

## FLAT FAN CONSTRUCTION

BY *John  
Ross*

Flat fan construction, over the years, has developed many different types of construction techniques. Any fan maker develops his own techniques and it is the sharing of these techniques that allow creativity in fan-making. An interesting type of fan has evolved, using a special combination of techniques; the basic construction is commonly seen on the feathers of Peyote style loose fans and scalp feather decorations.

### CONSTRUCTION

Construction of this type of fan is fairly simple, but planning is necessary by carefully selecting the tail feathers to be used, usually from the same tail.

The number of feathers to be used depends upon the size and shape of the feathers. Five to seven feathers are common (always use an odd number of feathers for best results).

- 1 Individually prepare each feather. To the base of each feather small hackles, trim feathers, felt spots, etc., may be added. (FIG. 1, Photos 3, 4, 5.)
- 2 Each quill should be wrapped with thin, white buckskin (Fig. 1).
- 3 Thread wrapping and/or silver bands may be added (Photos, 2, 3, 4).

### THE HANDLE

The handle construction and the fitting of the feathers into the handle is usually the most difficult job. I use a carved balsa wood handle and set the feathers with plastic wood. The upper part of the handle must be proportioned so that the decorated quills are exposed (Fig. 4, PHOTO 3). The width of the top part of the handle should be just slightly wider than the feathers on each side.

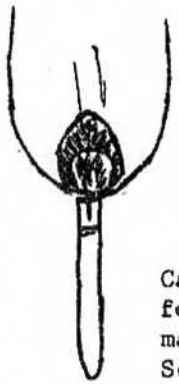


FIG.1

Carefully prepare each feather as if you were making a loose fan. Scotch tape is excellent for adding trim feathers. Cover the quill with thin, white buckskin and decorate with thread, silver bands, etc.



FIG.2

The Center Feather is often highly decorated.

Threadwork wrapping and silver bands may be added.

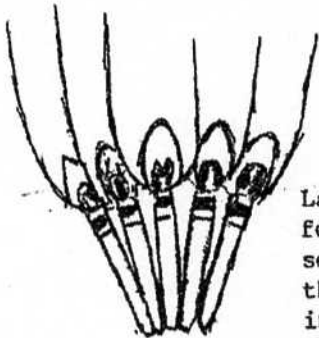


FIG.3

Lay out the prepared feathers. They may be sewed together at the bottom to insure that they lay properly, making sure they are evenly spaced.

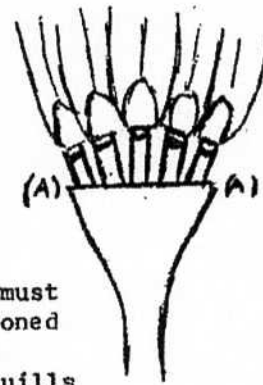


FIG.4

The handle must be proportioned so that the decorated quills are exposed. The lower portion may be extended to keep proper proportions. Top dimension should be just a hair wider than the feathers at point A-A.

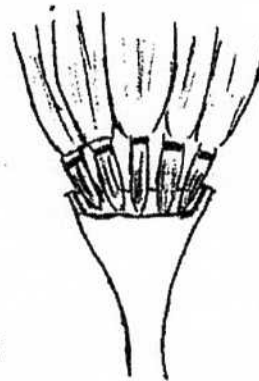
FIG.5

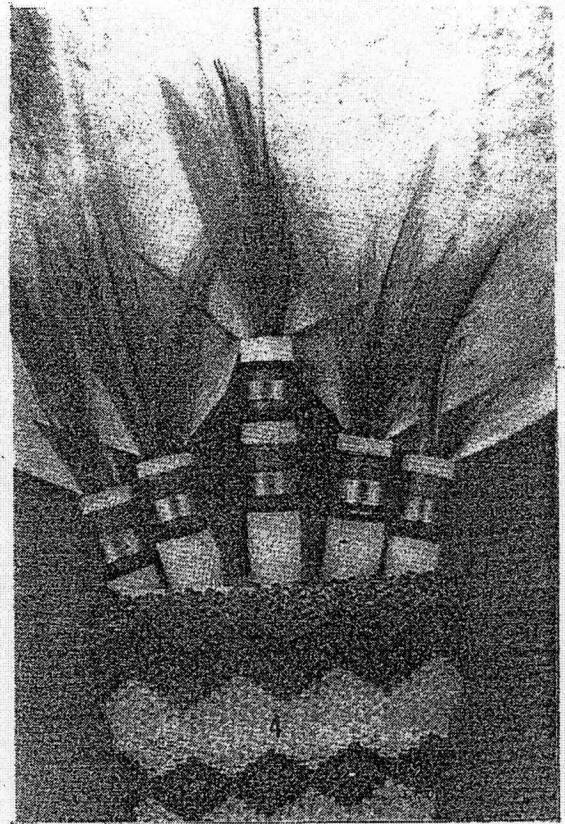
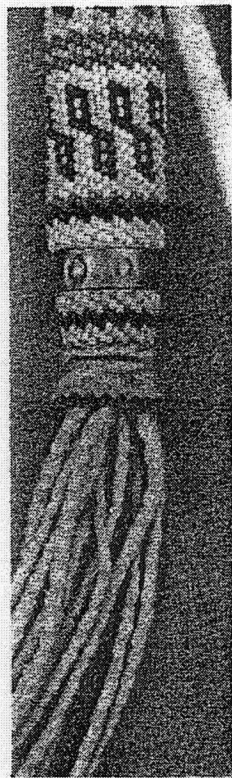
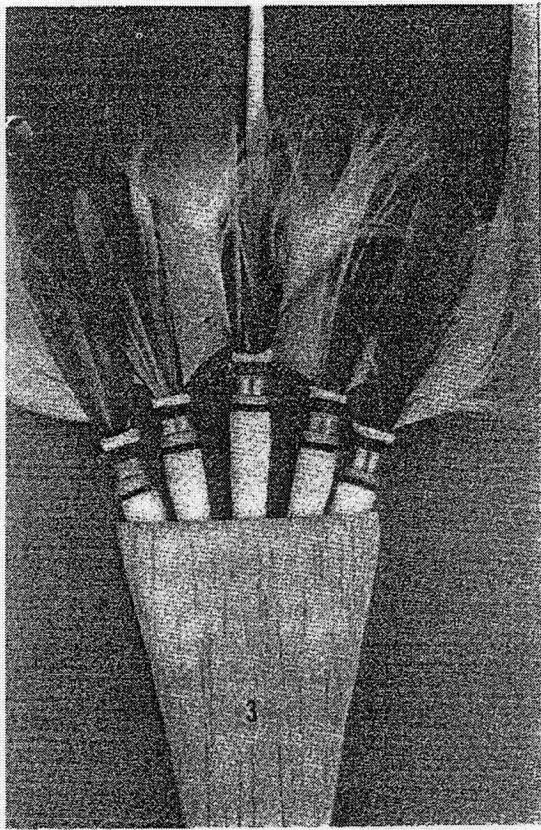


Notch the back of the handle (shaded area) to accommodate the feather bases.

FIG.6

Place the feathers into the notch and secure firmly with plastic wood. Buckskin can then be used to cover the entire handle including the notched portion.





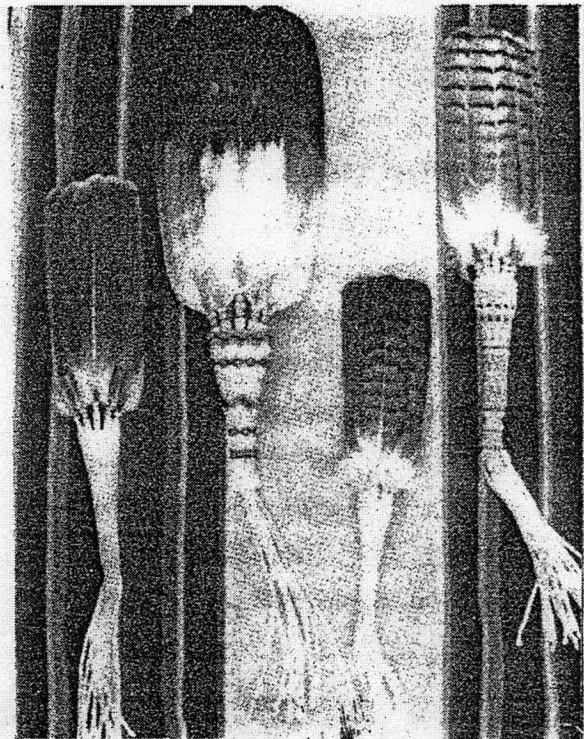
photos  
by  
*Dick Madaus*

The lower portion of the handle may be extended to keep proper proportions with the height of the feathers (PHOTO 5).

The underside of the handle should be notched so the feathers will fit into the handle (Fig. 5 & 6).

The feathers are now ready to set into the handle. The feathers may be set individually using plastic wood or laced together at their bases (Fig. 3), applying plastic wood to hold them firmly in the handle.

With a little planning and care in construction, the results should be interesting and attractive. Good taste in color selections for beadwork and feathework will give pleasing results.



# Flat Fan Construction

by Jan Hackett

Fans have been around almost as long as man. One of the earliest fans documented came from Egypt around 3200 BC. Through out history fans have been functional and an accessory. One of the earliest fans documented in the western hemisphere was an Aztec fan dated around 1500 AD. Native Americans have used fans for various purposes through out history including religion and dance.

Most modern day dancers carry a fan of some sort and flat fans are common place in Straight, Grass, most Women's styles and occasionally Northern Traditional. The purpose of the modern dance fan is two fold help to keep dancers cool and accessorize the dance outfit.

For the sake of discussion we will break the fan down into 4 basic parts:

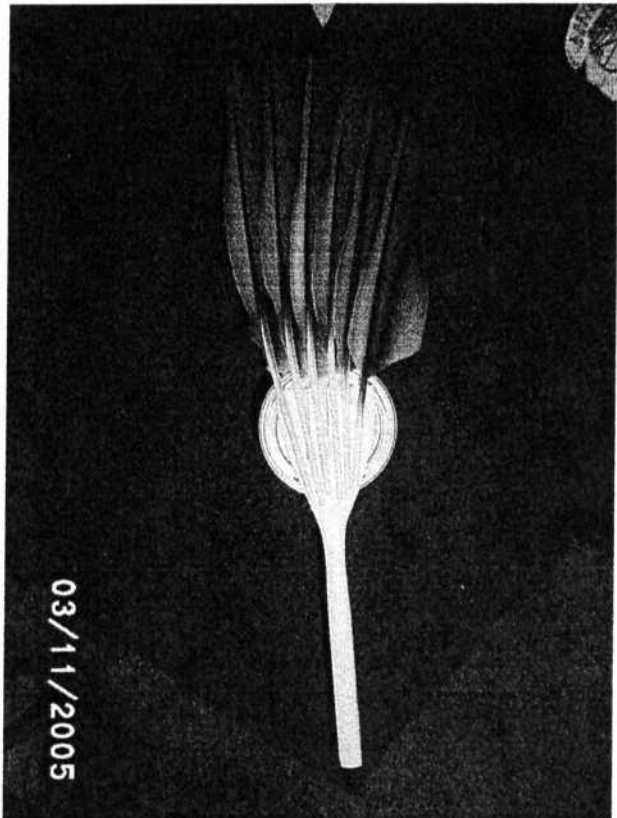
1. Handle
2. Feathers & accent feathers
3. Thread wrapped skewer
4. Leather covering & rolled fringe

In order to get started here is a list of what you will need:

- Handle
- Feathers
- Accent feathers
- Automotive "bondo"
- Wooden skewers
- Rod wrapping thread
- Various Hand tools

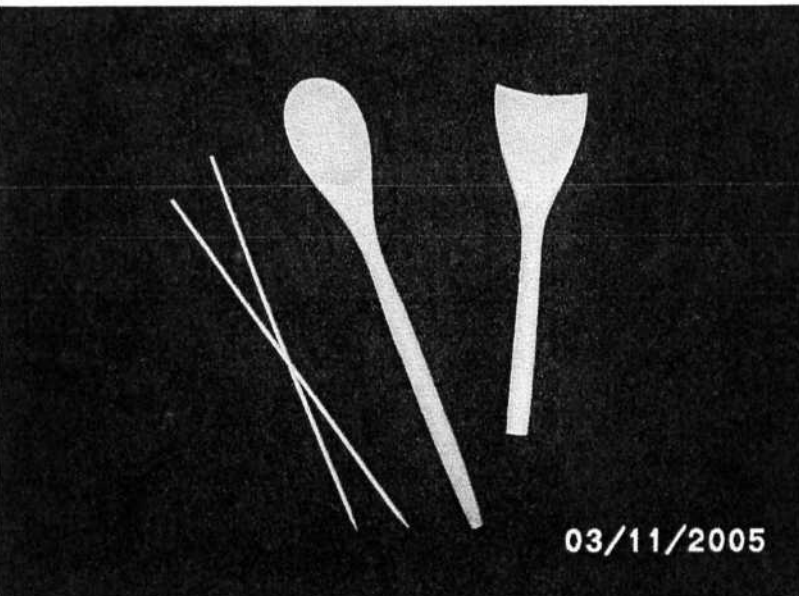
Handles will vary in width and length and are influenced by several factors:

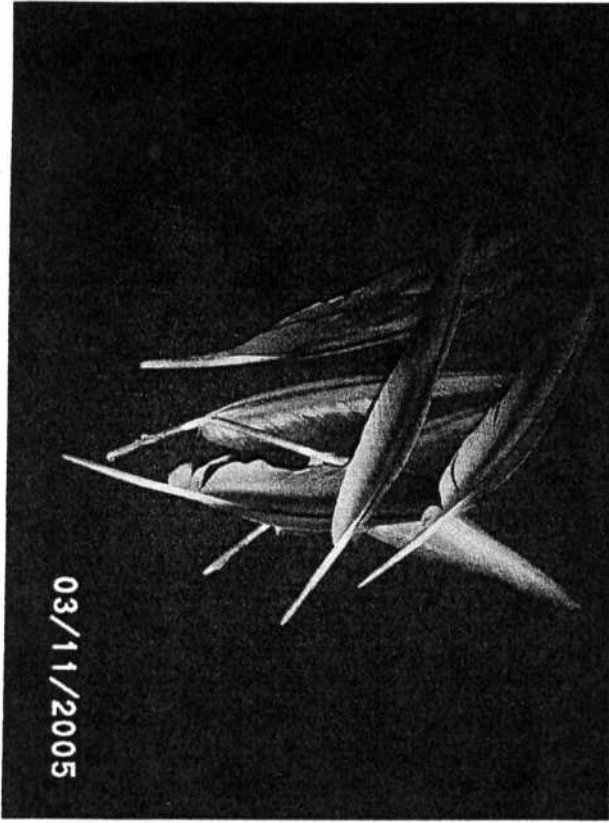
1. Number of feathers being used
2. Type of feathers being used
3. Is it for a man or woman



Feathers should be sorted, matched (lefts vs. rights) and arranged in an attractive and pleasing pattern. Make sure to trim away the fluffy oily part of the feather at the bottom and trim the stem to length after test fitting your handle. Good feathers to use for fans are:

- Macaw
- Hand painted imitations
- Birds that are legally hunted





Feathers can be found in various places and here are a few:

- Rick Bowman  
<http://www.eaglenation.com>
- Ebay  
<http://www.ebay.com>
- Noc Bay  
<http://www.nocbay.com>
- Crazy Crow  
<http://www.crazycrow.com>
- Friends that hunt  
<http://www.crazyfriendsiknowthathunt.com>

Handles can found or acquired in several different places:

- Purchase pre-cut handles
- Make them yourself from scrap wood
- Wooden spoons/spatulas

Regardless of what type you use there are several things that need to be done in order to use them for a fan handle:

- Cut off the rounded end of the spoon or spatula
- Cut the handle to the desired length
- Reduce diameter of handle to accept rolled fringe

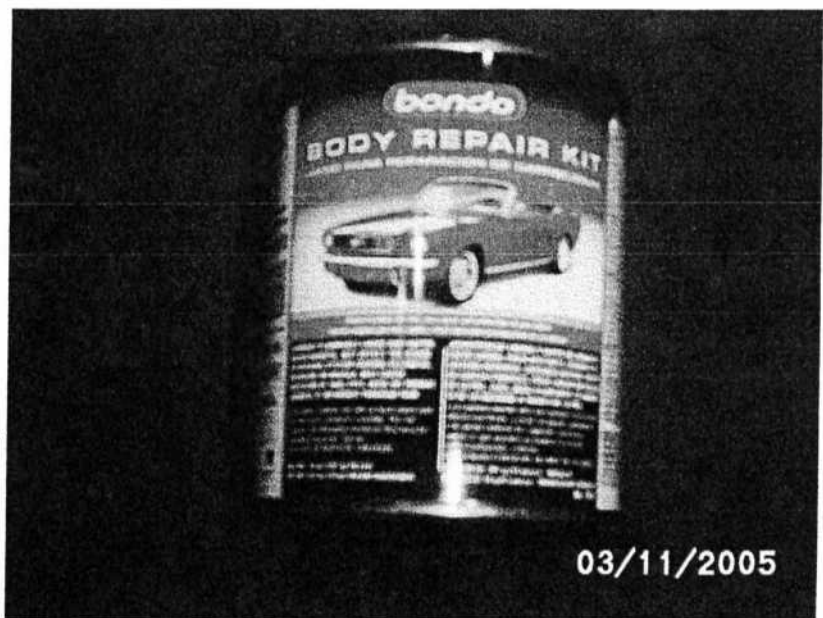
Select the feathers you wish to use for your fan and arrange them on the table in a pattern that is aesthetically pleasing. Now trim the “oily” fluffy barbs of the feather from the base along with any excess stem. Using a hot glue gun attach the feathers one at a time to the handle. Pay careful attention to the order and spacing when attaching them. Once the feathers are attached mix up a small batch of automotive “bondo” and apply directly over the stems paying close attention not to get any on the feathers. A special note here is follow the directions on the can carefully and only mix a small amount at a time.

Accessory feathers located at the base of the fan are the next item to be attached and your imagination is the only limiting factor. There are many types and combinations of feathers that can be used and include:

- Pheasant
- Macaw
- Saddle hackles
- Guinea
- Spade hackles
- Marabou
- Others?

If you are not sure of the look you want experiment by taping feathers together in different orders and color combinations holding them against the base of the fan until you find what you are looking for. Once you are satisfied with your arrangement hot glue them on top of the fan feathers and bondo them in place. Don't forget it's easier to work with multiple thin coats of bondo as opposed to one heavy one.

The wooden skewer with metal “button” and white fluff is an unusual feature and will certainly draw attention to your fan. The wooden skewer is topped with a fluff and covered with rod wrapping thread.



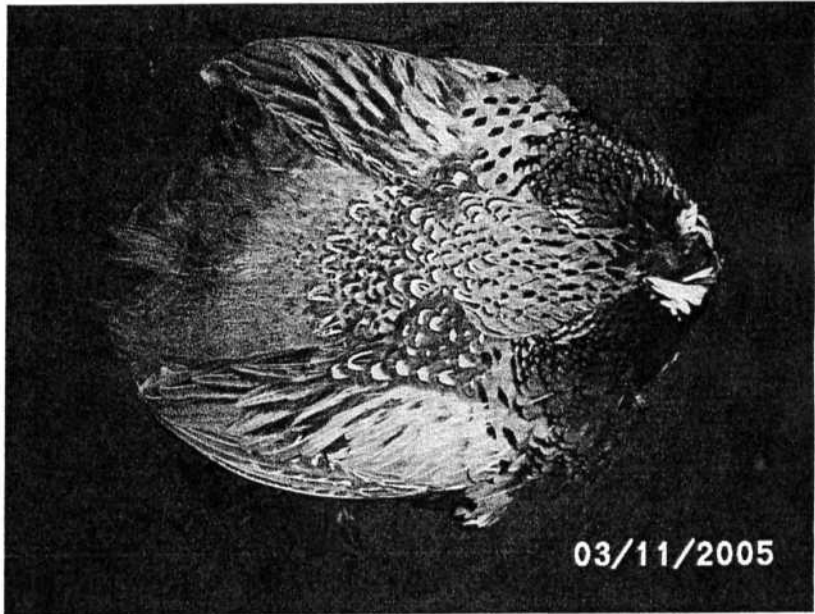
# Flat Fan Construction

The small metal button located close to the top of the skewer actually hides the area where the fluff is attached. The skewer is covered with rod wrapping thread using the same techniques when building a fishing rod. There are many colors and sizes of thread available from Gudebrod other manufactures. Once you choose your color and size make sure you use one that does not require color preserver. You can find a complete listing and description of the various threads web at:

<http://gudebrod.com>

If you are one of those who prefer to look, feel and touch something before you buy locate a fly shop or specialty fishing store in your area.

Once you have all the feathers, accessory feathers, and wooden skewer attached it's time to fill in all the cracks and crevices with bondo and smooth it out. The sanding and filing will create a lot of dust so keep your feathers up wind as much as possible. At this point your fan is just about ready to use.



The next to last step is to cover the handle with a soft leather and attach the rolled fringe made from the same leather. Cut the leather slightly larger than the largest part of the handle. Starting at the top, trim the leather to an exact fit sewing the two ends together as you work down the handle. Depending on the thickness of leather it may be necessary to pre-punch the holes in order to sew the leather. Remember don't punch the holes to far ahead as you will need to be constantly trimming the leather to get a snug fit. The other trick is to keep the seam running straight and this is accomplished by removing equal amounts of leather from both sides of the seam as you work towards the bottom. You may think it easier to start at the bottom and work your way towards the top but I have was not successful at this when I tried it. When you are about an inch from finishing the seam lift it out of the way and attach the rolled fringe at this time. The reason for this is to keep the fringe out of the way during the sewing and cutting process while covering the handle. One of the easiest ways I have found to create the fringe is to take one end between your thumb and forefinger of your left and the other end in the same fashion in your right hand and twist in the opposite directions. Once the piece is twisted

tightly "snap" the middle across an object like closed scissors and watch the leather roll back on itself. Once the fringe is created hot glue it in place to the reduced portion of the handle making sure that it does not stick up higher than the larger diameter just above it. Once all the fringe is in place roll the leather down and finish sewing it over the fringe and rest of the handle tying the thread off securely when finished.

At this point the fan is ready for beading and the dance floor. If you decide to dance the fan prior to beading I recommend wrapping the handle with an hankie or cloth to protect the leather and stitching until the beading is finished.

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# MODERN



## FLAT FANS

BY TY STEWART

Many old photos will reveal the fact that fans were in wide use by dancers and non-dancers. Both loose and flat fans were used for various purposes, some religious, as well as for dancing. Dancers today in all areas of the country will usually carry some sort of fan; even some singers can be seen holding a fan at the drum.

The purpose of this article is to acquaint you with some proven methods of flat fan construction used by both Indian and non-Indian craftsmen. We should note that each craftsman has his own techniques developed over long periods of time.

It would seem that the Southern Plains tribes set a precedence on style for present day fans from examples shown in photos 1 and 2.

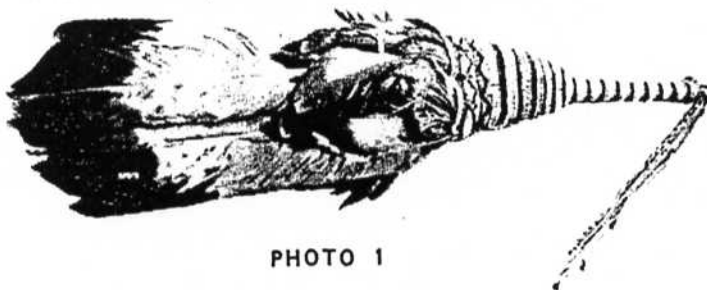


PHOTO 1

Photo 1 is identified as Kiowa and photo 2 is believed to be Cheyenne-Arapahoe. Note the exaggerated long handles on the two fans which is very reminiscent of a head and tail fan which was prominent about 1900 and are visible in photos of the Oto-Missouria, Osage, Kaw, Iowa, Pawnee, and Sauk & Fox. Photos 3 and 4 show fans of Osage origin, but have much shorter handles. Photo 4 is very atypical of today's fan in that the handle is out of proportion to the rest of the fan. It should be noted that most all women's fans are made with narrower handles than men's fans which are usually of

seven to twelve feathers and needing wider handles. The deciding factor as to a man's or a woman's fan is the type and amount of feathers used in the fans. The steps in construction are the same, but a woman's fan handle is usually much narrower (photo 5).

### CONSTRUCTION

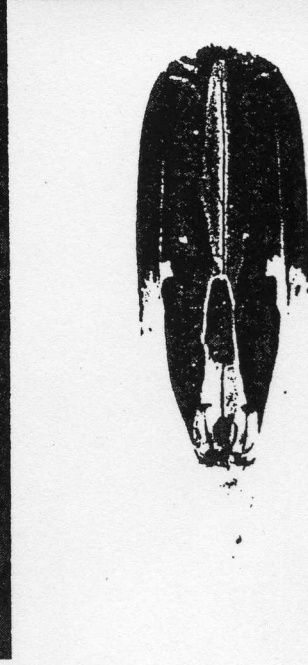
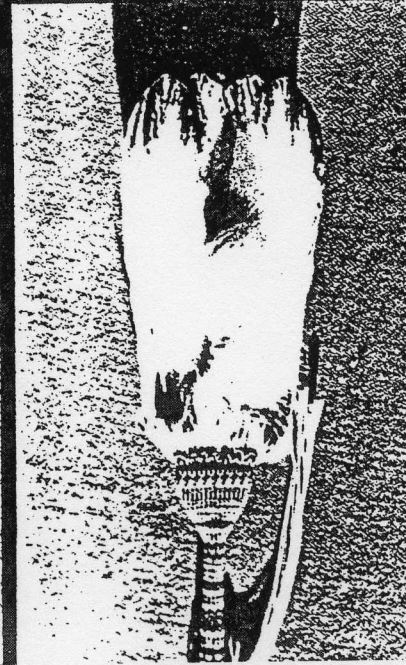
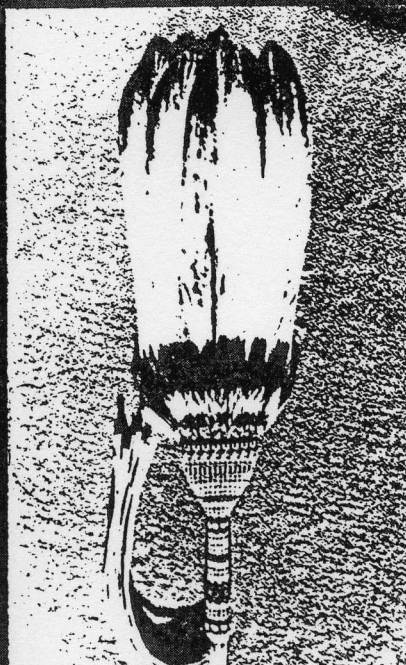
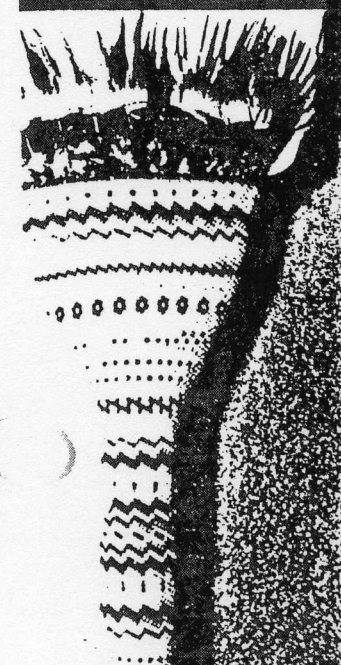
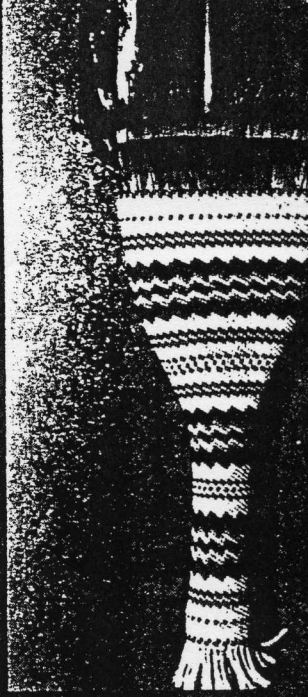
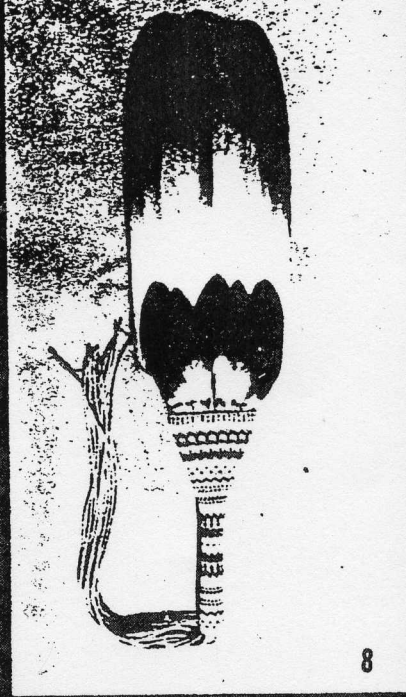
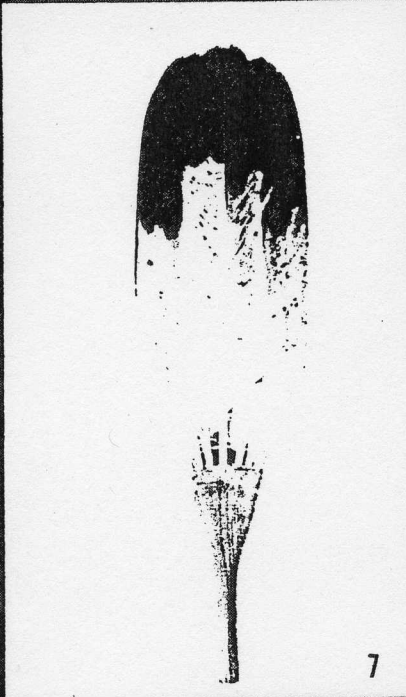
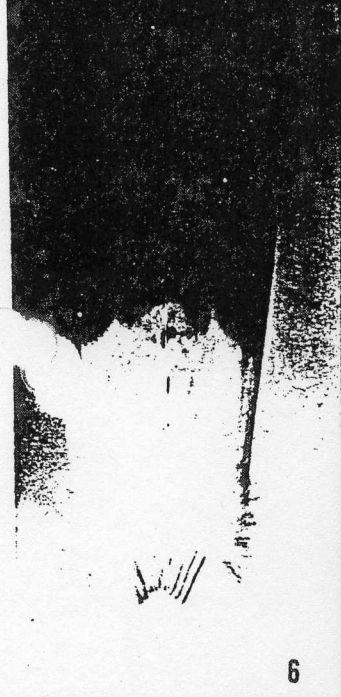
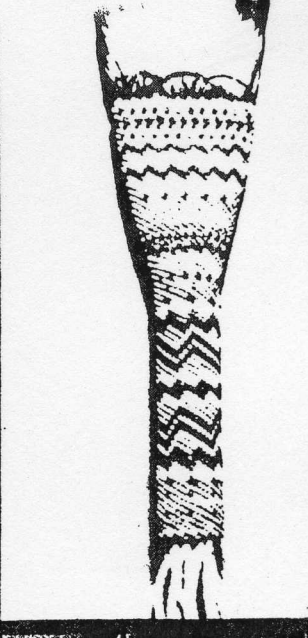
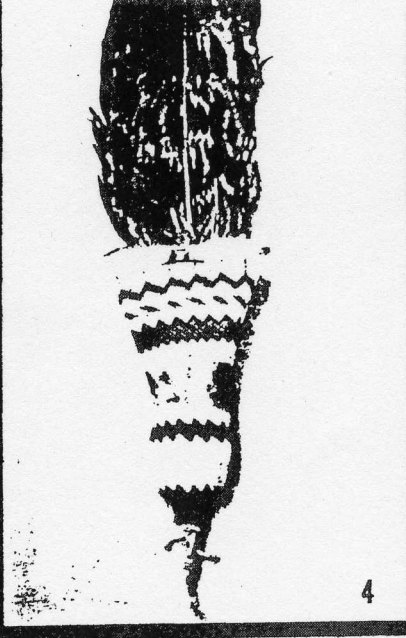
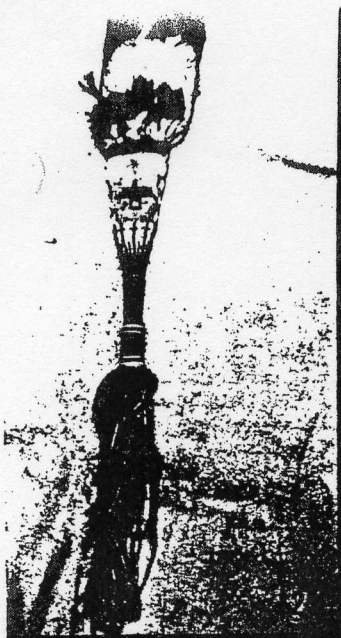
I like to think of fan construction in six parts: (1) the cutting out of the handle, (2) shaping the handle and setting the feathers, (3) the placement of decorative feathers, (4) adding the buckskin covering, (5) the cutting and twisting of fringe, and (6) the beadwork. Each of the first five steps is equal in importance to the sixth step in order to have a fine finished product.

**Handle:** As previously mentioned, the size of the handle is determined by the amount of feathers and what kind are being used in the fan. As an example, 12 eagle feathers make a wider handle than 12 hawk feathers, and 12 waterbird feathers fit very closely together and the handle will have a very narrow taper (photo 5). When hawk or eagle feathers are used, a good fan will usually have a minimum of five feathers, and looks best when seven or more feathers are used.

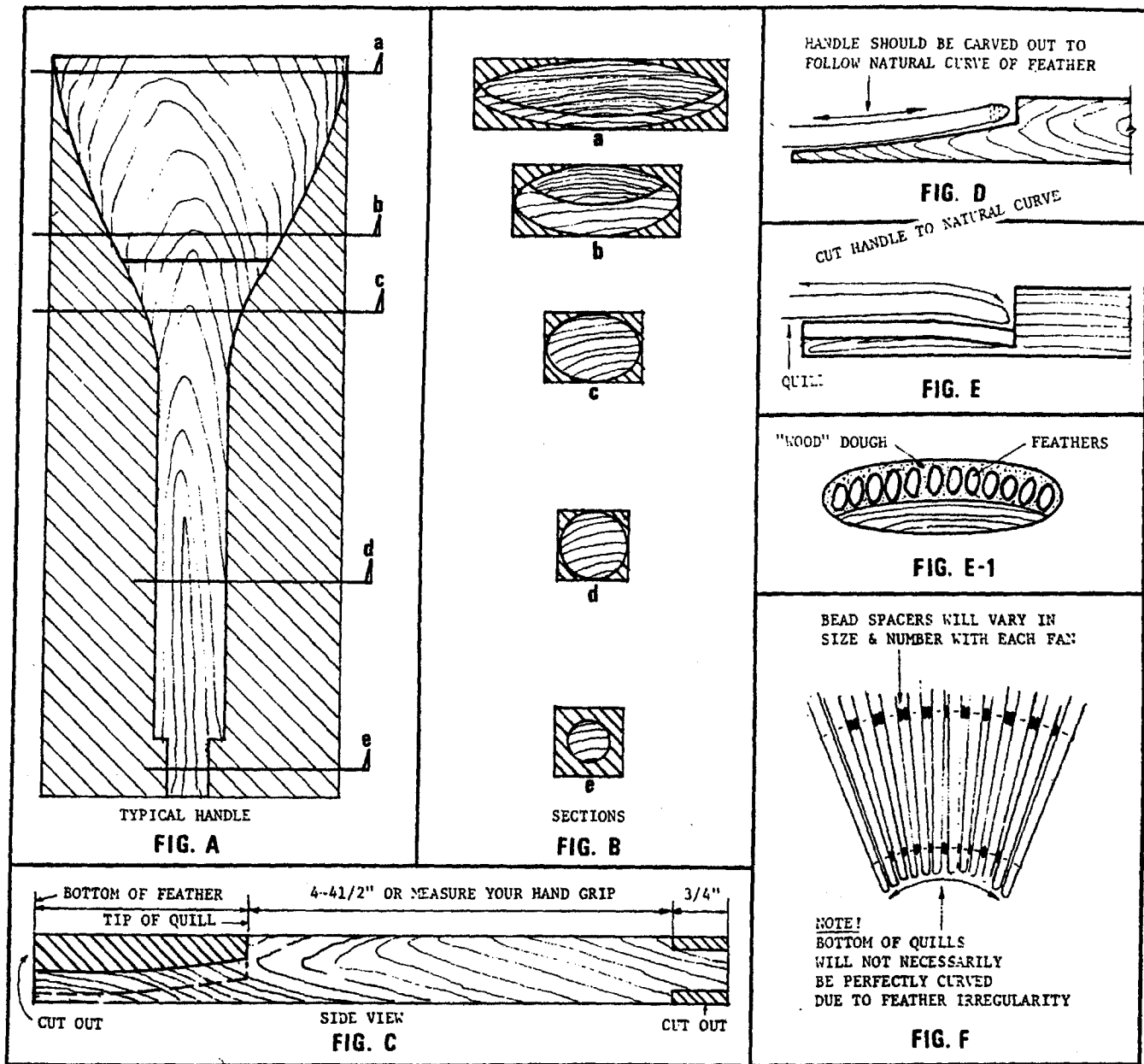
Decide how many feathers are to be used, then lay them out beginning with the outside feathers first. A full tail will have 12 feathers - 6 right and 6 left. Start at the center feather and call it No. 1 and work to the outside to No. 6. Fans can be made using one or both center feathers.

After arranging your feathers over a piece of plain paper, hold your hand gently down on them so as not to disturb the arrangement and trace the outline from base of feather to tip of quill. Using this as a guideline, draw the desired shape of the handle and leave an excess of 1/8" on either side. Transfer this shape to a piece of soft pine cut from 1" x 3", or 1" x 4". The length of the grip of the handle should be approximately 4", or measure your hand when

PHOTOS COURTESY OF: 1. Chicago Field Museum, 2. Lowie Museum of Anthropology, Univ of Calif, Berkeley, 3. Southwest Museum, 4. Southwest Museum, 5. 6. 7. Author, 8. Pat Tearney, 9. Hans Duddenhaus (beaded by Ron Sanner), 10. 11. 12. Hans Duddenhaus, 13. Author.







clenched as if holding the fan. Don't make the taper too severe or it will cause you to add too many rows of beads when doing the beadwork (Fig A). Round off the handle with a carving knife to the separate diameters shown in Fig B by using sandpaper to achieve the desired finish. Two methods are shown for cutting the shape into the handle. Both achieve the desired results (Figs D & E).

**Shaping the Handle & Setting the Feathers:**  
The feathers should be arranged as closely as possible to their natural setting (photo #). I will offer two methods of doing so:

Method 1: Using 12/0 or 13/0 beads as spacers, the feathers are sewn together with heavy carpet thread (Fig F). This allows easy handling of the feathers when applying wood dough, and is comparable to

the feathers' natural separation when intact. This method should be used with the handle shown in Fig A. Notice the concave shape when the solid part of the handle is lying down. The feathers are placed face down, then pinned down with straight pins. At this time, turn fan around and check the feathers for proper arrangement. Wood dough is placed on top and shaped to conform with the handle. Allow for overnight drying. When dry, sand smooth to conform with shapes in Fig B. Method 2: Cut out the handle as previously explained, except that the recess in the handle is convex in shape (Fig E), and the feathers are laid face up. The two outside feathers are pinned down and glued in, and allowed to dry overnight. The rest of the

feathers are pinned down and glued in place simultaneously. When glue is dry, apply wood dough to fill out handle, and repeat process mentioned previously. Photo 7 shows a seven-feather fan set in wood dough and ready to apply decorative feathers.

**The Placement of Decorative Feathers:** Decorative feathers are placed both in front and in back of the fan. For example, if making an eagle fan and you are fortunate enough to have some matched coverlets (little body feathers), these can be placed on the front of the fan and will comprise the first layer (photo 8). A layer, or layers, of colored hackles or natural pheasant can be placed next (photos 10 & 11). These feathers can be applied by laying out on masking tape or double adhesive tape, and then placing another piece of tape over them after they are all laid out. This allows easy placement of decorative feathers onto the fan where they can then be glued down. A plume can be placed on the back side with hackles, as on the front side of the fan (photo 12). Photo 13 shows decorative feathers of macaw, magpie and parrot body feathers which are set into the fan handle.

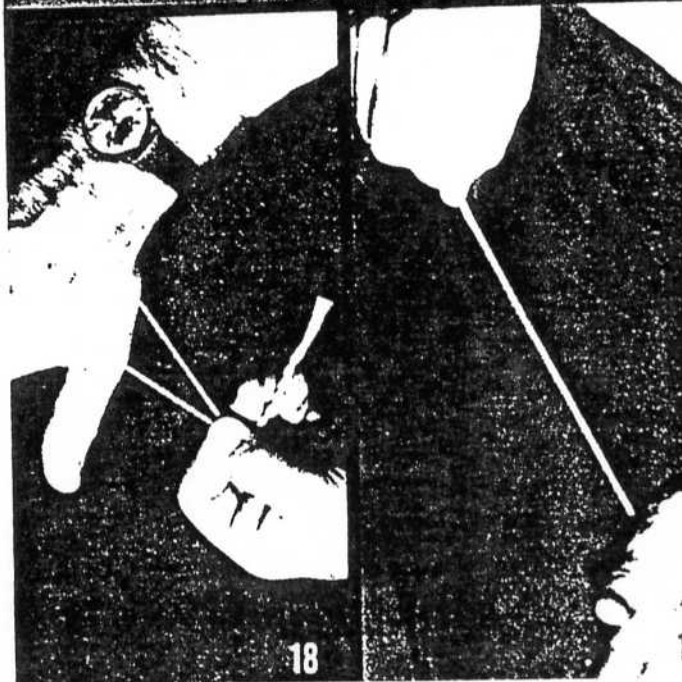
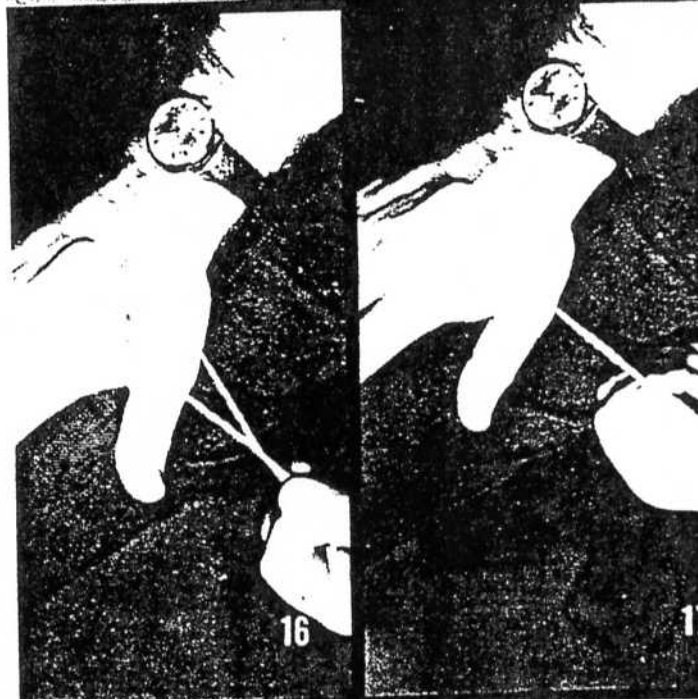
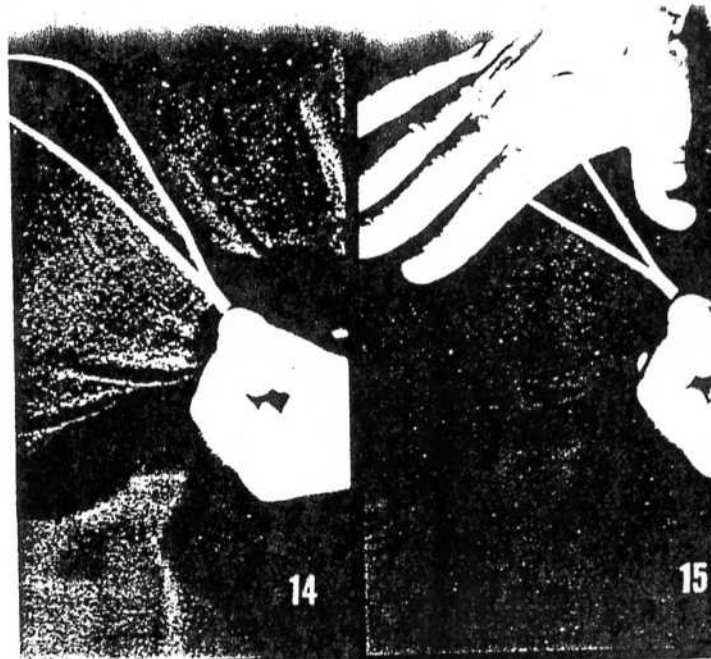
**The Buckskin Covering:** Some craftsmen will say that all that is needed is to place tape around the handle to allow the beads to be attached. I have seen finished products where the use of tape was employed, and found that the beads have a tendency to slip down. The buckskin allows the bead to form a soft pocket in the leather which holds the bead in place. Therefore, I suggest the use of a buckskin covering to avoid this problem.

The easiest method of applying this covering is to cut buckskin wide enough so there is about 1/8" gap between the ends when wrapped around the widest part of the handle, and stretch so that the ends meet. Make sure that the "long stretch" of the buckskin runs the length of the handle. Secure thread at the top and take about 3 or 4 stitches, then pull buckskin snug and cut to shape of handle (about one inch at a time). Take about 8 more stitches, then cut again. Continue cutting and stitching until completed. This method of applying buckskin covering allows you complete control to move the covering around and keeps the seam centered on the handle. Additional pieces can be added and edge beaded or fringed as in photos 9 & 10. These can be separate pieces of buckskin attached by gluing under main covering.

**The Buckskin Fringe:** The addition of buckskin fringe is usually a project for most fan makers as good fringe takes time to make. Here is one method that is used by Indians when rolling fringe that will guarantee even fringe if followed.

Pick out a spot on the buckskin hide that is most uniform in thickness and about 1/16" thick. Cut so the longest part of the fringe runs the long way of the stretch on the hide. You should have about 20 fringes, so cut a piece 6" wide x 8" long. Use tape to fasten the buckskin down on the table. With a straight edge, draw lanes about 1/4" wide. It is wise to have

(Continued on page 16)



# FLAT FANS

(Continued from page 5)

some extras. Cut strips apart with scissors, and then up the center to within 1/2" of the end (photo 9). Place the buckskin strip under the water faucet and completely saturate. Hold closed end and wring water out of fringe by running fingers down length until buckskin begins to squeak. The fringe will stretch about 30% or so. Be careful not to stretch it too thin. Photos 12 to 17 will show how to roll fringe on your knee (a board can be substituted). Photo 14 shows buckskin spread apart. Photo 15 shows how to lay palm of hand down on buckskin and roll to end of palm (photos 16 & 17). Next, twist both pieces together in direction of roll when first roll is completed and stretch as you twist. Photo 18 shows continuation of roll after placing buckskin again in position shown in photo 9. When completely rolled, roll back and forth with palm of hand until fairly dry, and pull to stretch as in photo 19. Set aside until all fringes are completed. Make sure your trousers are clean. Tie a thong around end and hang to dry for a day.

The secret of fringe is to work it by rolling until soft and pliable. To whiten, add liquid white shoe polish in small amounts and work it to avoid stiffness by running through your fingers (keep hands clean). The finished product should be limp and pliable. I usually wait until last to attach fringe, avoiding the problem of interference while beading (photo 20), but if you prefer to add it before beading, then tie it in a bundle while beading.

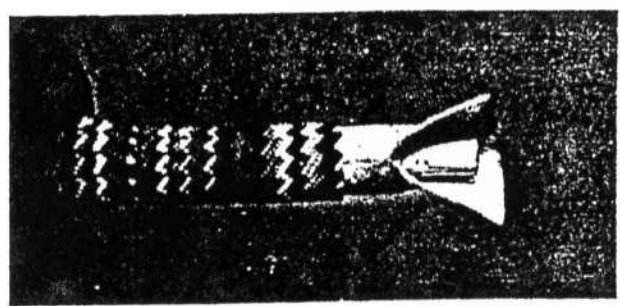


PHOTO 20

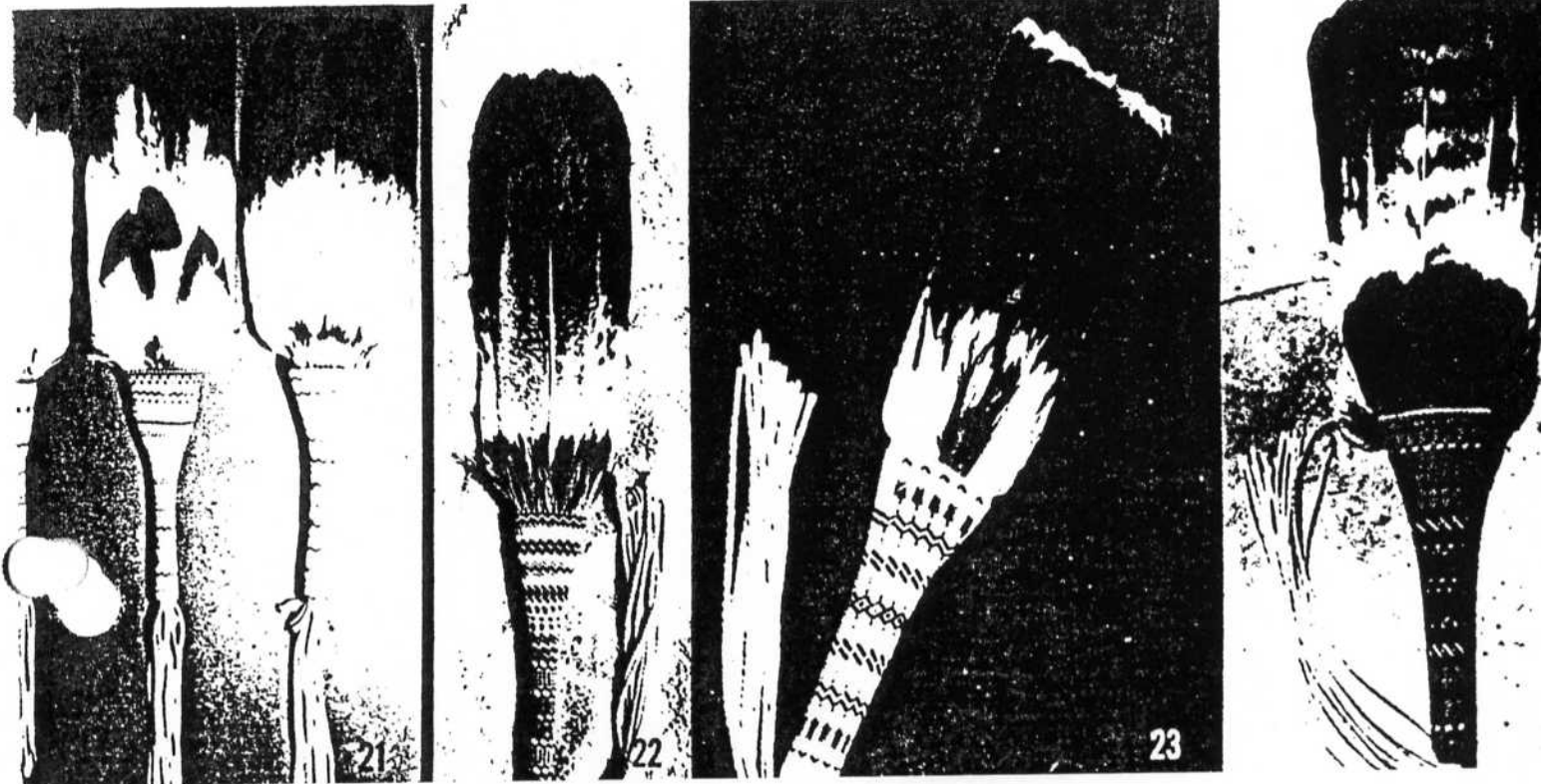
**Beadwork:** The beading technique used is usually gourd stitch or peyote style as it is sometimes called. A detailed explanation of this was described in "The Singing Wire", Vol III, No. 1, and "American Indian Crafts & Culture", Vol III, No. 9.

It is important to study good fans if attempting a project for the first time. The photos provided are some of the best examples to be found of good fan work. There are bound to be some craftsmen who use slightly different techniques, and you will develop your own if you become an enthusiastic fan maker. This article is comprised of techniques used by some of the finest craftsmen I have seen, and I would like to thank them for sharing their experience with me. They are Mr. Harry Buffalohead (Ponca), Hans Duddenhaus, Richard Past, Joe Rush (Ponca), and Ben Stone.

#### References:

Head & Tail Fans, by Norm Feder (a pamphlet)  
Past, Richard, "A Fan Construction Technique", Powwow Trails, Vol V, No. 3. ■

Photos 21 to 24 show completed fans. Photo 21 shows from left to right: Craftsman unknown, Harry Buffalohead, author. Photo 22 Chuck Johnson, and photo 23 & 24 Ben Stone.



EARL C. FENNER

Tyrone Stewart (1970) has acquainted the readers of American Indian Crafts and Culture magazine with some proven methods of flat fan construction used by both Indian and Non-Indian craftsmen. As the manufacturer of over 150 fans of all types during the past twelve years, this writer believes that some of the hints and shortcuts that he has to offer will benefit everyone who is interested in fan making.

All too often, serious students of American Indian Material Culture, when asked about details of a particular technique, be it beadwork, quillwork, or what have you, remain mute for fear that they will be giving away classified information in the form of a "trade secret". Other times they merely reply "It's an old Indian trick", which when interpreted means that it is a modern adaptation of an old method used by an Indian over thirty.

# ***A NOTE ON FLAT FAN CONSTRUCTION***

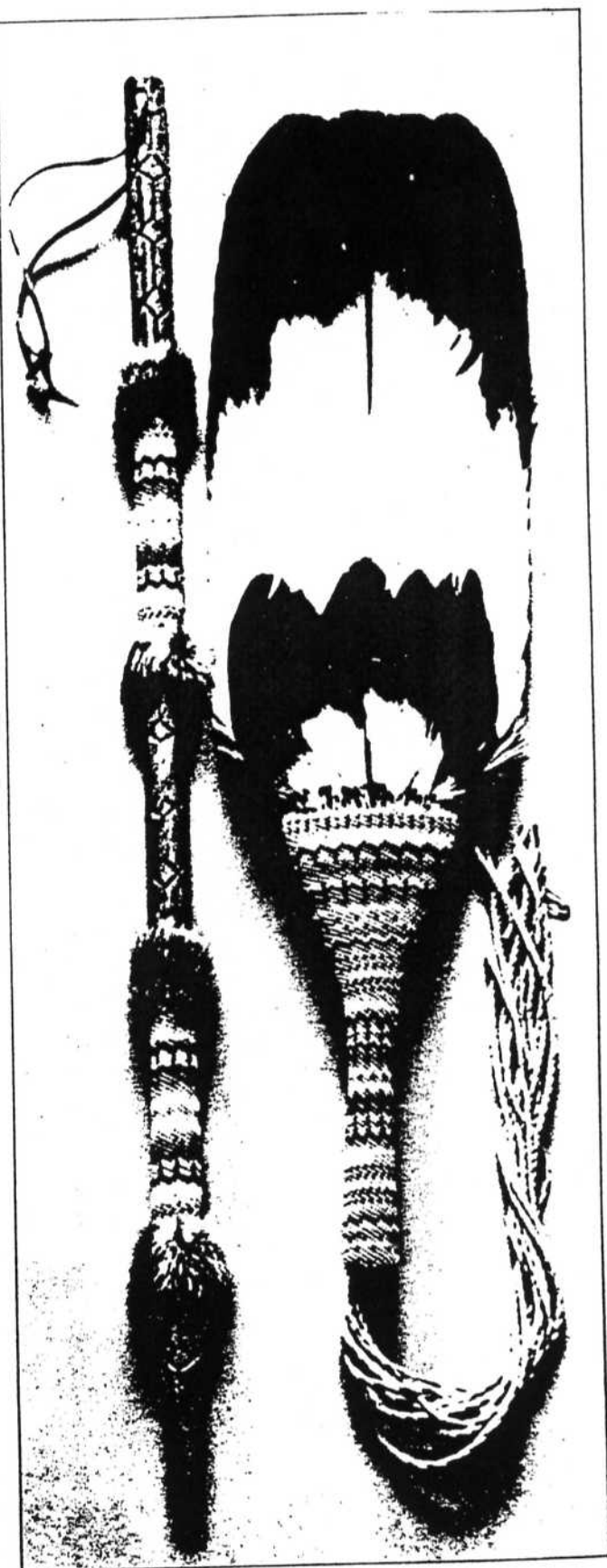


Photo by Larry Strom. Fan made by Tyrone Stewart.

There are as many methods of constructing a fan as there are fan makers. Consequently every fan maker believes his method to be the best. This writer is not saying his method is the best but it is a tried and true method that produces the best possible results with a minimum of time and effort.

#### MATERIALS REQUIRED:

Feathers - from five to twelve tail or wing feathers.  
Decorative feathers - hackle, macaw, coverlets, etc.  
Dowel rods of assorted diameters.

Auto body filler - the type that requires a cream hardener.

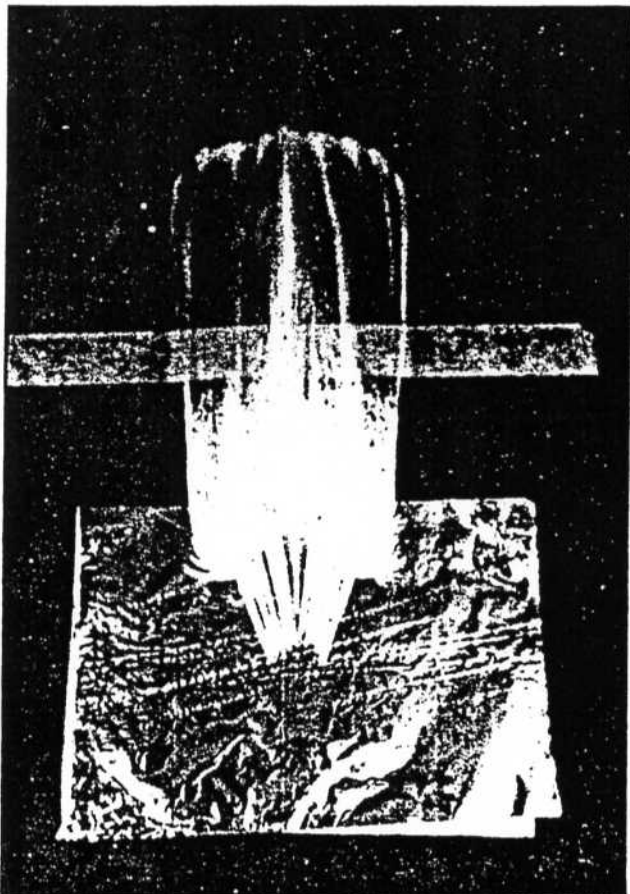
SHARP pocket knife,  
Wood rasp or surform plane,  
Barber shears,  
Razor knife,  
Sandpaper,  
Contact cement,  
Buckskin.

#### ADDITIONAL MATERIALS:

Flexible palat knife - for applying body filler.  
Large piece of ceramic tile - for mixing body filler.

#### FEATHER PREPARATION:

The major part of fan is the feathers. Unfortunately, Federal and State Laws make it pretty difficult to obtain authentic raw materials. However, should you be fortunate enough to obtain the desired feathers, it is a rare case in which they are not damaged in some way. Unfortunately, the bird does not grow and preen its feathers primarily for the fanmaker and little in Nature is perfect. Consequently, we will not fool Mother Nature, but merely improve her appearance.



1 Feathers are arranged to suit then taped down to avoid moving. Aluminum foil is placed under quill portion. Photos by Tyrone Stewart.

The most common damage is to the tips of the feathers. This is easily corrected by the skillful use of the scissors. A barber shears with minute teeth (This type of shear was specially manufactured. A good sharp scissors will also work.) is the best available tool for trimming feathers. Some feather workers have gone to extremes by manufacturing metal or plastic templates which appear to be the prescribed shape of the standard feather. The feather is taped to a flat surface, the template is placed on top of it, and then the feather is trimmed with a razor blade. This method requires extreme skill, considerable time, and the hand of a surgeon. It also produces a set of feathers that appear to have been machine made.

By using a barber shears and eyeballing the cut, after a small amount of practice, near perfection is reached. The secret is in the scissors. The minute teeth grip the barbs and prevent the feather from slipping from the blades. Consequently, this insures a straight cut.

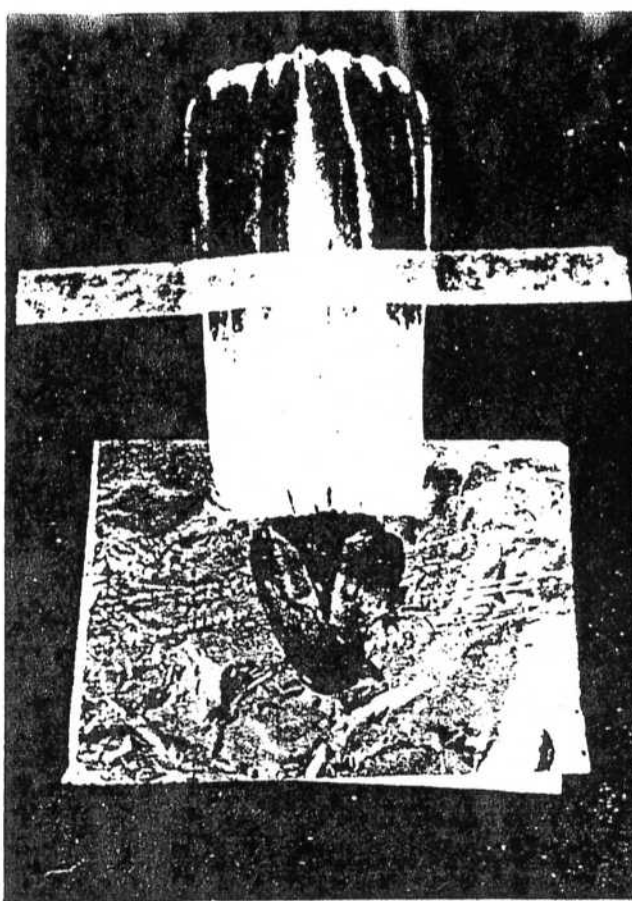
If you desire to straighten the feathers, simply grasp the feather at each end, bend it well beyond the desired shape, hold for a few seconds and let it go. If you use the steam method, the first time you use the fan in a damp climate, your feathers will assume their original shape.

If your feathers are exceptionally dirty or blood stained, then it is desirable to clean them. Generally, a mild solution of a standard laundry detergent in warm water will remove most dirt. Soaking in Woolite works wonders and prevents that "fly away" appearance. A warm salt water solution will remove blood. The feathers should be dried under a hair drier or in front of a fan. This necessitates the hand seaming of the barbs. This writer prefers to use trichloroethylene. Trichloroethylene is presently being investigated by the E.P.A. and others as a possible cause of sterility in humans if you are in contact with it for long periods of time: i.e., Dry Cleaning Industry Workers. It is a standard cleaning solution used in self-service dry cleaning machines. The advantages this has over water is that it evaporates within seconds leaving the feather perfectly dry. It semi-mothproofs the feathers and also kills feather lice and their larva. Lice are the main destroyers of feathers. They produce what some people believe to be wear marks or "sun-streaking." "Sun wear" is a very valid argument as demonstrated by R.J.Voelker. For some unknown reason these little varmints eat only the white portion of the feathers. Consequently, fanmakers take heed of the old adage: "An ounce of prevention is worth a pound of cure."

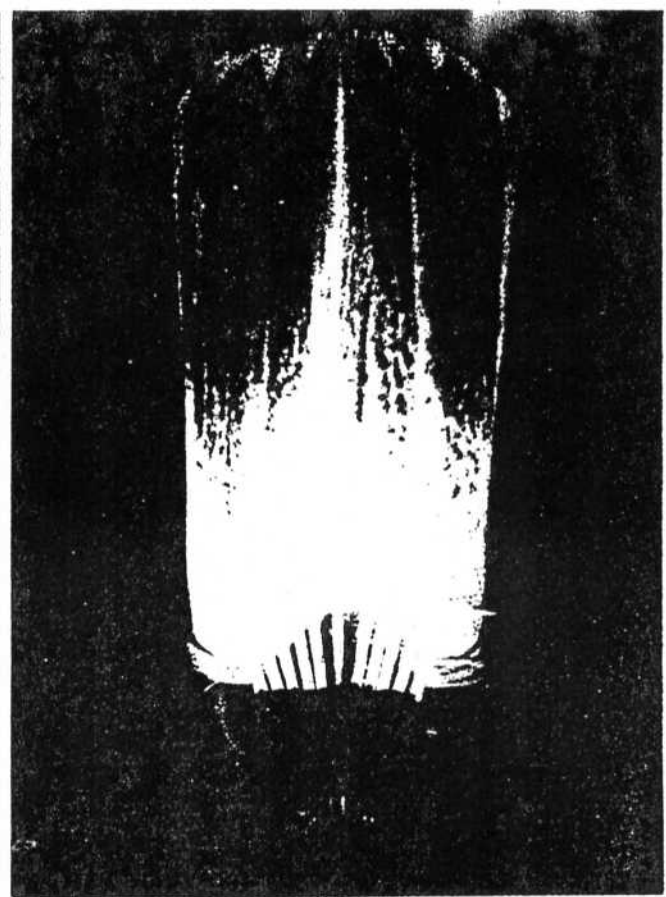
#### SETTING THE FAN

In setting the feathers, careful study of a live bird in a zoo or a stuffed one in a museum will reveal that there is a natural curvature to the tail when viewed from the side. Maintaining this curvature is usually desired in order for the tail to have a natural appearance. It can be done by using Stewarts (1970) method; however, this is somewhat time consuming and hard on the fingers if one is not skilled with a knife. One alternative is to use a large wooden spoon. It is already preshaped and all that is needed is a few cuts in the right places and you have a ready made handle. From this point follow Stewart's procedure.

Another alternative is the use of auto body filler in conjunction with a dowel rod of appropriate size. Simply lay the feathers on a flat surface and arrange them so they have a natural appearance. This writer then uses silk surgical tape ("Dermacil" or any pressure sensitive tape will do.) to hold them in place. It is easily removed and does not harm the feathers. Others prefer to use a book or even canned goods in place of tape, but this often produces a flat, almost concave appearance. Regardless of which is used, place the tape or book no further than 1/4" distance down from the tips of the feathers. Slide a piece of aluminium foil under the bases of the feathers. Mix a small portion of auto body filler and apply it to the base of the feathers, covering the bases. This will generally set within five minutes.



2 First batch of body filler is applied.



3 After filler sets carve off excess to form basic shape of handles' upper (tapered) portion.

Pick up the entire tail and peel off the foil. Shape the body filler to the approximate size of the combined bases of the feathers before it completely sets. By using a sharp knife, the body filler will cut as easily as a cake of wax. The longer it sets, the more difficult it is to carve.

The width of this portion of the fan will depend on the number of feathers used. This can be narrowed by cutting off the base of the quill just below the feathered portion and inserting 1/8" dowel rods into the bases of the feathers. Inject contact cement into the quill, wait a few minutes, and then insert the dowel rod. Trim the rods to the desired length, arrange the feathers, and resume as above. Any portion of the sticks left exposed will be covered by decoration feathers or, if you prefer, wrap the sticks with multi-colored fishing line, add some metal spots, rabbit fur or links of chain, and set as above.

Next, choose a dowel rod of appropriate diameter and cut a piece proportionate to the length of the feathers. Use common sense. A fan with a large base needs a larger diameter dowel (max. size 3/4" diameter) than one with a narrow base, (unless one likes to bead a lot, because of the large spread that will ensue.)

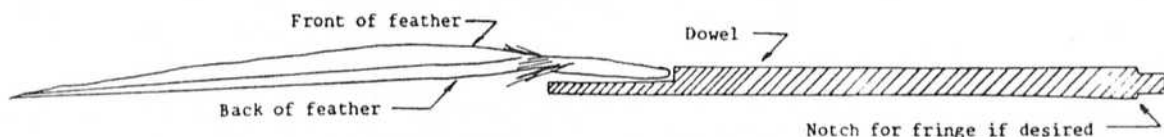
Remove a section 3/4" as long as the filler portion

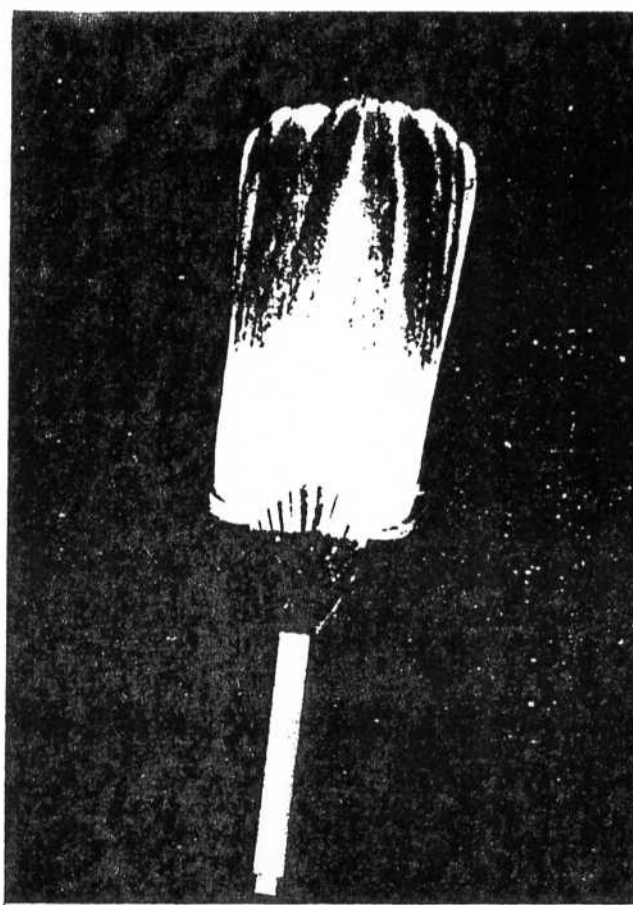
of the feathers and a little over 1/2" the diameter of the dowel rod. Coat this exposed portion and also the flat backside of the filler portion of the feathers with contact cement. Let dry, line the two pieces up and stick them together.

Mix some more body filler and apply it liberally to the rough open areas. When this sets, the upper portion of the fan is about 1/3 larger than the finished size. Trim the body filler portion to the desired shape using a pocket knife and wood rasp before the material completely sets. You now have a finished fan minus fringe, decoration feathers, buskskin covering and beadwork. Decoration feathers can be applied with double face tape for hackles or by using contact cement for larger feathers such as macaw body feathers. These are merely laid in a slot cut out of the body filler. When the desired decorations are affixed, simply fill in the holes with more body filler, or some other substance. Sand the entire handle smooth.

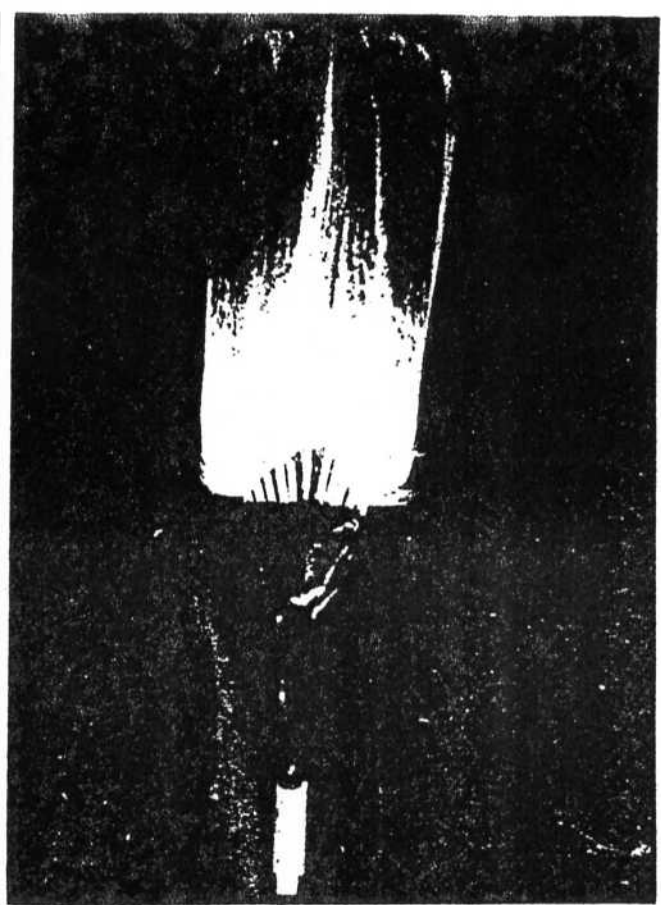
The buskskin covering can now be applied. Cut out a piece that conforms to the general shape of the handle. Coat both the buskskin and the handle with contact cement. Let dry and then stretch the buskskin onto the handle, trim up the back, flatten the seam with your fingernail, apply fringe and you are ready to bead. The use of contact cement eliminates

4 Side view showing relationship of feathers to dowel handle.





5 A notched dowel is placed to fit to the back of the fan and more filler applied to hold dowel handle. Dowel secured in place.



6 More body filler is applied with palate knife until desired taper is achieved. When dry use sharp knife to form rough handle and sand smooth if you wish.

sewing which will be covered by beadwork anyway, so no one knows the difference. A couple of stitches in any exposed parts of the buckskin will add to the hand crafted appearance and fool the experts. The use of contact cement allows you to piece the buckskin and use up your scrap material. Contact cement is a lot cheaper than buckskin and it allows you to recycle waste.

If you have followed the above instructions, you are now ready to bead. After you have put a few fans together by using this method, you will be able to set a complete fan minus the beadwork within two hours, (or more -- maybe four hours).

There are, however, some hobbyists who like to classify themselves as "gung-ho" traditionalists and seem to take a rather dim view of the excessive use of auto body filler and contact cement. This writer has had experience in the restoration of old fans and some of the techniques used by various craftsmen are rather amazing. One such fan had its handle manufactured from a 2 X 4. The feathers were sewed to the wood by burning about 300 holes in the handle. The bases of the feathers were covered with pitch which in turn was covered with buckskin and then beaded. Another fan was held together by using a band-aid. Unfortunately the life span of a band-aid is about three days. Most old fans encountered were held together by using excessive amounts of commercial glue. Many of the older fans (ca. 1900) are manufactured from unpulled tails. Consequently the natural curvature is maintained but it produces an excessively large fan, and sooner or later, the oil will seep through and eventually rot the threads holding the beads in place. A Comanche fan in the Heye Foundation collection has a handle curved like a strung bow when viewed from the side. This type appeals to some individuals, but it is an atypical

example and also produces one of the worlds biggest fans.

The use of auto body filler and contact cement adds to the entire strength of the overall fan, which is a 99 44/100% guarantee that your fan will never fall apart with age. Construction time is cut from a few days to a few hours with the same outstanding end result everytime.

