

The History of Felt Hats

By Marie Robinette

Felt hat manufacturing is a very old industry. According to one story it was originated by St. Clement, and the festival of the trade used to be held on his day, November 23. Until the early 20's all the operations were performed by hand, but modern machinery took over every process, although it is still believed that the hand process makes a better hat.

As a matter of fact felt hats date back to an even earlier time. One of the types of ancient Roman hats, called the "petasus," worn on a journey, was much like the felt hats of the later Model A era.



Petasus Hat of Ancient Rome

Many traditions are connected with caps and hats. Among the Romans the cap was a symbol of liberty. Wearing a hat in medieval times also was a mark of distinction.

Hatters began to flourish in Nuremberg, Germany, as early as 1369. In 1453 the French had adopted head covering generally. In colonial days the hatters of England complained of the competition of the American colonies, and ever since America has been very proficient in hat-making, although soft felt hats were not worn here until 1850.

Felting Properties of Wool and Fur

When wool or fur fibers are viewed under a microscope, many tiny scales can be seen on their apparently smooth surface; in fact, some fibers seem to be made up of scales, all pointing in one direction, like the ridges on a pine cone. Human hair is also like that; when running your fingers along a single strand of hair, it slides down more smoothly than when they run up, due to the scales. When fur fibers are put into hot water the scales expand and do not cling so tightly to the fiber. Then when the water is drained off and the scales close down on the hair again, they catch and interlock with scales on adjacent hairs, matting the fibers together more and more firmly as the process is repeated. This is why woolen goods continue to shrink unless properly handled when washed.

Sources of Felt



Most of the fur was originally obtained from beavers, which were found in great numbers in the northwestern part of the United States and in Canada.

Other prized fur came from the otter, mink, Russian hare, Saxony hare, Scotch hare, Scotch coney, and French coney (rabbit).

Muskrat and nutria were also used. The muskrat or musquash, a native of Canada, is a cousin of the beaver, but smaller. The pelt was sold for furs as "River Mink" or "Hudson Seal." The fur of the nutria, or coypu rat, was imported from South America. The thickest fur is obtained from animals which live in a cold climate.

Processing

The skins were first sorted into grades according to kind, color, or quality. They were brushed to straighten out the fur, and then, as there are stiff long hairs sticking up throughout the soft, downy fur, as many as possible were removed by plucking, a process which did not harm the fur. The skins were then cleaned of the fatty matter. This process was known as "carroting" which washed in a solution of mercury and nitric acid.

The skins were carefully dried, brushed, and then cut into narrow strips by a machine that at the same time sheared the fur close to the skin. The pelt strips shorn of the fleece in this way were used for by-products such as glue and gelatin.

The fur fleece was then sorted into grades according to quality. The choicest part of the fleece of land animals is the back, and of water animals the belly and cheeks; towards the outer edges of the skin the quality deteriorates.

To mix the fur and to cleanse it two machines were used. The first was called a "devil." The fur was fed through it three times, being tossed and whirled and picked apart by revolving teeth and settling again in order to have the process repeated. The fur still had hairs, bits of pelt, coarse particles, and dust, which were next removed by a machine called a "blower." A cylindrical



apparatus, inside of which a toothed cylinder revolves several thousand times a minute, tosses the fur upward where it was blown to another machine, while the impurities fell down upon a screen which sifted them. This operation was repeated several times.

Forming



The next process was called "forming." In preparation for it the exact weight of fur for a hat, in the case of a soft hat from three to five or six ounces, was put into a little box. A dozen of these boxes of fur were then put into a case, and from this point on the hats continue to be grouped by dozens.

An operator fed the fur, box by box, through rollers, into the machine called a "former," which roughly formed or shaped the hat body. This machine, invented in 1846, reduced the cost of labor to about one-tenth that of the slow hand method. A part of the machine whirled and scattered the fur. A cone of thin copper plate, perforated with many tiny holes, was slowly revolved, while a suction fan revolving very swiftly—about 4,000 times a minute—below the cone drew the fur down evenly all over the cone's surface and mated the fibers together. Wet cloths were thrown over the cone, another perforated cone of the same shape was placed over it, and the whole thing was put into a tank of hot water for a minute and then passed to the next process.

Felting Process Begun

This matted fur, even as it came from the hot water, was the beginning of the hat body. It was about three times larger, however, than the finished shape—some 32 inches deep and 36 inches in diameter.

In order to harden the fur bodies enough to prevent breakage in later handling they were wrapped in a woolen cloth still attached to their cones, rolled gently by hand, squeezed, and pressed.

Sizing

The sizing process now begins; after it has been repeated the cones were reduced to one-third the original size. Three or four cones were dipped together into a tank of water kept at the boiling point by steam, and then rolled upon a sloping table, which is called a "battery."

The hats were taken out of the boiling water quickly, wrapped in burlap, and again rolled gently by hand on the table to dry them. As the process was repeated the hats were treated less gently, since the felt continued to knit more closely together. The rolling tends to mat the fibers closely as they press together and spring back.

In cheaper grade hats this process was done by machine, but the hand method is considered best. The reduction in size and thickness must be uniform, and this was made possible by shaking and turning the cones. The selvage was trimmed, and the size in which the hat was to be finished was marked on the edge by a notch.



Dyeing

The mixture of the different colors of the raw material resulted in a gray shade in the body, and if the hats were to be dyed, they were boiled several hours at this stage in a solution of color. The dye was in large vats and was constantly stirred to give a uniform color. In the drying room the hats were dried thoroughly at a high temperature. Coal tar products were generally used for dyeing.

Stiffening

After dyeing, the hats were soaked in a solution of shellac in alcohol to stiffen them. A cheaper solution was of shellac and alkali, and since 80 per cent of the alkali may be recovered for use again, it was generally used. The hats were dipped again and again in the solution and rolled, and when thoroughly soaked the alcohol was allowed to evaporate or the alkali was counteracted by an acid. They were dried at a high temperature and steamed to draw the shellac into the interior of the fabric.



Stretching

The stretching department received the hats next and placed them on machines; here they began to resemble the finished shape. The felt cone was worked slowly and gently onto a revolving block, shaped like the crown of a hat and called a "tip," and was forced down until it conformed to this shape. The tip-stretching shapes the crown only; after this the brim must be stretched. The hydraulic presses which then blocked the hats into shape often exert 500 pounds' pressure. These presses used metal dies of the exact shape of the finished hat.

Finishing Processes

Until this stage the process was the same for both soft and stiff hats, but from now on the treatment is different. The soft hats were dried after the machine blocking, softened again by steam, shaped and stretched by hand over a die of the desired shape, ironed by hand with a hot iron, and put to cool in a cold water press. If the surface of the hats was too rough, all or part of the nap was removed by a machine with a sharp knife blade. The hat may have been polished and rubbed to bring out the best effect of the dyes and to give a gloss. Some colors have a more glossy effect than others. The finishing included trimming the brim. After a final inspection the hats were packed in bandboxes and put in cases ready for shipment.

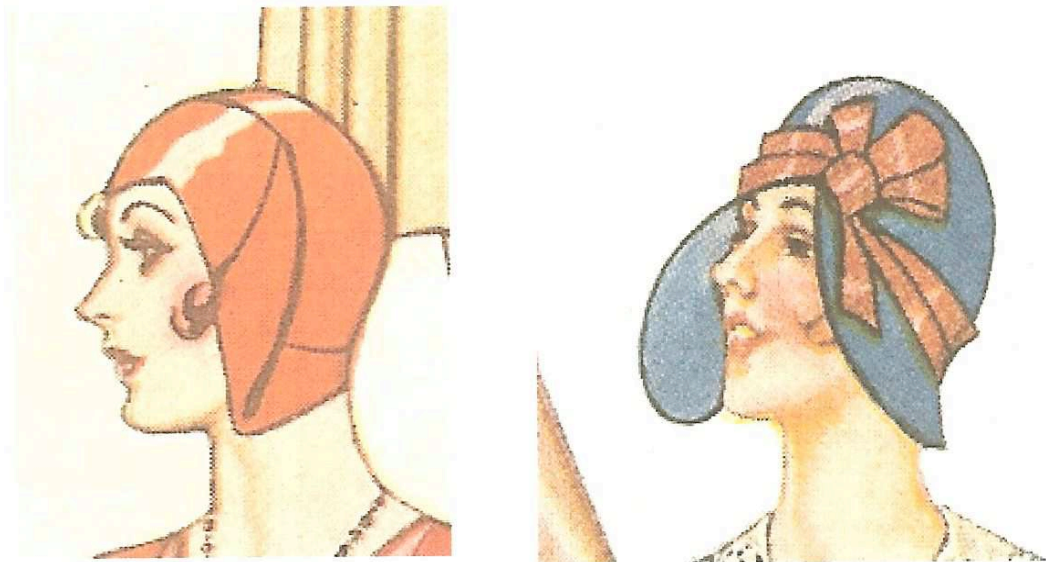
Different Grades of Felt

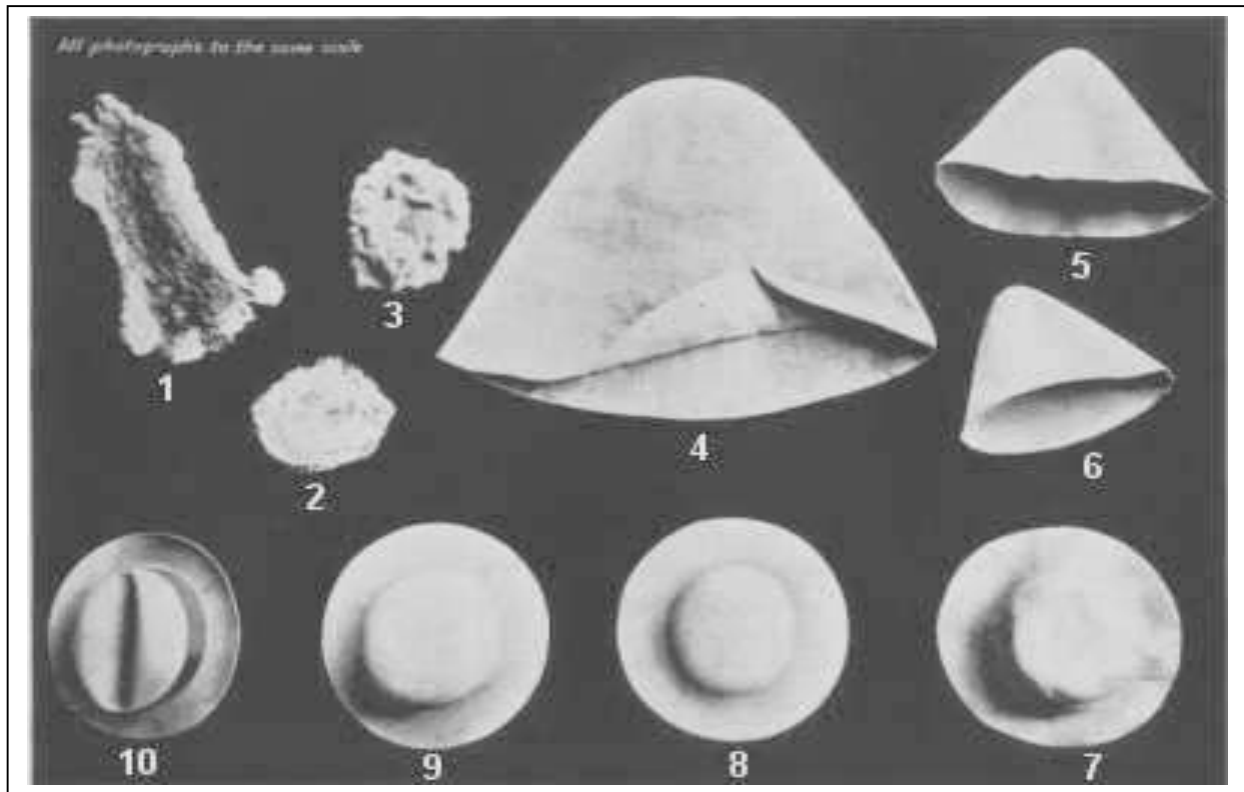


The largest business in felt hats was in men's wear, as there was always a demand for men's felt hats. The amount of felt used in women's headgear varied in different years. There were many different grades and finishes of felt. Beside wool hats and fur hats, there were mixtures in which the wool was usually underneath. Hats of shoddy, a combination of the cheapest wool and cotton, were made only when felt hats were so popular that a very low-priced felt was demanded by a part of the trade. The finish may be thick and downy, or like a velour with little nap. Long hairs are characteristic of the scratch or mohair finish.

In the early 1920's there was a felt of a beautiful lustrous finish, sometimes called charmeuse. The distinguishing features are the slightly loose nap and the polished surface of the flat nap. The velour finish is dense and erect.

Women wore cloche hats throughout the 20's. A cloche hat told everyone that you had short hair. It was only possible to get a close fitting cloche on the skull if the hair was cropped short and flat. The cloche hat affected body posture as it was pulled well over the eyes, which meant young women held their heads at a specific angle in order to see where they were going. Foreheads were unfashionable in the early model A era.





How your soft hat is made

Figure 1 The rabbit skin

Figure 3 The fur remains

Figure 5 Partly shrunk

Figure 7 Assuming the hat shape

Figure 9 Ready for brim shaping

Figure 2 The pelt is shredded off

Figure 4 The start of the felt

Figure 6 Felting completed

Figure 8 The crown is blocked

Figure 10 Trimmed and finished

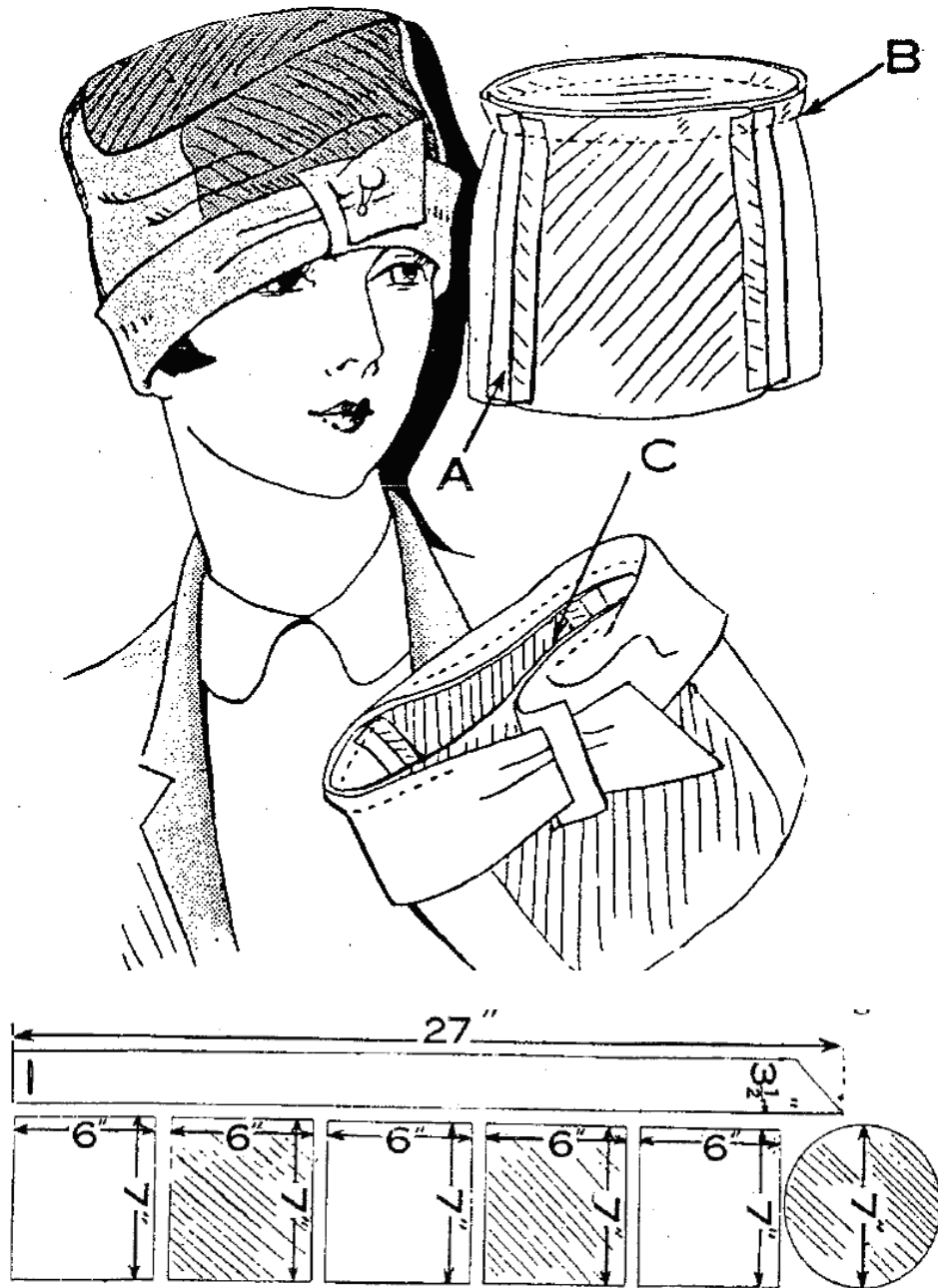
Make your own

Now that you have the history of felt you are probably ready to try your hand at making your own hat. This is an easy pattern to try with store bought felt purchased by the yard.

Two-Toned Felt Hat

You will need: $\frac{3}{8}$ yd of a lighter tone and $\frac{1}{4}$ yd of the darker. Suggested colors are two tones of tan or grey and blue as a combination. The cutting chart below gives all dimensions of the hat. The center crown is cut in a perfect circle 7" in diameter of the darker tone of felt. The side crown is made of 3 sections of the light material and 2 of the dark, each section cut 6" wide and 7" deep. The brim is of the light felt cut $3\frac{1}{2}$ " wide and 27" long, one end slashed diagonally, the other slit so that the diagonal end may be slipped through it. These dimensions are for a 22" head size. They may easily be altered to fit a head that is larger or smaller.

Join the side sections of the crown as at **A**. Pin side crown to center arranging the slight fullness evenly. Hold this fullness in as you sew the side crown to the center as at **B**. Then turn crown to right side and join brim to it as at **C** holding the brim portion slightly full as you sew. Arrange creases in crown and tack them invisibly. Add jewel pin if desired.



If it does not work the first time, try again. Felt is not expensive and very easy to work with. Next, show off your new hat at your next Model A function. Everyone will be asking where you found such a great hat.

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