April 29, 1958 T. E. BATEY 2,832,171

RUG FRAME

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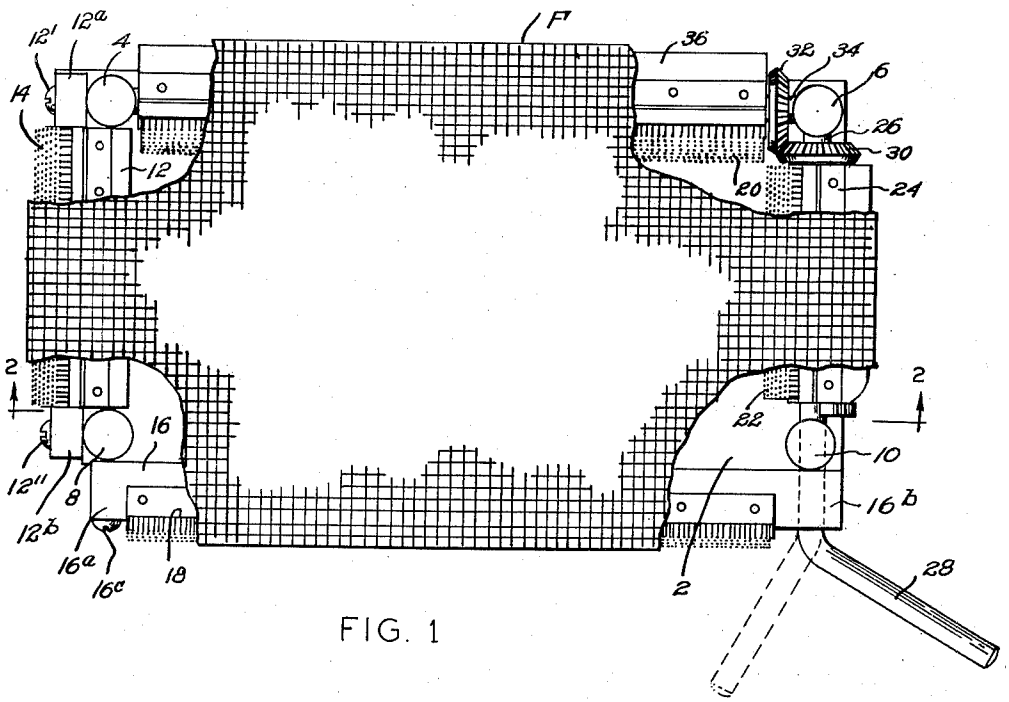


FIG. 1

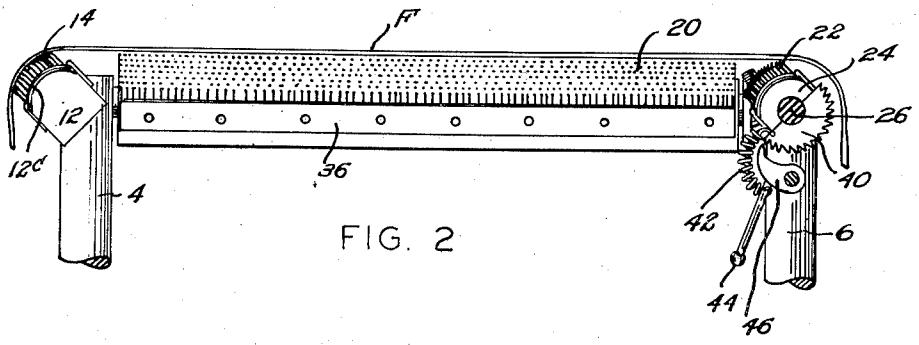


FIG. 2

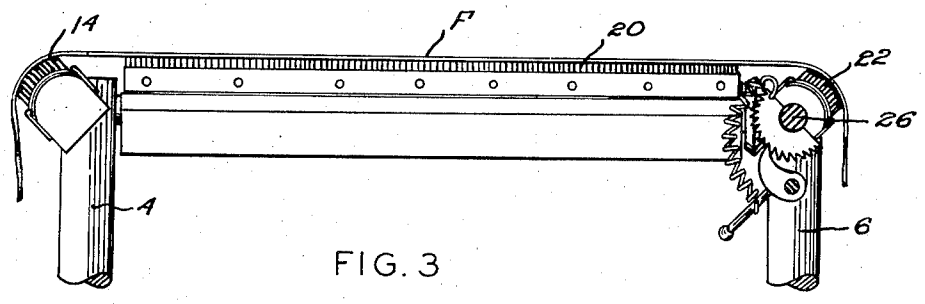


FIG. 3

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RUG FRAME

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1 Claim. (Cl. 45—24)

This invention relates to a fabric supporting frame for use particularly in supporting and stretching a piece of coarse woven material of the class commonly employed in making hooked rugs.

In hooked rug frames heretofore used to hold a section of base fabric in a fimly stretched position suitable for hooking operations, various mechanical engaging and tightening means have been proposed involving the use of cumbersome locking bars and various types of piercing elements, all of which have been objectionable for one reason or another and particularly lacking in convenience in changing the work area of the fabric from time to time.

It is an object of the present invention to provide a rug hooking frame of the class indicated and to devise a means for quickly and conveniently engaging any desired section of a base fabric and subjecting it to tensioning forces which may be exerted outwardly away from each of four sides of any given fabric area by means of one simple rotary adjustment. Another object is to devise a combination hooking frame and fabric engaging means which is so arranged that the apparatus may be instantly engaged and instantly released at will regardless of the section of fabric which is being dealt with.

These and other objects and novel features will be more fully understood and appreciated from the following description of a preferred embodiment of the invention selected for purposes of illustration and shown in the accompanying drawings, in which:

Fig. 1 is a plan view illustrating the rug hooking frame of the invention and particularly showing a fragment of hooked rug base material placed on the frame in readiness to be stretched;

Fig. 2 is a view taken approximately on the line 2—2 of Fig. 1 illustrating portions of the device in elevation and other portions thereof in cross-section; and

Fig. 3 is a view similar to Fig. 2 but showing the fabric stretched.

In accordance with the invention, I have found that I may accomplish the objectives above outlined by means of a special fabric stretching mechanism. This mechanism is based on the novel concept of using a plurality of card clothing members in cooperating relationship with respect to one another.

In one preferred embodiment of the invention, I have devised means for supporting four of the card clothing members in a position such that they define a rectangularly shaped fabric supporting enclosure and so that there may be produced rotative movement of two of the card clothing members with respect to the remaining two card clothing members. In this arrangement, the wire points of the card clothing members are bent at a slight angle and may be employed to lightly support and cling to a given piece of fabric without impairing its texture and, yet, the holding effect of the points provides for a desirable stretching of the fabric being releasably held at all times.

Referring more in detail to the drawing, numeral 2 indicates a base member of any convenient form, such as a rectangular piece of wood, metal, plastic material or the like. Vertically disposed on this base 2 are corner posts 4, 6, 8 and 10. Between the corner posts 4 and 8 is supported a stationary card clothing carrier bar 12. This carrier bar 12 includes reduced ends 12*a* and 12*b* through which are received screws 12' and 12'' threaded into posts 4 and 8. On bar 12 is formed a roll segment having a curved surface 12*c* to which is secured a fabric engaging element consisting of a card clothing member 14. The extremities of the wire points of the card clothing member are bent to extend outwardly in an angularly directed manner, as suggested in Figs. 2 and 3.

Similarly located between the posts 8 and 10 is fixed a second stationary card clothing carrier bar 16 having reduced ends 16*a* and 16*b* of which end 16*a* is secured by a screw 16*c*, as shown. The end 16*b* is received on a shaft 26 hereinafter described in detail. A card clothing member 18 is arranged in substantially the same angularly disposed manner as that described with respect to the card clothing 14 of the bar 12 but with the wire points bent and projecting in a direction substantially at right angles to the direction in which the points of member 14 extend.

With these two stationary card clothing members 14 and 18, I further provide two rotatable card clothing members 20 and 22, each of which has bent wire points as shown. The card clothing member 22 is of substantially the same size as the card clothing members 14 and 18 and is supported on a carrier bar 24 which is fixed to the shaft 26, the outer end of which presents a handle portion 28. The shaft member has its opposite end pivotally mounted in the post 6 in a suitable bearing provided therein and also extends through and is free to turn in the post 10 and the carrier bar 16, as noted above, to support the latter member as an integral part of the two posts and intervening carrier bar 24.

Card clothing member 22 is normally arranged in a position such that its bent wire points are angled inwardly, as shown in Fig. 1, and extend in approximately the same direction as the wire points of card clothing member 14, although the bent outer ends of these points of member 22 are in opposed relation, as shown. Therefore, it will be apparent that, by rotating the handle 28 and shaft 26 in a clockwise direction, as viewed in Fig. 2, the points of card clothing member 22 may be swung into a position such as that shown in Fig. 3.

Attached to the shaft 26 at one end thereof is a ratchet member 40 having secured at one extremity a spring 42 anchored at its opposite end to a lever 44 pivoted on post 6. A pawl 46 is pivotally mounted on post 6 in a position to engage the ratchet, as shown in Fig. 3. This mechanism locks both rotatable members 20 and 22 in any desired position.

Fixed on shaft 26 between the post 6 and an adjacent end of the carrier bar 24 is a beveled gear 30 (Fig. 1), which is in mesh with a beveled gear 32 fast on a shaft 34. This shaft 34 carries the second rotatable card clothing bar above referred to and indicated in the drawings by the numeral 36. On this card clothing bar 36 is the card clothing member 20 normally occurring in the position shown in Fig. 1 and also having bent wire points. The shaft 34 is rotatable in suitable bearings in the posts 4 and 6 and may be rotated by the beveled gears 30 and 32 into a position such as that suggested in Fig. 3 in which the points of this member project outwardly in oppositely directed manner from the points of the card member 18.

It is pointed out that, in the preferred embodiment shown, each of the card clothing members represents

arcuate sections of the same radius and the axis of each of these arcuate sections lies in substantially the same horizontal plane. As a result of this, a fabric F of the type employed in hooking a rug may be supported on the several card clothing members and caused to assume a substantially level or horizontal position, regardless of the position into which either of the rotatable card clothing members 20 and 22 may be moved.

In using the rug hooking frame, the card clothing members 20 and 22 are positioned as shown in Fig. 1 and the rug fabric F is placed over the frame in a position such that a desired section in which hooking is to be performed occurs within the area defined by the four card clothing members. In this position, it is intended that the points of each member will lightly engage with and cling to the underside of the fabric.

Thereafter, the handle 28 is turned in a clockwise direction, as shown in Fig. 2, and the card members 20 and 22 are rotated about two different axes occurring at right angles to one another. As this takes place, the points of the card members 20 and 22 engage more deeply in the fabric F. Simultaneously, tensioning forces are exerted on the fabric in four opposite directions and the fabric becomes tightly stretched in a position such as that shown in Fig. 3. At the same time, the ratchet and pawl mechanism operates to successively hold the shaft 26 in each new position of advancement in its clockwise rotation until a desired degree of stretching has been accomplished in the fabric F.

The hooking operation is then carried out in the stretched area, and, when this portion of the work is completed, the fabric F is instantly released by disengaging the ratchet and pawl mechanism and rotating the shaft 26 in a counterclockwise direction, as viewed in Figs. 2 and 3. An adjacent section of the rug fabric may then be posiitoned and the operation repeated in the manner described.

It will be evident that, by the arrangement described, any desired section of a rug fabric may be instantly positioned and stretched into a properly spread out position to facilitate the hooking operation, and this desirable positioning of the fabric is achieved in such a way that access may be had to the stretched section from any one of four sides and from either the top or the bottom thereof. It will also be appreciated that by merely releasing the ratchet mechanism and turning the handle, the rug

section can be instantly released and at no time is any injury caused to the fabric texture. This is especially due to the fact that the multiplicity of wire points distribute the holding forces exerted on the fabric over a substantially large area and none of the constituent fibers are overstressed.

While I have shown a preferred embodiment of the invention, it is intended that the frame may be used for various purposes and various other means may be employed for supporting a plurality of card clothing members and moving them apart from one another to exert tensioning forces. Similarly, the means for producing rotative movement of card clothing members may be varied in different ways and the locking means described may take other forms, all within the scope of the invention as defined by the appended claim.

I claim:

A rug hooking device comprising a rectangular frame, vertically disposed corner posts supporting said frame, four supporting bars extending between the upper ends of the posts and attached thereto to define a rectangular shaped rug supporting enclosure, two of said bars being stationary and having card clothing members secured at their upper sides, said card clothing members comprising elongated bars arcuate in cross section and having fine wires fixed in their outer surface, the wires being bent slightly to provide hooking elements engageable by a rug fabric, the other two bars being mounted for slight rotary movement on the posts and having card clothing members similar to those on the said first named bars, means for rotating the said last named bars in unison, the said rotation causing a tensioning of a rug as the rug is caused to adhere to and be gripped by the wires on the said bars.

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