the frame members, so that the downwardly-extending portions 9 will fit snugly against the same. It is preferably arranged transversely of the frame, as shown in Fig. 2, and attached thereto in any suitable manner, as by screws 10. The ends of the brace preferably extend downwardly from the points of support upon the frame, and the lower extremities of these downwardly-extending portions have an arched connecting portion therebetween. All parts of the brace preferably lie substantially within the same vertical plane. The arched portion of the brace projects upwardly into the plane of the supporting-wires of the spring system in such a manner that a portion of the weight upon the spring system is carried thereby, while the portions of the brace adjacent the downwardly-extending ends are out of contact with said wires, as shown at 11 and 12. Obviously the relation of such brace, of which any number may be provided, both to the frame members and to the spring system may be widely varied without departing from the scope of this invention as outlined. If desired, the inner faces of the frame members at the point at which they engage the braces may be especially adapted to resist the outward pressure of the same by means of a block or projection 13, of wood or other material.

The operation of this embodiment of my invention is as follows: Upon any downward pressure being applied to the spiral springs the same is transmitted to the longitudinal sustaining-wires, for the reason that these wires are preferably located beneath the transverse wires. The central longitudinal wires rest upon the brace, and thus transmitting the stress directly to the latter tend to depress the upwardly-curved portion and straighten out the brace or braces. This straightening strain by increasing or tending to increase the distance between the downwardly-extending portions 9 tends to force outwardly the side members of frame 1. The slight depression of cross-wires tends to shorten their horizontal length and thus draw together the side members of the frame. These two tendencies are opposite in direction and by a suitable proportioning of parts can be caused to be always equal in amount. Under these circumstances it is readily seen that the total tendency to lateral distortion of the side members of the frame may be nullified.

The foregoing description is merely of one

embodiment of my invention, and it is obvious that many apparently widely different embodiments of the same could be constructed and still be within the scope thereof.

Although the spring-support is shown in the drawings as a plurality of spiral springs the outer rows of which are supported directly upon the frame, the peculiar method of bracing may obviously be applied to other systems of springs—as, for example, a woven-wire bed-spring. Such a woven spring may be supported upon the brace either directly or through spiral springs or other intermediate means. Also the brace may be secured at portions 8 to the lower instead of the upper side of surface of the frame members. It will accordingly be seen that auxiliary supporting members such as described may be conveniently and economically added to the construction of framework for furniture, while at the same time the life of the framework and the strength thereof will be increased thereby to a marked degree. Other advantages of such construction will be obvious without the necessity for further elaboration.

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

1. In framework construction for furniture, a main supporting-frame, a main supporting system carried thereby, and an auxiliary strengthening member or members coöperating in the support of said main supporting system upon the frame and adapted independently to transmit pressure to the frame in opposition to the pressure exerted by the main supporting system.

2. In framework construction for furniture, a main supporting-frame, a main supporting spring system carried thereby, and an auxiliary strengthening member or members adapted to coöperate in the support of said main supporting system upon the frame and adapted independently to transmit pressure to the frame in opposition to the pressure exerted by the main supporting system.

3. In combination, two rigid members, two resilient members independently stretched between and secured to the same, one of which is adapted to contract in length and the other of which is adapted to extend in length upon the application of pressure substantially perpendicular to the same, and connections between said second-mentioned members whereby the tendency of one of the same to distort said rigid members is substantially neutralized by the other.

4. In combination, a plurality of springs, means for sustaining said springs upon a frame, and a bowed brace for said sustaining means adapted to exert an outward thrust upon the members of the frame upon the application of pressure in a substantially vertical plane.

5. In combination, a spring-support, means

for sustaining said springs upon the frame, and a curved brace for said sustaining means independently connected to the frame adapted to exert an outward thrust upon the component members thereof as vertical pressure is applied to the springs.

6. In combination, a spring-support, means for sustaining said support upon a frame, and a curved brace for said sustaining means resting upon said frame and having its convex side uppermost and in operative relation to said sustaining means.

7. In combination, a spring, a frame, means adapted to support said spring upon said frame, and independent means adapted to exert an outward thrust upon the frame and counteract the tendency of said supporting means to draw inwardly the component members of said frame.

8. In combination, a plurality of springs, a frame, wires supporting said springs upon said frame, members supporting said wires and a bowed brace secured to said frame and engaging a plurality of said members and adapted to counteract the tendency of said wires to distort said frame.

9. In combination, a plurality of springs, a frame, a brace for said frame, a plurality of wires supporting said springs upon said frame and engaging said brace, and a plurality of wires supporting said springs upon said frame and free from said brace.

10. In combination, a plurality of springs, a frame, wires supporting said springs upon said frame, a brace secured at each end to said frame and extending downwardly therefrom and having an upwardly-curved portion connecting the lower extremities of the two downwardly-extending portions and engaging a plurality of said supporting-wires.

11. In combination, a plurality of springs, a frame, wires supporting said springs upon said frame, a plurality of T-iron braces secured at each end of said frame and extending downwardly therefrom and having upwardly-extending curved portions connecting the lower extremities of the downwardly-extending portions and engaging a plurality of the said supporting-wires.

12. An integral brace formed of T-iron having the web cut away and remaining flange bent to form horizontal supporting portions at each end, downwardly-extending portions adjacent said supporting portions, and an upwardly-curved portion connecting the lower extremities of said downwardly-extending portions.

13. In combination, a frame, a brace for said frame composed of T-iron, the extremities of said brace having the web cut away and the remaining flange bent so as to be adapted to rest upon two opposite component members of said frame, downwardly-extending portions of said brace adapted to engage the inner faces of said component frame members, and

an upwardly-curved portion of said brace connecting the lower extremities of said downwardly-extending portions.

14. In combination, a metallic frame, springs supported thereon by means of wires stretched across the same, a brace stretched across said frame beneath the supporting-wires and centrally arched to bring it into the plane of said supporting-wires.

15. In combination, a metallic frame, springs supported thereon by means of longitudinal and transverse wires stretched across the same, a brace stretched across said frame beneath the supporting-wires and centrally arched to bring it into the plane of said supporting-wires.

16. In combination, a frame, springs supported directly upon said frame, springs supported indirectly upon said frame by supporting-wires and an arched brace stretched across said frame beneath said supporting-wires and adapted to counteract the distorting effect of said supporting-wires upon said frame.

17. In combination, a frame, springs, supporting means stretched between the members of said frame adapted to support said springs thereon, and independent supporting means adapted to support said first-mentioned supporting means and adapted upon pressure being applied thereto to exert a thrust upon said members of said frame in a direction opposite to the stress brought to bear thereon by said first-mentioned supporting means.

18. In combination, a frame, a member stretched between opposite members of said frame and adapted to draw inwardly thereon upon pressure being applied in a downward direction, and a second member stretched between said frame members and adapted to exert an outward thrust thereon upon pressure being applied in the same direction to the central portion thereof.

19. In combination, a frame, a wire stretched between opposite members thereof, springs mounted upon said wire, an independent upwardly-curved brace stretched between said members, and cross members adapted to support said wire and transmit a portion of the load thereon to said brace.

20. In combination, a frame, a wire stretched between opposite members thereof, springs mounted upon said wire, an independent brace stretched between said members, and cross members adapted to support said wire and transmit a portion of the load thereon to said brace, said brace being upwardly curved at its point of contact with said cross members.

21. As a new article of manufacture, a brace adapted to be stretched between opposite members of a frame having at each end downwardly-extending portions adapted to rest flat against the frame members and having an upwardly-curved portion connecting the lower extremities of said downwardly-extending portions and adapted on the application of

pressure to exert an outward thrust upon said frame members.

22. As a new article of manufacture, a brace
5 formed of T-iron adapted to rest upon oppos-
ing frame members and having downwardly-
extending portions adapted to rest flatly
against the inner surfaces of said frame mem-
bers and an upwardly-curved portion con-
necting the lower extremities of said down-
10 wardly-extending portions, the flange of said

T-iron being positioned upon the lower side
of said upwardly-curved portion and the outer
sides of said downwardly-extending portions.

In testimony whereof I affix my signature in
the presence of two witnesses.

JAMES H. SHERRARD.

Witnesses:

J. PONEDAY,
E. S. AHERN.