June 5, 1923. 1,457,658

C. F. GREEN

SEAT SPRING

Filed Nov. 18, 1918

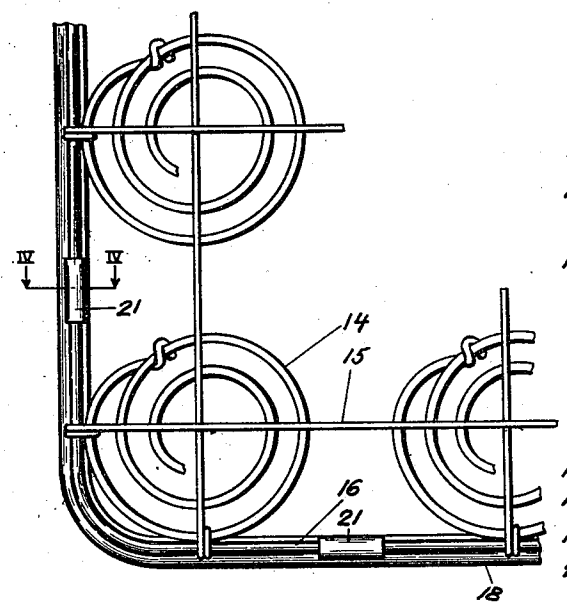


Fig. II.

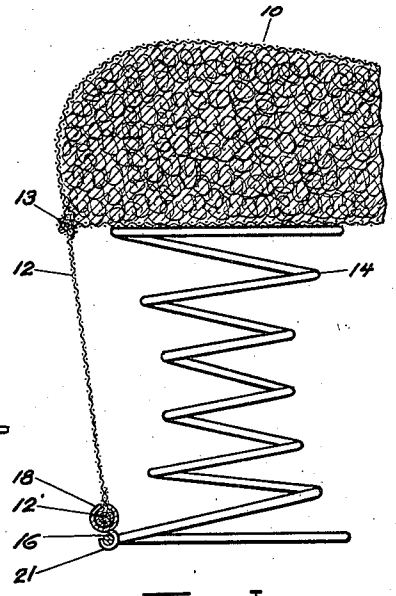


Fig. I.

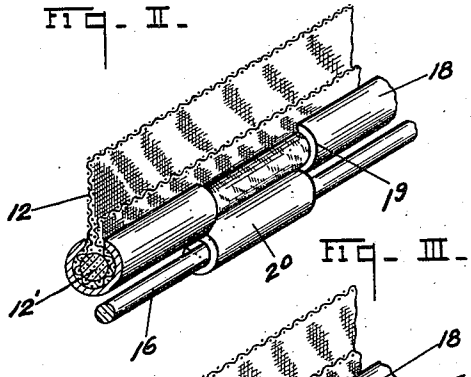


Fig. III.

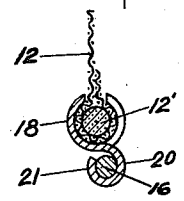


Fig. IV.

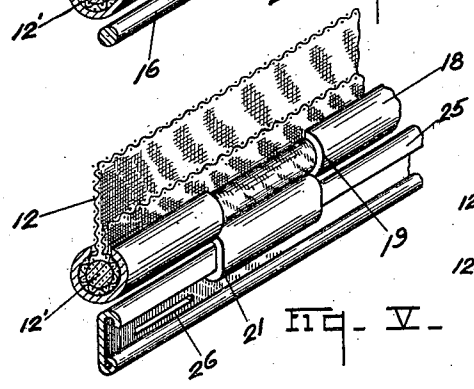


Fig. V.

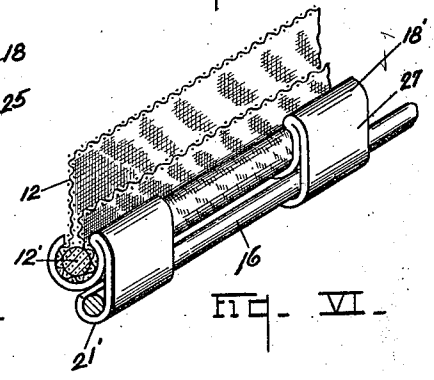


Fig. VI.

INVENTOR.
Charles F. Green
BY Chester A. Braucelton
ATTORNEY

Patented June 5, 1923. 1,457,658

UNITED STATES PATENT OFFICE.

CHARLES F. GREEN, OF DEFIANCE, OHIO, ASSIGNOR TO INDUSTRIAL RESEARCH CORPORATION, OF TOLEDO, OHIO, A CORPORATION OF DELAWARE.

SEAT SPRING.

Application filed November 18, 1918. Serial No. 262,988.

To all whom it may concern:

Be it known that I, CHARLES F. GREEN, a citizen of the United States, residing at Defiance, county of Defiance, and State of Ohio, have invented certain new and useful Improvements in Seat Springs, of which I declare the following to be a full, clear, and exact description.

This invention relates to cushion seats and has particular reference to the means employed for permanently and securely attaching the cushion seat skirt to the spring frame of the spring unit enclosed thereby; one of the objects of the invention being to provide a means for quickly attaching the part as indicated, and which will form a continuous metallic reinforcement for the lower edge of the flexible skirt portion of the cushion seat to protect the same against wear when the cushion is applied to or removed from the vehicle frame or the supporting structure with which the spring seat is to be used.

Further objects of the invention are to provide a novel, simplified arrangement of metallic reinforcing edge for the depending skirt portion of the cushion, which has means whereby a spring frame of the spring unit may be first temporarily attached thereby without necessitating the use of implements, and thereafter the same may be securely clamped into position after being temporarily located in assembled relation. This method of construction thereby greatly facilitating the time required in assembling devices of this character.

Further objects of this invention relate to a construction of attaching means in which the spring frame is assembled to the skirt reinforcing member by an outward and downwardly extended motion of the frame portion, rather than an inwardly and upwardly extending arrangement; the construction placing the part of the spring unit under tension when assembled in the cushion and cooperating with the securing means to maintain the parts in proper cooperative relation.

Further objects of this invention relate to certain economies of manufacture and details of the construction as will hereinafter appear from the description to follow.

I accomplish the objects of my invention in certain instances by the means and devices described in the following specification, but it is evident that the same may be widely varied without departing from the spirit and scope of the invention as pointed out in the appended claims. Certain structures constituting certain embodiments of my invention, one of which may be preferred to others as is deemed expedient, is illustrated in the accompanying drawing forming a part hereof in which:

Figure I is a transverse vertical section of the assembled spring cushion seat.

Figure II is a transverse plan view looking from the bottom of Figure I.

Figure III is a perspective view of one embodiment of the invention showing my improved means for attaching the skirt portion of the cushion to the spring frame.

Figure IV is a sectional view taken on the line 4—4 of Figure II.

Figure V is a view similar to Figure III showing a modification of the invention.

Figure VI is a similar view showing a further embodiment thereof.

Referring to the drawings, the upholstered portion 10 of the spring cushion seat is illustrated as provided with a depending skirt portion 12, connected to the seat portion 10 in a manner as by the beaded means 13. The skirt 12 is adapted to enclose the spring unit of the cushion seat which is composed of a plurality of springs 14, which are usually connected together in any suitable manner, as by a base frame or open work structure 15, usually provided with a continuous border wire 16, although it is to be understood that any type of frame spring unit may be employed with my invention.

The manner in which the means for securing the lower edge of the skirt 12 to the spring unit 14 to support the same and maintain the parts in assembled relation constitutes the main features of the present invention and includes means adapted to form a continuous external metallic reinforcement or sheathing for the lower edge of the skirt 12, having integral means depending therefrom to which the frame unit may be operatively attached and held in the cushion seat, I have shown a tubular shaped member 18, adapted to surround and engage the lower corded edge 12′ of the skirt 12 although it is apparent that any type of clamping member 18 may be used to bind the

same around the lower edge of the strip or skirt 12 on the outside and inside edges thereof. Tube 18 is cut at suitable intervals along the lines 19 and the material 20 between the same is reversely bent as illustrated in Figure IV and curled around to form an upturned supporting hook 21 integral with the tubular member 18, as will be readily apparent from an inspection of this figure.

It will be noted that the integral hooks are substantially in vertical alignment with the tube portion 18 of the reinforcing and securing member, and do not extend inwardly beyond the inner portion of said member; this being apparent from an inspection of Figure IV. It will thus be seen that in assembling the frame or wire 16 of the spring unit to the hooks 21, the frame, whose perimeter may be as great as that of the skirt 12, may be readily placed in the skirt, and by stretching the springs and pulling the wire 16 downwardly and outwardly the same may be made to engage over the hooks 21 without having to compress inwardly the spring frame 16. The spring frame may be thus temporarily located in position and afterwards the hooks 21 may be more securely and permanently clamped into fixed engagements with the spring frame member. In this manner it will be seen that a simplified type of attaching strip is provided in which the same is made of a simple tube slipped over the corded edge 12′ of skirt 12, and merely has a section 20 cut out thereof, reversely bent as indicated to form the attaching means 21. Moreover there is a continuous strip of metal on the outer lower edge of the skirt 12, the same being unbroken on the outer edge to form a protecting means against wear in applying and removing the spring cushion seat from the vehicle supporting frame or other supporting means with which the cushion is used.

In the modification shown in Figure V, the bent hooks 21 are adapted to support a reinforcing band 25 being hung from the strip 18 by the attaching hooks 21. This band or rim 25 is provided at suitable intervals with slots 26, which are intended to receive certain transversely extending base supporting bands, which is one form of spring unit construction, the outer ends of the bands being extended through the slots 26 and turned down on the outer face edge of the supporting hangers 25. In this embodiment of the invention this rim 25 can, if desired be first permanently attached to the transverse bands on the lower portions of the springs when the spring unit is to be assembled into the spring cushion seat and the band 25 need not necessarily be first attached to the supporting and sustaining hooks 21. Various modes of assembling the various modifications illustrated herein will readily suggest themselves to those skilled in the art.

In Figure VI, I have illustrated instead of a continuous tube 18 shown in Figure III, a plurality of spaced clips 18′ made in substantially the form illustrated of short tubes having a reversely bent portion 27 extending around in a vertical direction from the coiled portion 18′ to form means to carry at the lower end thereof the supporting hooks 21′ corresponding to the hooks 21 in the embodiment of the invention illustrated in Figure IV. The embodiment of the invention illustrated in Figure VI is a greatly simplified type of construction and is particularly useful in connection with those types of cushion seats having a skirt 12 with a particularly strong reinforcing bead or edge 12′. The clips 18′ being in such instances sufficient to form the means for securing the same to the skirt 12 and supporting the spring frame 14 by receiving the border wire 16 in the manner shown.

While I have described my invention in more or less detail and as being embodied in certain forms, I do not desire nor intend to be limited thereto, as, on the contrary, my invention contemplates broadly all the proper changes in the form, construction, and arrangement, as well as the omission of immaterial elements and the substitution of equivalents therefor, as the circumstances may suggest, or necessity render expedient.

Having thus described my invention, what I desire to secure by Letters Patent of the United States and claim is:

1. In a device of the class described, including in combination a cushion and a depending skirt therefor, of a spring unit and frame enclosed within said skirt; means for connecting the lower edge of said skirt to said spring unit frame and supporting the same therefrom, comprising a member surrounding the lower edge of said skirt and having integral depending outwardly turned hooks adapted to be bent around and pressed into clamping engagement with a portion of said spring unit frame, whereby the spring unit frame is supported in substantially the same vertical plane with the lower edge of the skirt.

2. In combination with a cushion and depending skirt therefor, a spring unit and frame enclosed by said skirt, and a tube element surrounding the lower edge of said skirt and enclosing the beaded or corded edge thereof, said tube element being provided with a longitudinal slit formed in its upper face for receiving the skirt and integral depending outwardly turned hooks adapted to be engaged over and clamped into pressing contact with a portion of said spring unit frame.

3. In a device of the class described, in-

tegral means for securing the depending skirt portion of a spring cushion seat to the spring unit of said seat, including a tubular shaped member having a continuous outer portion for surrounding the lower edge of said skirt; said tubular shaped member having a longitudinal slit extending throughout its length formed in the upper face thereof for receiving the skirt and being provided at intervals with integrally cut outwardly turned depending hook shaped elements adapted to be clamped around a portion of said spring unit frame.

4. In combination with a cushion and a depending skirt therefor, a spring unit and frame enclosed within said skirt, said skirt being provided with a lower beaded or corded edge, a longitudinally slitted integral tubular member engaging said corded edge of said skirt and clamped thereto, said tubular member being provided with a plurality of integral outwardly reversely arranged clips for permanently securing said tubular member to said spring unit frame.

5. In a seat structure comprising a spring frame and a cushion, a skirt depending from said cushion and provided with a beaded lower edge, a tubular metallic strip extending around the beaded edge of said skirt and having a longitudinal slit for the reception of the skirt, and clips integral with said strip extending downwardly and outwardly to engage the spring frame and retain the same in position below the beaded edge of the skirt.

In testimony whereof, I affix my signature.

CHARLES F. GREEN.