The occupational therapist has many other problems besides those of presenting or applying a prescribed treatment to those who are ill, using various well known crafts which have been adapted to the need. Very often he or she must modify the craft to meet the immediate need. When the patient's condition demands it, even new work and unique technical processes, which will make the employment of the unusual case possible, must be evolved.

The conditions to be met in treating mental and nervous patients as has been inferred by many other authorities, does vary largely in some aspects from those found in hospitals of a different type. One of these problems, that may not be met so often or in the same degree in other hospitals, is what may be called a coordination defect. This coordination defect, which some patients exhibit to a surprisingly marked degree, is not a handicap in the generally accepted usage of this term, even though it does seriously handicap the patient's ability to perform many of even the simplest tasks. The outstanding characteristics are, ability to understand processes involved, willingness and interest coupled even with a keen desire to do a given task and a more or less marked inability to perform certain or all of the essential motions.

Many patients feel depressed over the fact that they need treatment in a hospital. If unsuccessful attempts to employ the patient at tasks impossible for him only demonstrate to the patient the extent of his impaired coordination, this will aggravate his depressed condition. It is therefore important that the
it between the thumb and the fingers just cut the burr or sharp edge from each hole. The center of the disc is now cut out leaving the two lugs remain and the reed is completed. Now cut and turn two discs of wood as shown in the drawings marked B in plate 1. These two discs form the top and bottom of the loom. Next cut two pieces of No. 22 gauge galvanized iron 7\(\frac{1}{2}\) by 10\(\frac{1}{4}\) inch as shown in drawing C plate 1. File all four edges straight and round off so that no sharp burr remains to scratch the hands.

Across the 7\(\frac{1}{2}\) inch sides of these two pieces of metal drill holes large enough to receive the shanks of flat head sprigs which measure \(\frac{1}{2}\) or \(\frac{3}{8}\) inch in length. Space these holes as shown in the drawing, placing the centers upon a line just \(\frac{1}{2}\) inch in from the edge. Now bend the two pieces of metal so that they fit the discs perfectly. If the equipment of a sheet metal worker is available, set the rollers and pass the pieces of metal through these until they have the desired arc. Not having this con-
venience, shape over a large piece of pipe bending with the hands and finishing to the desired arc with the aid of a mallet. Lack­
ning a pipe of fairly large diameter, the instrument which tradition­ally has so many uses, the rolling pin, may be pressed into service.

The parts of the loom are now ready to assemble. Place one of the pieces of metal upon a disc pressing it up tight against the flange which was turned on the disc to protect the warp from the metal edge and nail, using flat head sprigs. Place the other metal side on the opposite side of the disc adjusting so that the intervening space on each side is about \( \frac{3}{8} \) inch and nail. Next, slide the circular reed into place fitting the lugs into the slide spaces reserved for them between the two metal sides of the loom. Now fit the other disc in place between the metal sides and nail and finally place eight screw eyes in the face of this disc, spacing them about a two inch circle as shown in drawing \( DD \), plate 1. Use screw eyes with a \( \frac{3}{8} \)-inch shank and \( \frac{1}{2} \)-inch eye, screwing these into the disc until the eye touches the wood. The circular bag loom is now ready to use.

To set up the loom proceed as follows: Cut four warp threads each 4 yards long. Each of these threads is long enough to go five times across the loom from one screw eye about the body of the loom to the opposite screw eye. This gives the required number of warp threads for the loom. Take one of these threads and tie it to a screw eye, thread it through the hole in the reed directly beneath the screw eye; pass the thread around the bot­
tom of the loom, through the hole in the reed exactly opposite and then pass the thread through the corresponding screw eye. Pull the thread taut and proceed as just described passing first through the next hole on that side of the reed using the hole which is diagonally opposite it on the other side of the reed. The thread passes around through the screw eye and continues about the loom until five warp threads have been laid (see the "arrows" drawings \( D \) and \( DD \), plate 1). Now adjust until all are taut, tying to the screw eye finally. Then take another 4 yards warp thread and tie to the next screw eye and proceed as just described, continuing thus until the circular reed of the loom contains forty
threads. Now push the reed all the way to the bottom of the loom, the end opposite that containing the screw eyes, and note that the warp threads cross each other at the center of the bottom, radiating to points on its circumference being equally spaced by the reed. The loom is now warped and ready for weaving.

Just a word as to the type of thread which has been found most suitable as warp and woof for weaving on this loom. Any material may be used but it is essential that the warp threads be heavy and of a hard twist, while the woof threads should be a little lighter in weight and of a softer twist. While silk and wool may be used for woof threads it is doubtful if wool could be procured twisted hard enough to make a suitable warp thread. It would seem wisest that the first bags should be made entirely of mercerized cotton. A cable thread just small enough to pass freely through the holes in the reed is most suitable for warp. A medium soft twist two-ply mercerized cotton thread makes very good woof strands. The experience gained in making a bag of mercerized cotton will aid the worker in selecting suitable thread of other materials.

Having filled one of the shuttles (see drawing $E$, plate 1) with woof thread of a suitable color, pass the end of the thread under
and around the radiating warp threads at the point where they cross and tie tightly. Now pass the shuttle over, under and around four warp threads, pulling the woof thread up close to the center. Continue thus making stitches with the shuttle around groups of four threads as just described and as shown in drawing A, plate 2. When a circle about 1 inch in diameter has been woven, divide the groups of warp threads making the stitches about groups of two threads each. As soon as the weaving is 2 inches in diameter divide the groups and make the stitches around single warp threads. The weaving continues thus working each row of stitches as close as possible to the preceding row until the bottom of loom is covered. Now move the reed up about 2 inches from the bottom of the loom and continue weaving as before. As the weaving continues and builds up the side of the loom it may be packed closely with the aid of the beater or reed. This is done by pulling the reed down firmly against the weaving after each ¼ inch of woof thread has been placed.

When a new shuttle of woof thread is to be added tie it to the old thread just as close to the last warp thread as possible. The weaving continues as above, moving the reed up as needed and packing the weaving together as described, until the bag is the desired depth. An extra ½ or ¾ inch should be woven to turn in at the top when the bag is lined. The completed bag is removed from the loom thus: Cut the group of threads passing through one screw eye at the eye. Unthread these from the reed and tie each pair of threads together just above the weaving. Now cut the next group of threads and proceed as above until the entire forty warp threads have been tied, when the bag may be easily slipped off the loom. As the bag is woven on the loom wrong side out to protect it, turn, and it is ready to receive the tassel and lining. As all occupational therapists are familiar with the making of cords, tassels and the lining and finishing of bags, no space will be given to this. The above description covers the technic of weaving the bag with the plain stitch using a solid color. When the bag is turned right side out the worker sees for the first time the parallel ridges which are one of the most characteristic decorative features of circular woven bags.
If bags of solid color only could be made on the circular bag loom the technic would still have a definite therapeutic value, but another attribute is the ease with which contrasting bands of color can be introduced into the weaving. All that is necessary when it is desired to change to another color, is to cut the woof thread then in use, wind a shuttle with the new color and tie it to the old woof thread quite close to the last warp thread encircled. The weaving now proceeds with the new color until it is desired to change to another or return to the original color of woof thread. It will be noted that all knots appear only on the wrong side of the bag. It is clearly seen that the ease with which color may be introduced into the woof of the fabric, enhances both the decorative and economic value of the product; the fact that this may be done without any change in the technic gives the patient progressive therapeutic satisfaction at a time when his coördination level may seem almost stationary. When either the patient’s mental state or coördination level changes sufficiently to require that the therapeutic occupational treatment employ a technic a little more exacting, this may be met by the introduction of more difficult stitches. A number of these stitches are explained in the following paragraph.

As this technic is new it is not thought that the following comprises all the stitches which are possible to use upon this loom. These have been developed by the writer during his experience with the loom and are presented with the hope that others who construct circular bag looms will make an effort to enrich the technic by developing new stitches. The plain stitch has already been explained (see drawing B, plate 2). The first development from this stitch is what may be called the plain reversed stitch. This stitch is made by taking the shuttle first under the warp thread, around, over and under it again before passing on to the next stitch, as shown by drawing C, plate 2. The next development is the plain stitch alternating in some regular order with the plain reversed stitch. These two stitches allow of much variety in actual usage, but only a few examples need be suggested here. A pattern may use a band of four rows of plain stitches of one color, then a band of three rows of another color made of alter-
nating *single plain* and *single plain reversed stitches*. This could be followed by two rows of *plain* and this in turn by four or five rows of alternating *single plain* and *single plain reversed stitches*. It is easily seen how combinations of colored bands of various widths can be made as suggested above until the border part of the bag has attained sufficient proportions. A more decorative use of the alternating *plain* and *plain reversed* stitches may be developed thus: do four rows of single alternating stitches and when the fourth row is completed repeat the last made type of stitch.

**Plate 3. Using the Plain Cross Stitch—Weaving a Bag on the Circular Bag Loom**
about the next warp thread and continue the alternating stitches from this point four more rows. The stitch that is duplicated advances the order of plain space and ridge (which is the effect produced by the alternating stitches) just one space giving an entirely new pattern effect. When the fourth row of this second group is completed the last type of stitch made can be repeated again advancing the next band of alternating stitches. It is clearly seen that this also allows of further modifications with resulting new effects. Further modifications may be made in the alternating stitches by using each type of stitch in groups thus: two plain stitches and four plain reversed stitches repeating this combination. Modifications of this form of grouping of stitches allows of much variety.

Lastly will be considered what may be styled fancy stitches, suggesting two types and then leaving further development of stitches to be discovered by the interested reader. The first is the plain cross stitch made thus; tie two contrasting colors one above the other to the same warp thread, take the uppermost thread and make a plain stitch about the next warp thread; Now cross the lower thread up over this one and make a plain stitch above it about the same warp thread. Continue the use of these two threads as just described, always using the uppermost thread first about the new warp thread (see drawing D plate 2). The compound cross stitch is a development upon the plain and is made with three threads thus; tie three contrasting threads one above the other to the same warp thread, take the uppermost thread and make a plain stitch about the next warp thread, next take the middle thread and make a plain stitch above this one and finally take the lower thread up over both of the other threads and make a plain stitch above them about the same warp thread. Continue the use of these three threads in the order and manner just described, as shown in plate 2, drawing E. The second type of fancy stitch is called the twisting stitch (see drawing "F" plate 2). It is made by tying two threads one above the other to the initial warp strand, twisting these together one or two revolutions, separating, and making a plain stitch with each above the next warp strand. Continue thus, making the stitches with the two threads one above the other in some regular order; that is, the threads may keep their original position when making
the stitches or they may be interchanged each time. All fancy stitches may also be made using the plain reversed stitch which alters the effect somewhat.

The circular bag loom is easily constructed, simple to use and has nothing to get out of order. The stitches are progressive in variety and when used by an instructor having a good sense of color and a desire to experiment the result will be a fascinating textile. This type of weaving gives a therapeutically satisfactory employment for coördination defect cases especially, and many others requiring a very simple technic.