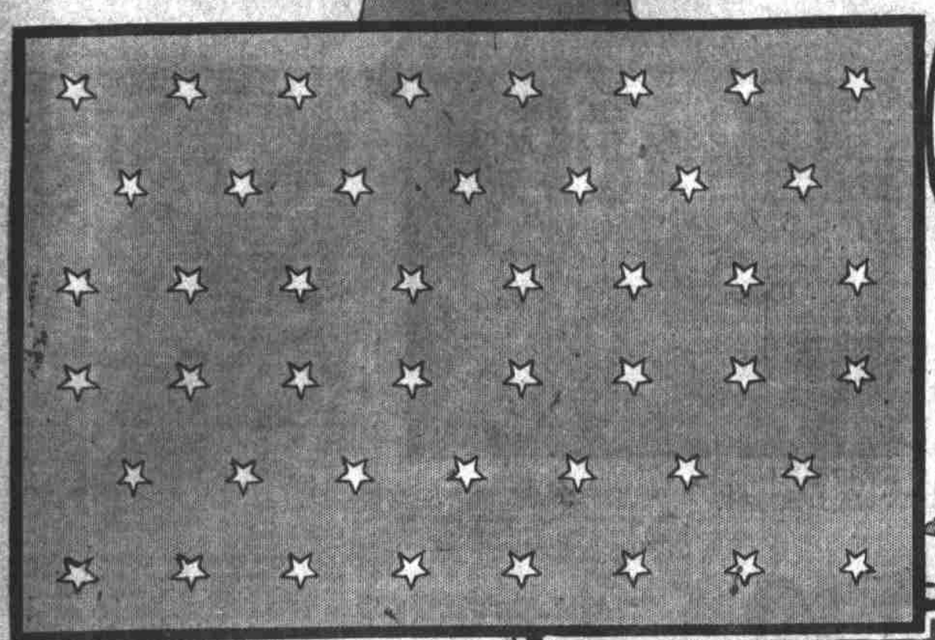
THE NEW STAR IN OLD GLORY'S FOLDS

The Work Required to Give Oklahoma Its Place on the Flag



New Arrangement of the Field of Stars.

WHEN with the dawn of Independence Day the sun rises radiantly over the breadth and length of the land, its rays will fall on thousands of this country's emblems—new flags waving from slender staffs and curling gently in the breeze over forts, garrisons, armories, hospitals and fighting vessels.

Caught in the dazzling folds, the sun will flare back in reflections of the national colors; it will fleck the shimmering field of stars with light and will reveal a new star, emblem of a new state admitted to the Union.

Because of the admission of Oklahoma the stars on the flag on this Fourth of July will number forty-six.

In recognition of the admission of a new state into the Union the law requires the addition of a new star to the flag, which is officially to be adopted on the Fourth of July following the territory's acquirement of statehood. Thus from the more than 300 army posts and stations, from battleships and national guard headquarters, from government houses and from buildings, stores and thousands of homes in all parts of the country flags bearing the new star will float for the first time on the Fourth.

The task of adding this new star to the flag has not been an easy one. It has been tedious and difficult. At the Schuylkill Arsenal in Philadelphia, the navy yard at Brooklyn and on battleships for the past few months people have been busy rearranging the stars on old flags and making new standards.

FLAGS are supplied to army posts and garrisons from the Schuylkill Arsenal, in Philadelphia. There for the last three months women have been working, day after day, ripping stars off of existing flags and replacing them after the new pattern, with the addition of Oklahoma's star. More than 2500 flags have been remodeled for army use.

At the Brooklyn Navy Yard possibly more than a thousand have been changed, while many new flags have been manufactured for use on vessels. On many warships the addition of a new star to the colors has been made by the bluejackets themselves. At the Schuylkill Arsenal it is estimated that the admission of the new state meant the ripping off of flags of about 66,000 stars. These had to be sewed on again in the new position required by the rearrangement of the field of stars, and, in addition, something like 5000 new stars, in the aggregate, had to be added.

Various kinds of flags have been rearranged at the arsenal for use in the army. They range from the storm and recruiting bunting flag, which measures four by eight feet, to the garrison flag, which is twenty feet wide and thirty-six feet in length.

Garrison flags can be used only at larger authorized posts. The ordinary post flag measures ten by twenty feet. Arrangement of the stars on these flags has been changed by the new addition.

According to the government specifications, the new flag will bear forty-six stars, arranged in six rows, with eight stars in the top row, seven in the next, eight in the two next rows, then a row of seven and a lower row of eight.

REQUIRES CAREFUL WORK

In the old flags of forty-five stars eight were placed in the top row, seven in the second, eight in the third, seven on the fourth, eight on the fifth and seven on the sixth. The amending of the number has necessitated changes only in the lower three rows. The placing of the stars must be carefully done, the position of each one mathematically measured and marked in chalk on the blue field.

Could one have peeped into the flagrooms at the arsenal during February, March and April he would have witnessed a very busy scene. There, sitting in chairs, with the brilliant colors of the flags almost enfolding them, women busily worked applying surgeons' scalpels to the stars.

With the sharp knife they ripped the threads binding the stars to the flag, using extreme care not to cut or injure the stars, which were to be used again. With the lower three rows of stars removed on both sides of the flag, it was passed along to a man who marked the new arrangement.

With measuring instruments he calculated the position, so that the stars were all an equal distance apart. This marking was an extremely delicate task, for the slightest deviation in the arrangement of the stars would mar the appearance. With the places for the stars marked in chalk the flags were passed to women sitting at sewing machines, who sewed on the stars.

Making the stars kept one man busy. The stars

Cutting out Stars with a Die.

are punched by a die, with every blow of which fifteen are cut out of bales of material. These are then hemmed in at the edges and placed on the flags.

With the rearranging of the flags at the Schuylkill Arsenal there has been inaugurated a manufacture of the national colors. With the exception of the flags made at the Brooklyn Navy Yard for use in the navy, most of Uncle Sam's flags have been made by firms on contract. Hereafter many of the army flags will be turned out from the government workshop. It is said that about 5000 flags are used up by the army every two or three years.

Last January the quartermaster general issued an order instructing the officers at the Schuylkill Arsenal to purchase silk and other materials to make silken colors to be carried by regiments of the regular army.

These consist of national colors, of the stars and stripes, measuring four by six feet, surrounded by a deep fringe of gold silk, and regimental colors, bearing the national coat-of-arms and the number of the regiment. For the infantry the field is blue, for the cavalry yellow and for the artillery red.

The designs are embroidered on the flag by hand, and a staff of about twenty women are required in embroidering chevrons and other insignia. When this work is finished it is likely that the department will begin manufacturing bunting flags for use at the various posts.

At the Brooklyn Navy Yard the government has maintained an extensive plant for the manufacture of flags for use in the navy. There, also, many women have been extremely busy rearranging the stars for use this Fourth of July and turning out new colors.

MANY NEEDED ON SHIPS

Few people have an idea of the number of flags required on naval vessels. The ships must have colors for fleet communication and also many flags for ceremonial occasions. Every three years each war vessel is given a new outfit, the cost of which is estimated at $2500. About 250 different flags are required.

During one year at this plant the government expended $60,000, of which amount $43,000 was for materials and $17,000 for labor. Over 59,000 flags were manufactured. More than 408 different kinds were made.

In one year 150,000 yards of bunting were used. Extreme care is used in the purchase of bunting. It must be made entirely of wool and nineteen inches in width. Navy bunting runs thirty-four threads to the inch, and is extremely light. Before it is made into flags the material undergoes severe tests.

There is a chemical test by which strips are soaked and washed in soap and fresh water for a period of twenty-four hours. It is then soaked in salt water for a similar period of time and then exposed for ten days, including ten hours in bright sunlight.

Thus the fastness of color is determined. The colors must not fade nor run. Besides this test the goods must undergo a test of strength. A two-inch wide strip of warp must show a strength of sixty-five pounds in a machine, while a two-inch piece of filling must stand a forty-five-pound test.

Stars are used varying in size from two to fourteen inches in diameter. They are punched out in a machine, which cuts 50 to 100 at a time. Eight different sizes of stars are used. About the flag is sewn a heading of flax raven canvas with a distance lining of plaited hemp rope, which is made on the naval prison ship at Boston.

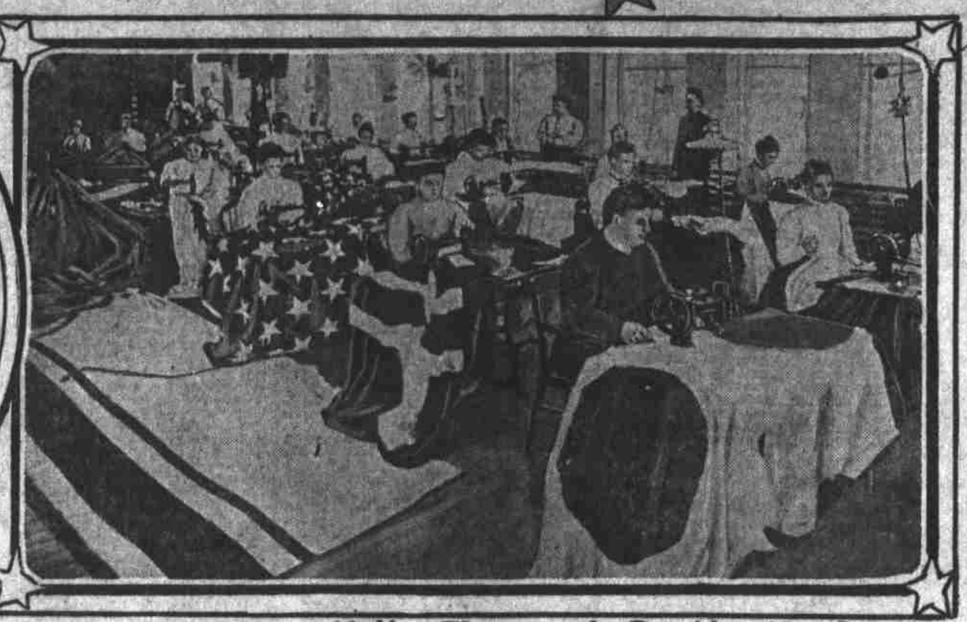
When they are finished the flags are pressed by an electric iron roller and sent to the storekeeper, who distributes them to the ships.

At the Brooklyn Navy Yard the flag industry requires the employment of about thirty-five skilled machine operators and needlewomen and also three men. They engage in cutting the material into strips on the floor after mathematical markings, sewing them into strips on machines operated by an electric motor of 1¼ horsepower, placing on the stars and finishing the flags.

Various periods are required to make certain flags, the President's flag requiring more time than any. Made in two sizes, ten by fourteen and three by five feet, the flag consists of a blue ground bearing the coat-of-arms of the United States, sewn by hand. To make this flag about a month is required.

In this flag silk is used which costs $9 a pound.

Sewing on the New Stars.



Making Flags at the Brooklyn Navy Yard.

Spacing Must Be Done Carefully.

Finishing Stars for Insertion in Flags.

The largest flag in use costs $40. This is the United States ensign, No. 1, which is thirty-six feet long and twenty feet wide.

The flags already in use in the navy were altered by the sailors, some of whom necessarily must become as skilful with the needle as the women operators. No machines, however, have been used on the ships, and the jack tars have made all the alterations by hand.

The addition of a star to the blue field, as one can realize, means considerable work. The position of the stars requires the most careful arrangement for the preservation of symmetry.

In proportion to the flag the size of the blue field cannot well be changed, and with the addition of new states the stars must most likely be made smaller. Many suggestions have been made from time to time for a change of the position of the stars. One idea which has been favorably spoken of is to arrange the stars in a circle and keep on adding stars on the outside as states are admitted.

In this respect, however, officials deem a rearrangement as needing long consideration. Should the flags officially be changed, a tremendous amount of labor would be required to change those already made. Even the adding of one more star necessitates a great deal of labor.

Much more complicated, indeed, is the task of making national flags than in the days shortly after Betsy Ross, in her little home in Philadelphia, unfolded the first glorious emblem of the nation to the admiring eyes of George Washington. The specifications of the government for the materials, size and method of making various flags are explicit.

Garrison, post, storm and recruiting flags must be made of material weighing not less than one and seven-eighths ounces to the linear yard, measuring nineteen inches in width and containing not less than thirty-four threads of warp and thirty-two threads of filling to the square inch. Seams must be made of a particular width and stitched with three rows of stitching. Stars must be placed at definite distances apart. When they are made all the flags are carefully inspected. For the making of garrison flags 160 yards of bunting are required, for post flags forty-five yards and for storm flags eight yards.

Each post and garrison is entitled to two post and two storm flags, each recruiting station to two storm flags, each fortification to two storm flags and to each field hospital two storm flags. From all of these this Fourth will float the new forty-six-star flag.

From the Schuylkill Arsenal, where the flags have been altered, they are sent to the quartermaster departments at New York, Boston, Jeffersonville, Ind.; San Francisco, St. Louis and Omaha, from which points they are distributed.

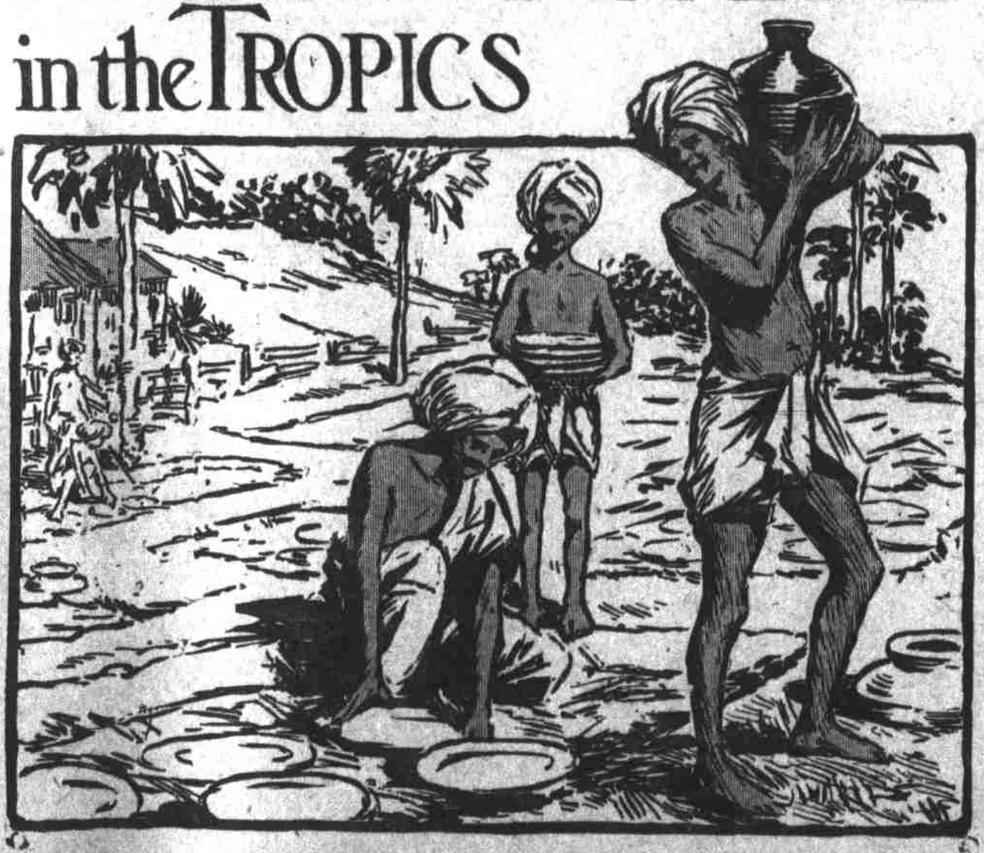
Besides the larger flags, possibly 200,000 small stamped flags will be used by the militia on the Fourth, all of them bearing forty-six stars.

Bright and new, with glowing colors, these flags will greet the sunshine and morning breezes on the Fourth. They will symbolize the advancement of these sovereign states, and the proud distinction of statehood, now officially recognized, attained by Oklahoma.

The "Switzerland of America"

LAKE county, one of the most picturesque of the northern counties of California, is so named from Clear lake, the largest body of fresh water in the state. From its varied scenery of mountain and lake, it has been called the "Switzerland of America." Several creeks run into Clear lake, one of the principal being Kelsey creek. Each spring the fish run from Clear lake up Kelsey creek to spawn, sometimes in so great numbers that wagons in crossing crush many of them. It happens in some seasons that the dry weather, coming on suddenly, causes the waters of the creek to subside rapidly. Then the fish are left stranded and die in countless millions. The farmers cart off wagonloads of them to use on their fields as fertilizer, and the stench arising from their decaying bodies makes the neighborhood almost uninhabitable.

MAKING NATURAL ICE in the TROPICS



NO ONE knows when the nations of India learned the secret of making ice by Nature's processes, when the temperature of the air is 13 to 20 degrees above the point of congelation. And yet they do it.

During four or five months—November to March—the people of India make ice in large quantities. The method is an ancient one; the people know nothing of the scientific reasons for the results obtained.

FIELDS where ice is harvested most successfully have a black loam soil upon a stratum of sand. Trenches, a couple of feet deep and 120 feet or so in length, are dug, the bottoms and sides being packed hard and allowed to dry thoroughly under the rays of the sun.

These trenches are always dug to run east and west. A number of them may be dug side by side, the lot being called an ice "farm."

The "farmer" and his helpers place small sheaves of rice straw in the trenches, with loose straw scattered on the top, to the depth of a foot and a half, so that the surface of the straw bed is about six inches below the ground level.

Spaces for walking are left between the trenches, and at intervals large covered earthen water jars are sunk into the ground, so that the supply of water is kept convenient to the icemakers.

During the day the employes of the "farmer" turn the straw in the trenches at intervals, so that it is kept thoroughly dry, and they also fill the large receptacles with soft, pure water from nearby springs, in order to be ready for business when night comes.

Only one thing now remains to be done. This is to bring out from the storage place the shallow unglazed earthen dishes in which the water is to be frozen. These dishes are about nine inches in diameter at the top, diminishing to five inches at the bottom; they are one and one-half inches deep, and the ware is one-quarter inch thick. The vessels are so porous as soon to become moist throughout when water is placed in them.

When night approaches the men place these shallow dishes in long rows upon the straw in the trenches. Then, using little pots tied to the ends of bamboo rods, the men fill the dishes with water taken from the large receptables.

CAN FORECAST THE "CROP"

Each dish on the straw is about half filled with water, although the quantity varies according to the expectation of ice—the natives can forecast the crop pretty well by the aspect of the heavens and the evenness with which the air comes from the northwest.

When the prospects seem favorable about half a pint of water is put into each dish; otherwise, the amount is smaller. About 5000 dishes are placed in each trench and the ice yield is expected to average something like a quarter of a pound from each vessel.

When the heavens are clear and gentle air currents are coming from the northwest, freezing begins about midnight. The natives watch closely for the appearance of the first films of ice in the dishes; they then mix the contents of several dishes together and sprinkle the other dishes, saying that this helps along the freezing process. The thickest ice is formed about morning; it is often an inch thick.

"The ice dishes," stated a writer, in describing the process, "present a large moist external surface to the air currents, producing rapid evaporation and a lowering of the temperature. The water which percolates through the porous trays exposes so large a surface to the breeze that it is promptly frozen. In addition to the evaporative effect, we also have the influence of heat insulation to fall back upon in explaining the phenomenon.

"The thick layer of dry straw in the ice beds forms a large surface, which is a poor conductor of heat. The heat can penetrate but a little way into it during the day. So soon as the sun sets, this large and powerfully radiating surface is brought into action, and affects the water in the thin, porous pans, themselves strong radiators."