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These Tailors Make 'Topcoats' for Turbines



TURBINE TAILOR—At South Philadelphia, Clamance Shingler has reduced to a fine art the making of heat-conserving asbestos-covered jackets for steam turbines. The coverings must fit just right and be of a specified thickness and quality for the particular turbine they cover.



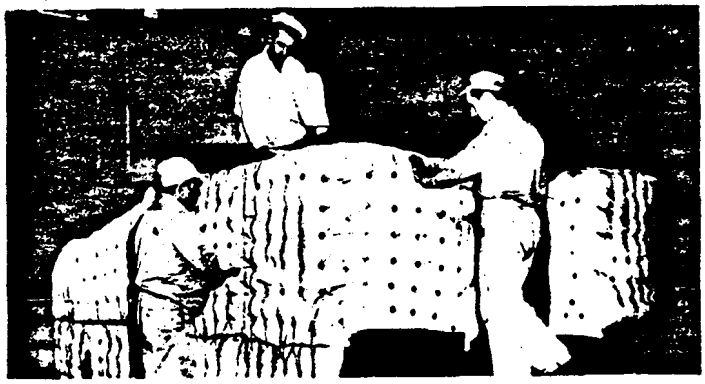
SLICK STITCH—"Just a little thing I run up myself," says John Jones as he stitches together the various pieces of a custom-tailored turbine-blanket section. The machine he uses is a heavy-duty job that stitches with heavy wire covered with asbestos. The "thread" must pass through a lubricating bath before it can be used to sew the heavy asbestos-jacket pieces.



FIBERGLAS FILLING—Harry McLaughlin fills the blankets with specially-treated Fiberglas. Plastic coating on the fibers prevents the glass strands from powdering. This treatment makes the glass filling safe and easy to handle during the operation.

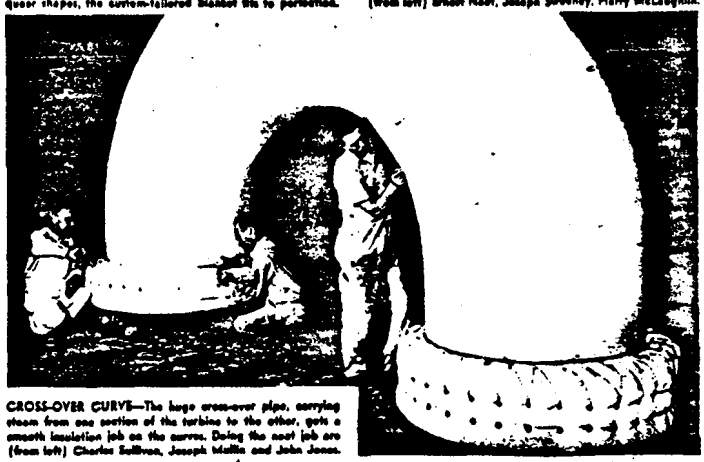


QUILTING BEE—Heavy wire quilting loops the Fiberglas stuffing in place in the odd-shaped blankets. Here deftly inserting the quilting wires are (from left) Joseph Mullin, Ernest Nacif and Charles Sullivan. Wires are held by metal buttons.



EXACT FIT—All around the corners, curves, pipes and queer shapes, the custom-tailored blanket fits to perfection.

Lacing the blankets snugly into place with steel wire are (from left) Ernest Nacif, Joseph Sweeney, Harry McLaughlin.



CROSS-OVER CURVE—The huge cross-over pipe, carrying steam from one section of the turbine to the other, gets a smooth insulation job on the curves. Doing the neat job are (from left) Charles Sullivan, Joseph Mullin and John Jones.

SOUTH PHILADELPHIA—For 40 years Clamance Shingler has been a tailor to turbines—those giant steam-driven machines that provide power for homes and factories.

Every turbine needs asbestos insulating blankets to conserve the power-giving heat. And because every turbine presents a special problem, every blanket is a custom-made job.

Even though the castings on certain types of turbines are identical, the pipes on the outside are made to suit the generating station where the turbines are to be installed. Mr. Shingler has to design the insulating blankets to fit these pipes.

His first step is to get the engineering drawings for each new turbine. From these he learns the locations of all the pipes, knobs and whatnots he will have to keep in mind.

Next Mr. Shingler takes huge sheets of paper, goes to the castings themselves, and makes a pattern — just as a Parisian dress-designer makes patterns on a curvaceous model.

Outlines on Asbestos

From these paper patterns, outlines are traced on the asbestos cloth used in making the blankets. A motor-driven cutter, like that used in the cutting rooms of large clothing manufacturers, shears the heavy rock-wool cloth into the weird shapes needed to fit the many curves of the turbine castings.

Because different classes of turbines operate at different temperatures, the type of asbestos blanket differs according to the temperature involved.

Blankets of asbestos cloth are good up to 950 degrees. At that temperature such cloth might crumble, so the "threads" in the cloth are wires covered with asbestos.

Though they are called blankets, these turbine topcoats look more like mattresses. They're actually two sheets of material with five-inch edges stitched to them. When a blanket is nearly complete, it is blown chock-full of glass wool.

Sewing Isn't Simple

Blankets like these aren't stitched up on a gently-whirring sewing machine like mother uses. The turbine blankets are stitched with a thick cord made of asbestos wrapped around a heavy wire. The machine that does the sewing is much like that used by a shoemaker.

Just as a mattress is quilted to keep the stuffing from shifting or bunching, the asbestos blankets are tufted with steel wire and washers.

Some of these tufting "buttons" have hooks on them, like the hook of a hook-and-eye. When the blanket is placed in position, wire is laced back and forth between the hooks to hold the sections together.

Modern design has streamlined the turbines with sleek outer covers of metal, so the customer rarely sees the fine handicraft of Clamance Shingler and his associates. But because their job is done to such exactness, the customer has more reasons to be sure his new turbine will operate efficiently.

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