Oct. 14, 1952 H. HOPKES 2,613,734

SPRING SUPPORTING CLIP

Filed Sept. 4, 1945

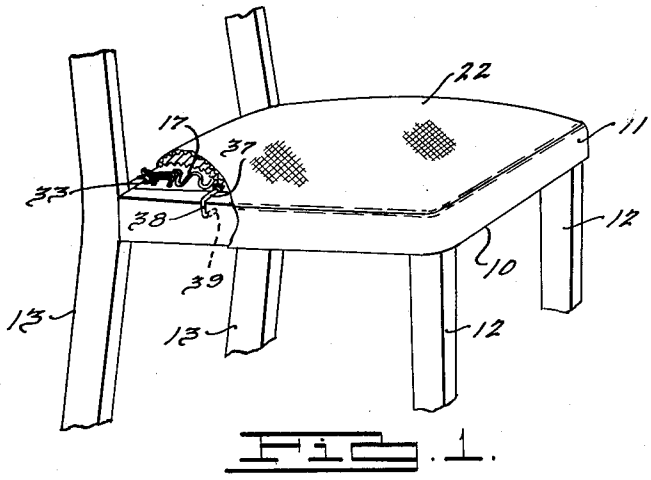


Fig. 1.

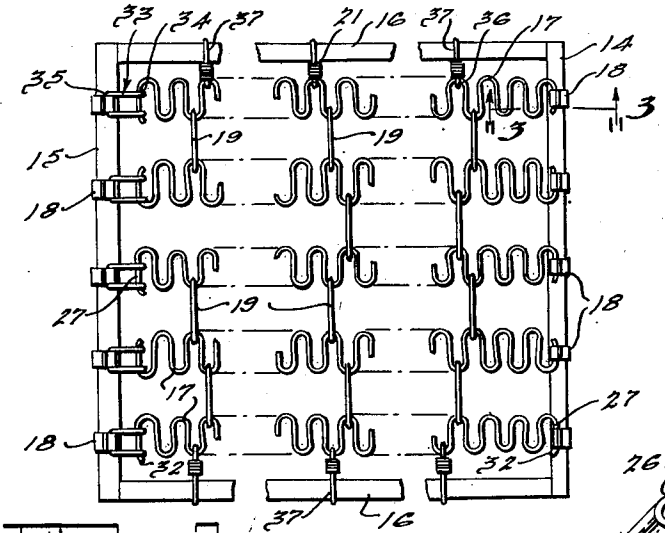


Fig. 2.

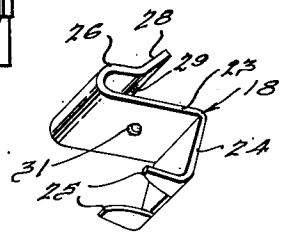


Fig. 4.

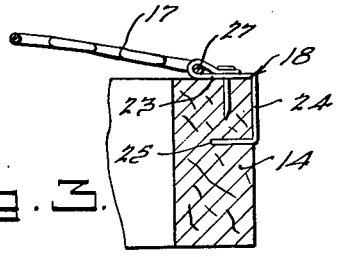


Fig. 3.

INVENTOR.
Henry Hopkes.
BY
Harness, Dickey & Pierce.
ATTORNEYS.

Patented Oct. 14, 1952 2,613,734

UNITED STATES PATENT OFFICE

2,613,734

SPRING SUPPORTING CLIP

Henry Hopkes, New Baltimore, Mich., assignor to No-Sag Spring Company, Macomb County, Mich., a corporation of Michigan

Application September 4, 1945, Serial No. 614,394

1 Claim. (Cl. 155—179)

1

This invention relates to spring supporting devices, and particularly to a clip which is directly driven into a frame for supporting springs thereon.

Various means have been employed heretofor for securing sinuous type spring strips across opposite members of a frame. The frame itself has been preformed to receive the ends of the springs. Clips have been utilized which are nailed to the frame having an eye through which the spring end is secured. Slots have been provided in the frame in which clips are anchored having a loop over which the spring end extends.

The clip of the present construction embodies an angle-shaped element having prongs reversely bent on one end which are driven in the front face of a frame member with the one branch of the angle portion disposed thereagainst and the other portion extending over the top of the frame member. This latter portion is reversely bent to form a loop over which the end of the spring strips extends and is secured thereby. Similarly, the coil springs at the side of the strips may have an inwardly extending end which may be driven into the face of the side frame member for anchoring the spring across the top face thereof.

The clip may be provided with an aperture which is in alignment with an aperture in the reversely bent loop portion for the purpose of drawing the loop portion against the portion projecting over the top face of the frame member and securing it in position by the nail for the purpose of completing the loop.

Accordingly, the main objects of the invention are: to provide a clip for securing an end of a spring with tongues which may be driven directly into the face of the frame members across which the springs are to be anchored; to provide a clip of angle section having one arm provided with tongues parallel to the other arm, the end of which is reversely bent to form a loop for securing the end of the spring strip; to provide a U-shaped end on a coil spring on one arm of which the coil spring extends, the other arm of which may be driven into the face of the frame member for securely anchoring the spring thereto; and, in general, to provide spring supporting means which may be driven directly into a frame member which is simple in construction and economical of manufacture.

Other objects and features of novelty of the invention will be specifically pointed out or will become apparent when referring, for a better understanding of the invention, to the following description taken in conjunction with the accompanying drawing, wherein:

2

Figure 1 is a broken perspective view of a chair having a seat across which a plurality of spring strips are supported by clips embodying features of this invention;

Fig. 2 is a plan view of the spring seat illustrated in Fig. 1, with the upholstered material removed therefrom;

Fig. 3 is an enlarged sectional view of the structure illustrated in Fig. 2, taken on the line 3—3 thereof; and,

Fig. 4 is a perspective view of one of the spring supporting clips employed on the frame illustrated in Figs. 1, 2 and 3.

In Fig. 1, a chair 10 is illustrated having a seat frame 11, front legs 12, and rear legs 13. The frame is constructed of a front member 14, a rear member 15, which are interconnected at the ends by side members 16. A plurality of sinuous spring strips 17 are secured across the front frame member 14 and the rear frame member 15 by suitable clips 18. The spring strips 17 are interconnected by links 19 and the endmost strips are resiliently secured to the side members 16 by coil springs 21. Over this assembly, suitable padding and upholstery material 22 are secured in the conventional manner.

Referring more particularly to Figs. 3 and 4, the clip 18 is illustrated as being made from a strip of material having an arm portion 23 disposed at right angles to an arm portion 24, which arm portions are disposed to engage the top and front faces of the frame members 14 and 15, respectively. The end of the arm portion 24 is provided with tongues 25 sloping upwardly toward the arm portion 23 for the purpose of anchoring the clip in position when the tongues are driven into the front face and the body of the cross members 14 and 15. The end of the arm 23 is reversely bent at 26 to form an open loop in which the end 27 of the spring strips 17 is secured. The reversely bent portion 26 is sloped upwardly at 28 and may be provided with an aperture 29 in alignment with an aperture 31 in the arm portion 23 through which a nail may be driven to draw the sloping portion 28 of the reversely bent portion 26 downwardly against the arm portion 23. This completes the loop about the end 27 of the spring strip which is prevented from being withdrawn therefrom by the offset bent end 32 provided thereon.

It will be noted in Fig. 2 that the ends 27 of the spring strips 17 adjacent to the rear frame member 15 are supported in U-shaped elements 33. These elements have eves 34 provided on the ends in which the ends of the strips are secured. The web portion 35 of the elements 33 is an-

chored in the loop formed by the reversely bent portion 26 of the clip 18, the same as the end 27 of the spring strip when secured in the clips 18 attached to the front frame member 14.

The U-shaped element 33 is illustrated and described in the copending application of Andrew Mouw, Serial No. 468,535, filed December 10, 1942, and assigned to the assignee of the present invention. This element permits the rear end 27 of the spring strip to deflect downwardly below the top of the rear frame element 15 when a load is applied to the spring strips. This permits the seating surface to assume a desirable contour when occupied for providing a more uniform distribution of the load over the entire surface of the seat.

The coil springs 21 which join the convolutions of the strips to the side frame members 16 have a hook 36 on one end which hooks over the wire of the convolution of the spring strip. The projecting wire portion 37 on the opposite end is deflected downwardly at 38 and inwardly at 39 in the shape of a staple. The portion 39 is driven into the face and body portion of the side members 16 with the projecting portion 37 resting on the top surface of the side members to securely anchor the coil springs in position. The clips 18 and the coil springs 21 are rigidly secured to the frame members 14, 15 and 16 by having the tongues 25 of the clips 18 and the projecting ends 39 of the coil springs 21 driven directly into the members. It is only necessary thereafter to hook the ends 27 of the spring strips over the loops of the clips and the eyes of the coil springs 21 over the adjacent convolutions to complete the assembly.

What is claimed is:

A clip for supporting a spring, said clip being made of strap material having an arm portion to be disposed across the edge of a frame in engagement therewith and a second arm portion

at substantially right angles to said first arm portion adapted for engaging the outer face of the frame element, the free end of said second arm portion extending inwardly under said first arm portion and formed to provide a pair of spaced tongues adapted to be driven into the frame element for securing the clip thereon, the free end of said first arm portion being reversely bent to extend thereover and form a narrow slot of substantial width open outwardly of the frame when secured to the frame element in position to receive the spring which applies a tension to the clip in the direction in which said tongues are driven, said reversely bent end portion and said first arm portion each having an aperture therethrough disposed in aligned relation to each other to receive a nail which may be driven therethrough into the frame element for closing the slot after the end of the spring has been secured therein.

HENRY HOPKES.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
682,847	Forsyth	Sept. 17, 1901
1,134,132	Hotchkin	Apr. 6, 1915
1,890,090	Kronheim	Dec. 6, 1932
2,083,810	Bank	June 15, 1937
2,096,822	Oldham	Oct. 26, 1937
2,118,974	Herman	May 31, 1938
2,142,740	Wechsler	Jan. 3, 1939
2,257,633	Bank	Sept. 30, 1941

FOREIGN PATENTS

Number	Country	Date
321,211	Great Britain	Nov. 4, 1929