

Tapestry Weaving: Its History and Technique

BY LUTHER HOOPER

A GREAT variety of woven materials, which are made and sold today, are called "Tapestry" by the manufacturers who make and the dealers who sell them; but they have no right to the name. They are for the most part cheap, machine-made fabrics intended for furnishing and upholstery work: they are made on machine looms more or less in imitation of real tapestry and are constructed of extremely perishable materials.

Real tapestry, on the contrary, is a solidly woven, durable, artistic, handmade textile, which has been specially known by that name ever since it was introduced from the East by the Merchant Adventurers of Italy. It soon became highly valued in all European countries in the Middle Ages, and in the workshops of the Netherlands was carried to its highest pitch of perfection, the most famous artists of the time being employed to make designs for the work.

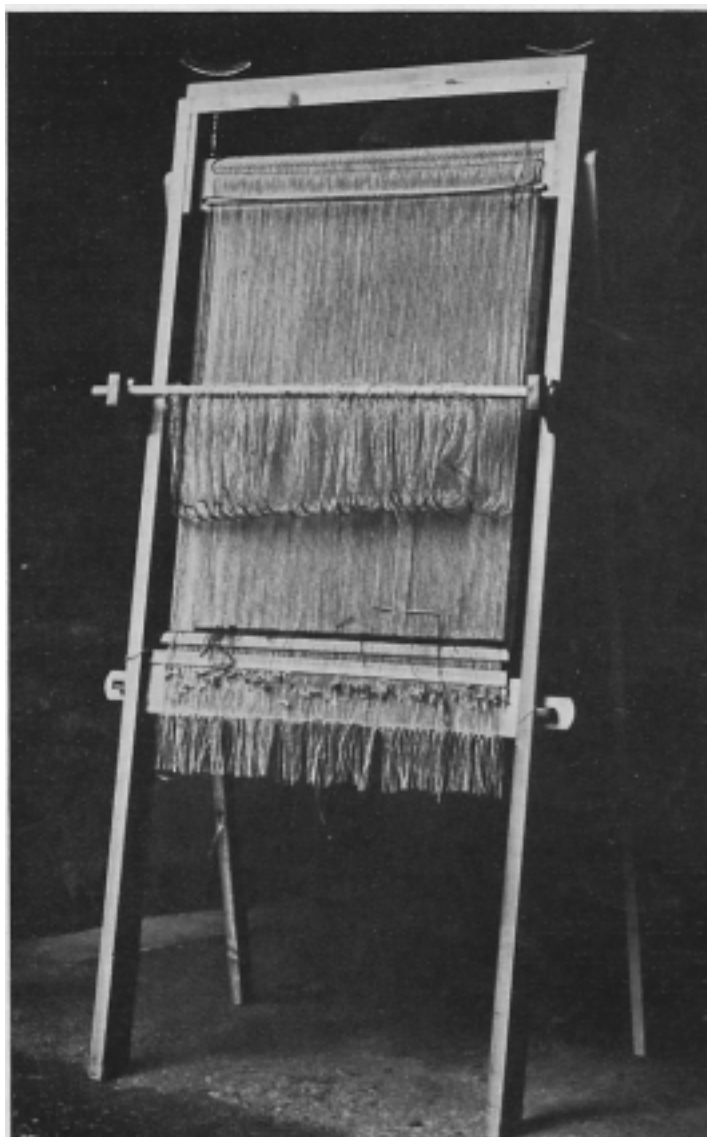


Figure 1
Tapestry loom set ready for work

The name *Tapestry* is derived from Greek, Latin, Italian, and French words, all of which signify a carpet, covering, or hanging. It was natural, therefore, that the materials used in early times for covering the inner walls of the great houses and palaces of the nobility and gentry, which were woven in the same manner as the gorgeous fabrics imported from the East, should have been called "tapestry" or "carpet work."

There is a peculiarity in the texture of tapestry weaving which has hitherto rendered it impossible to imitate it with success by means of any method but pure and simple handicraft. No shuttle or other implement, whether impelled delicately by hand or driven with great force

by steam power, for carrying the weft into its place between the alternating groups of warp strings, is delicate or discriminating enough to supersede the skilful weaver's hand. This technical point must



Figure 2

The tapestry is 32'' x 20'' and was woven in the author's studio

be left unexplained for the moment but will be fully dealt with presently, when an important comparison will be made between the essential technique of tapestry and that of plain automatic weaving.

There is no other branch of textile art which affords so much scope and freedom of design to the artist as tapestry weaving, for there are no "repeats of design" to be considered as in more automatic weaving. The whole surface of a piece of tapestry, however large, is a kind of woven mosaic consisting of small patches of plain weaving in many colors and various shapes which are gradually built up, one above the other, and interwoven on a foundation of warp threads very tightly and evenly

stretched on a simple, strong, upright frame which is the only considerable appliance necessary for the work. Moreover, however elaborate the design may be, the actual weaving is of the most primitive nature, being of the texture technically called the "plain tabby weave."

Designs for tapestry weaving have to be most carefully and exactly planned out, and the edges or contours of the shapes forming the composition have to be clearly defined and determined before the weaving can begin, as no alterations can be made, except with the greatest difficulty, after each portion of the design, beginning at the bottom edge, is gradually piled upward and finished as it will remain for good.

A great deal of the wealth both of ancient and mediaeval times consisted of precious hangings, coverings or garments, the materials of which were either woven in the tapestry manner or woven in plain, open, tabby texture and decorated with painting or needlework, the more close and durable tapestry being the most highly valued. As, however, the knowledge of automatic pattern weaving and the variety of textures to which the extremely fine silken thread naturally lends itself spread from China, its original source, to Byzantium, Persia, Arabia and, finally, through Italy or Spain to the whole of Europe, the use of tapestry weaving for garments declined, but tapestry weaving for furniture,

hangings and coverings flourished more and more, both in the East and West, and reached its highest point of development in the seventeenth, eighteenth and nineteenth centuries, as witnessed by the splendid specimens of the tapestry weaver's handicraft preserved in almost their original splendor for our study and delight in the various national museums, historic houses and private collections of today.

Before proceeding to examine the few characteristic specimens of tapestry weaving, chosen for illustrations to this article, woven in very early as well as in later and quite modern times, it is necessary to define clearly the difference between appliances for, and the techniques of tapestry weaving and ordinary weaving, whether the latter be by

hand or power; and, also, to point out the contrast between the simplicity of the tapestry loom and the complexity of the fittings and appliances of even the ordinary loom actuated by foot power, with its ever-changing mechanical automatic devices for the production of different textures and repeating designs.

The loom for tapestry weaving, whatever the size and scale of the work, always remains the same in principle, and its only requirements are to stand very firmly in a more or less upright position, bear the extraordinary high tension of a multitude of strings without giving way in the least at any part, and to allow the tension to be under command of the weaver to slacken or increase at will. No automatic devices are necessary for opening the sheds, no shuttle for introducing the weft into the opened shed, and no power but the skilful hand of the weaver with its delicate, sensitive fingers is needed for producing the most elaborate designs.

The photograph of such a frame, mounted and prepared for weaving tapestry panels or small carpet work, is shown at Figure 1.

The frame is prepared for weaving a panel of tapestry 2 feet 8 inches by 1 foot 10 inches: the same size exactly as the panel or floral design, a photograph of which is reproduced in Figure 2. This piece was designed and, unfortunately, left partly finished by a late pupil of the author's; later it was completed by the author himself. This form of loom would also be perfectly adapted for weaving such a small tapestry carpet or kelein as the subject of the illustration No. 3, which is 6 feet long by 1 foot 10 inches in width.

The warp with which the loom is mounted consists of very slightly spun three-fold, flat seaming twine, which is extremely pliable and quite heavy, which is an advantage in the case of carpet weaving; it is also free from the harshness of highly twisted cord, whether of flax or cotton; it is also uninfluenced by the changes of weather. The count of the warp is 12 threads to 1 inch and it must, of course, be very evenly distributed.

As a means to the even distribution of the warp across the loom, a double row of small, smooth, wire pins (see letter K, Figure 4) driven into the movable stretcher near the top of the frame, neatly takes the place of the reed of the ordinary loom, and has the advantage of allowing different counts of warp to be mounted without changing the spacing of the $\frac{1}{4}$ -inch divisions, which answer to the dents of a reed. When the warp is being arranged great care has to be taken to make sure that the same number of threads are in each space between the pins, whatever the count may be, before covering the projecting row of pins with the grooved cap shown at letter A in the working drawing of the whole loom (Figure 4). The *lease* or cross in the

warp by means of which the twines of the warp are kept from overlapping each other, which is common to all looms however simple or elaborate, is shown just below the reed in Figure 1. The cross has been taken by means of a large packing needle, such as that left in the warp at the lower part where a



Figure 3

Carpet designed and executed by the author, assisted by several pupils

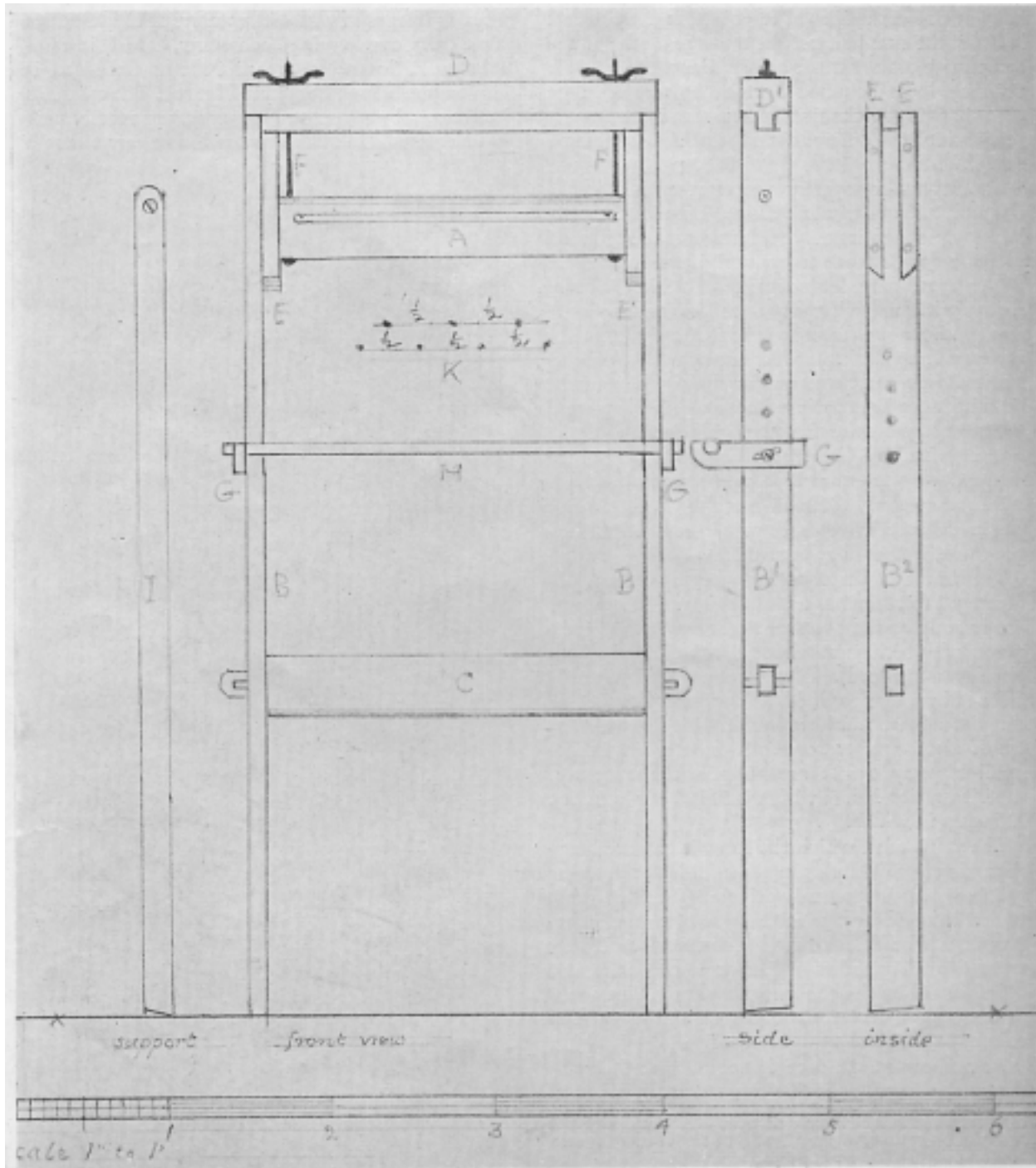


Figure 4
Working drawing of tapestry loom to scale 1" to 1'

short strip of tapestry has been woven, threaded with a strong, fine, colored cord. The passage of the needle over and under alternate warp twines from right to left and backwards from left to right has left the crossing threads of warp between the weft as in tabby weaving. In this returning shed a half-inch pointed, wooden rod has been inserted. The

rod being permanently fixed in its position will keep the same shed open with sufficient clearness for the expert weaver to find it with ease and pass his needle through it in any part of the warp below that place.

Passing downwards from the cross-rod, the next thing to notice is the heald rod supporting the



Figure 5

Tapestry woven ornaments from a robe of Amenhetep II found in the tomb of Hrothing IV. Amenhetep reigned in Egypt B.C. 1500

the tapestry loom, as will have been seen from the photograph of the mounted one (Figure 1), is an appliance of the greatest simplicity, it must not be supposed that it does not need to be very carefully constructed in order to meet the special requirements of the work for which it is intended. The most obvious quality needful is that of strength in the wooden frame, so that it will bear without bending or twisting the surprisingly great and constant tension which the warp twines have to bear all the time the work is in progress. The strain on every twine is from 5 to 10 pounds weight, according to the length of warp between the top and bottom of the frame. The next very important qualification for the loom-frame is that it must be exactly rectangular: if it be in the least degree out of

healds, which are looped, one by one, between each of the front twines to those at the back. By means of these healds the second opening for a tabby shed can always be made at any local part of the warp, or right across the loom. When all the healds are in place and found quite correct they are tied in groups of 10s, or any regular number for convenience of counting. Making the healds and looping them both to the back twines of the warp and also to the heald rod will be described when the section dealing with the technique of the subject is reached.

Notwithstanding that

square, by so much the tapestry or carpet woven on it, however truly and carefully worked in all its details, cannot be correct in this particular. Many of the Eastern carpets, which are marvels of minute detail and patient labor, are conspicuous for this defect, evidently owing to the rough and careless construction of the looms on which they have been woven. Two further qualifications which affect the comfort of the weaver when at work are: that the



Figure 7

Part of the border of an old Flemish Tapestry, 16th Century

loom is so designed to firmly stand alone in an upright position, or to lean steadily against a convenient wall, and that it must be perfectly rigid and unshakeable. The loom should also be so designed that the weaver can sit in comfort at his work and have no difficulty in regulating the tension of the warp or the height of his work in the loom, as it slowly grows upward from the bottom edge.

Should the work be of such a size as to require a longer length of warp than *one and a half times* the capacity as to height of the stretching frame, a pair of strong rollers and ratchets with pawls must be added which will, of course, considerably modify the design and construction of the loom. This will be dealt with when the weaving of large and perhaps more important hangings and carpets is under consideration.

In conclusion for this section of our subject, the necessary directions for building a tapestry loom for small panels and carpets such as those of Figures 2 and 3 (see Figures 1 and 4) must be given as briefly as possible.

The drawing (Figure 4) is made exactly to scale,

1 inch to the foot, and consists of nine separate parts in all: (1) The stretcher bar A; (2) two upright posts B, B, B¹, B²; (3) a strong tie or cross-piece C; (4) a very strong top bar D, D¹; (5) two pieces forming a slot between them E, E, E, E; (6) brackets for headle-rod G, G, G; (7) headle-rod H, and (9) back support for frame, enabling it to stand alone, slightly sloping backwards like an artist's easel.

The frame, in all its parts, must be of hard wood which must be well seasoned, and the various parts should be cut out some time before they are fitted together so as to prove that they will not bend, or twist out of shape, when the loom is finished. All the parts except the top bar D, the stretcher bar A, the cross bar C, the support I, and the brackets G, are made of wood 1 inch by 3½ inches. The bars C and A are 1 inch by 5 inches, and the top bar D, D¹, having to be very solid, must be 4 inches by 3 inches and be cut and shaped as shown at D¹, so as to fit exactly into the top of each of the side posts B, B, as in the side view of a post marked B¹.

(Continued on page 40)



Figure 8

The Harrow School Lion. Woven on a Table loom 18'' x 10''

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The stretching bar C must fit exactly into the slots, one of which is shown at the top of the inside view of the side post B², and the long bolts F, F, with wing-knuts connecting the bar D and the stretching bar A together, must be very strong. The bolt, screw-worm and matrix of the wing-knut must be perfectly fitted one to the other so that the stretching bar can be moved very gradually for tightening or loosening the warp.

The bracket for the headle-rod is fixed by a small bolt and wing-knut to the side post of the loom, and can be moved higher as the work proceeds, extra holes being provided in the post for that purpose.

The cross-bar C is fixed very firmly between the posts and held there by means of wedges, as shown in the drawing.

EDITOR'S NOTE. — Figure 6 was the cover illustration in the December, 1931, HANDICRAFTER.



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