Aug. 7, 1928. 1,679,638

A. T. THOMPSON

LOOM

Filed April 29, 1927

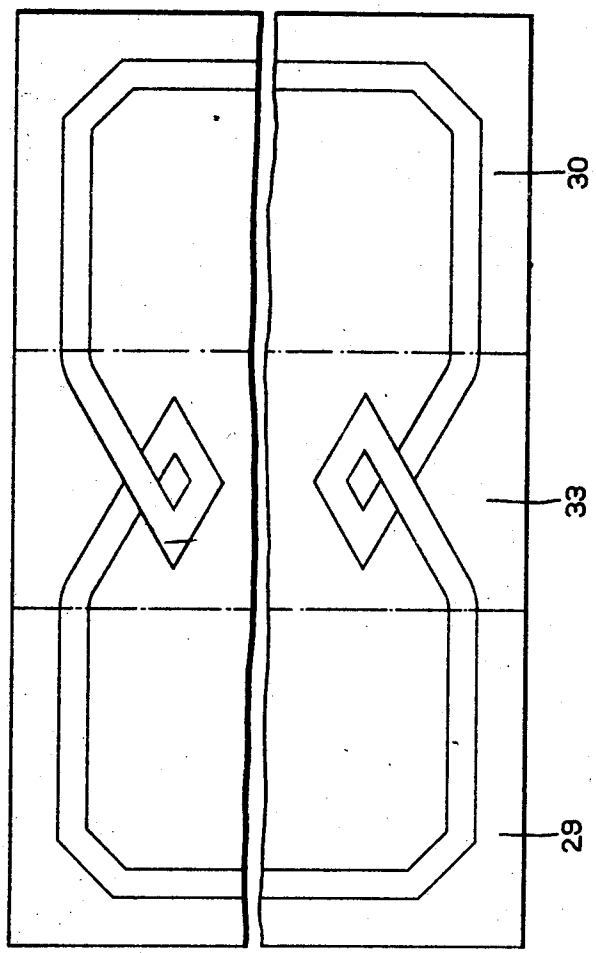


Fig. 1.

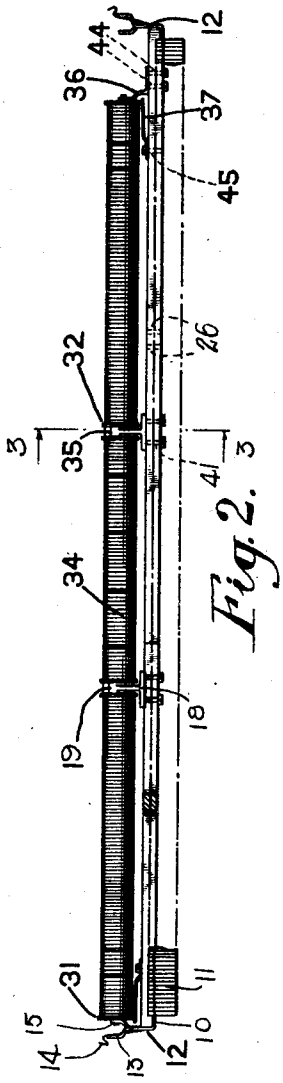


Fig. 2.

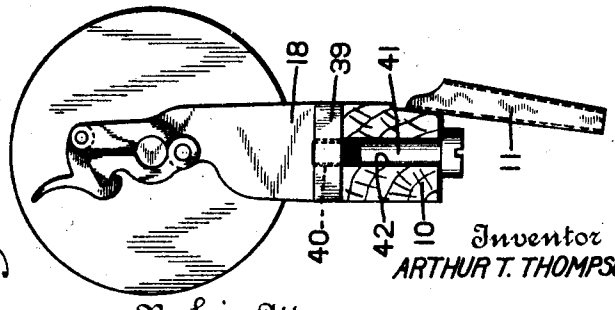


Fig. 3.

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UNITED STATES PATENT OFFICE.

ARTHUR T. THOMPSON, OF HIGHTSTOWN, NEW JERSEY, ASSIGNOR TO HIGHTSTOWN RUG COMPANY, OF HIGHTSTOWN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LOOM.

Application filed April 29, 1927. Serial No. 187,452.

This invention relates to a method of manufacturing pile fabrics of the Axminster type and to improvements in Axminster looms. More particularly the invention relates to the tubing frames used with such looms and a method of setting the tuft yarns on the loom spools of such tubing frames.

In the weaving of Axminster rugs and carpets the yarns for each row of tufts across the breadth of the rug or carpet are set or wound upon one or more loom spools in accordance with a master pattern, the said spool or spools being carried with a tubing frame adapted to feed the yarns in proper arrangement to the loom.

One object of this invention is the provision of a tubing frame which, while intended for use with a loom designed to weave rugs or carpets of a predetermined width, is equally applicable for use with the same loom in the weaving of a rug or carpet of a narrower width.

Tubing frames for Axminster type looms adapted to weave relatively wide rugs or carpets have heretofore carried three loom spools of equal length and a false head has been provided for one end spool whereby the effective length of that spool has been shortened so that the overall width of the rug woven therefrom is decreased by an amount equal to the amount the effective length of the one spool has been shortened.

According to the present invention the effective length of the end spools is unchanged but the end or middle spool is reduced in length and the tubing frame is made adjustable to accommodate either disposition of spools.

The invention also relates to a method of setting a plurality of spools of differing lengths as just described for use in connection with a single tubing frame whereby the labor involved in the preparation of the patterns and in the step of setting the spools is materially reduced.

These and other objects of the invention and the means for their attainment will be more apparent from the following detailed description taken in connection with the accompanying drawings illustrating a preferred embodiment thereof in which:

Figure 1 is a plan view showing the patterns for a rug in accordance with this invention and it may also represent the rug woven from such pattern.

Figure 2 shows a tubing frame similar to those usually provided but modified in accordance with this invention to receive spools set in accordance with the patterns of Figure 1.

Figure 3 is taken on the line 3—3 in Figure 2 looking in the direction of the arrows and showing the adjustment of one of the loom spool supports on my tubing frame.

Axminster type looms for the weaving say of nine foot wide rugs have heretofore been furnished with a tubing frame such as shown in Figure 2 comprising a wooden tube supporting member 10 to which the metallic tubes 11 are attached. Each end of the supporting member 10 carries a bracket 12 formed with an ear 13 and catch 14 for engagement with the endless chains (not shown) which carry the series of tubing frames to the loom. The bracket also is formed with a bearing 15 for the end loom spools. At equal distances from the end brackets 12 are usually disposed brackets, such as 18 formed with bearings 19 wherein three loom spools of equal length, say three feet each, may be removably journalled. When a narrower rug, say eight feet three inches in width, is to be woven on the nine foot loom, the manufacturers have heretofore provided a false head whereby the effective length of that loom spool has been reduced.

For the nine foot Axminster looms each frame carries three loom spools set with coils of tuft yarns adapted to form one row of tufts along the breadth of a rug.

The loom spools are wound with spiral coils of variously colored yarn to form one row of tufts according to the master patterns along the breadth of the rug.

The operation of transferring the yarns from the reel spools to the loom spools is called "setting". Yarns from the reel spools, one reel spool for each coil or tuft yarn, are led through a comb in the prescribed order according to the pattern and wound on the loom spool in accordance therewith. The pattern from which the spools are set represent, in substantially the same proportions, the rug in question and hence Figure 1 may be considered as a representation of the master pattern as well. The pattern has heretofore been sub-divided into three sections, one for each spool, so as to form what is, in effect, three patterns, two

adjacent patterns of the same width and one end pattern of a shorter width. On the other hand the design of rugs or carpets is generally symmetrical, that is, the borders of the rug at each side are similar but obviously the reverse of one another. As previously proposed the central pattern has been off center with respect to the central spool while a portion of what may be considered the border and which is identical with the other side of the rug has frequently had to be included on the central spool because obviously fewer tuft yarns could be set on the foreshortened end spool carrying the false head. This foregoing method has necessitated the separate setting of three spools according to three separate and distinct patterns.

The present invention seeks to obviate the foregoing difficulties and reduce the labor involved in preparing the patterns and setting the spools. As shown in Figure 1, when considered as a rug, the border sections 29 and 30 at each side are similar and equal, only the reverse of one another, and hence only a single master pattern, say 29, is necessary and a single setting of the reel spools required. Then after say the end spool 31 is set, the other end spool 32 may be wound with the tuft yarns from the same arrangement of reel spools by merely rotating the second spool 32 in a direction opposite to that in which the first spool was rotated to wind the tuft yarns thereon and then reversing said loom spool 32 when it is placed in the tubing frame.

The design of the rug is thus symmetrical with respect to the mid-section of the pattern 33 and as that pattern 33 is of less width than the identical sections 29 and 30, a shorter loom spool 34 is thus necessary. It will be readily appreciated that since the patterns for the borders are similar only one pattern need be made for both designs while the actual laying out of the central pattern, since the design is centrally disposed with respect thereto, takes considerably less time.

To accommodate the shorter central spool 34 on a tubing frame of standard length, the bracket 35 is moved nearer the similar bracket 18 so as to support therebetween the loom spool 34, which is, say, 27 inches in length, and a supplemental bracket 36 is removably attached at a distance, say of three feet, from the displaced bracket 35 to support a loom spool of standard length, say three feet, therebetween. The friction spring 37 is also moved from its position adjacent the right hand bracket 12, as seen in Figure 2. To permit adjustability the bracket 35 and, if desired, the bracket 18 may be formed with a base 39 having holes 40 tapped therein to receive screws or bolts 41 passing through suitable passages 42 drilled in the supporting member 10. Thus a pair of holes 26 may be drilled in the supporting member at a point three feet from the right hand end bracket 12, for fastening the bracket when three foot spools are used. An additional pair of holes may be drilled at a distance three feet, nine inches from the right hand end of the supporting member to receive the bracket 35 when a central spool only two feet three inches in length is used. Similarly an additional pair of holes 44 may be drilled near an end in order to permit the mounting of the supplemental bracket 36 and an additional hole 45 to permit the fastening of the friction spring 37 in the adjusted position.

It will thus be seen that a method of setting loom spools has been provided which requires only two patterns and permits the setting of two spools from a single disposition of reel spools and this method is rendered possible by a provision of a tubing frame which is readily adjustable to receive three spools, the central one of which is shorter than the two end spools.

Various modifications may be made in the character of the brackets serving to support the spools on the tubing frame as well as in their method of adjustment and no limitation is intended by the illustrations in the accompanying drawings or phraseology in the foregoing description except as set forth in the appended claims.

What I claim is:

1. The method of weaving relatively narrow rugs and carpets on Axminster looms comprising setting two end loom spools from a single pattern and a shorter central spool from a pattern of relatively narrow width.

2. The method of weaving relatively narrow rugs and carpets on Axminster looms comprising setting two end loom spools from a single pattern and a shorter central spool from a pattern of relatively narrow width, mounting the spools on a tubing frame of standard length and weaving the rug or carpet by means of a series of such tubing frames in the usual manner.

3. A tubing frame for Axminster type looms comprising a tubing support adapted to support three loom spools of equal length, loom spool bearings carried at the ends thereof, two intermediate spool bearings also carried thereby, means to adjust one of said intermediate bearings nearer the other, to support a spool of shorter length, a supplemental end bearing and means to secure said supplemental bearing to the tubing support.

4. A tubing frame for Axminster type looms comprising a tubing support adapted to support three loom spools of equal length, two loom spools of equal length, a shorter central loom spool, and means to support said loom spools from the tubing frame.

In testimony whereof I affix my signature.

ARTHUR T. THOMPSON.