

By the stationary process the scoured pieces, while still wet, are hung on pins in the sulphur house and in loose folds so that all parts of the goods may be exposed to the full action of the sulphur. The pins should be heavily tinned to prevent rust spots.

The sulphur is placed in a cast iron kettle on the floor of the chamber, and ignited by placing pieces of red hot iron with it. The door is then shut and the goods left in this condition until sufficiently bleached, generally over night. The goods are next rinsed in clear water.

Care should be taken not to use for handling other goods the tools and implements used in this process, as the adhering sulphur will injure or destroy the colors. The bleached goods should be dried in the open air as this preserves the whiteness of the wool; if dried in a closed room at a high temperature, the bleached wool is liable to assume its original yellow color.

The stationary process has the following disadvantages:

1. The water has a tendency to settle in the lower part of the pieces, causing an irregular action of the bleach.
2. The effect of the sulphur is apt to be strongest near the kettle in which it is burning.
3. The patterns in fancy goods may be twisted out of shape by hanging on the pins, and remain in this shape.
4. Yellow or yellowish green spots are sometimes caused by drops of impure water falling from the ceiling on the goods.
5. The fumes are injurious to the health of the workmen.
6. Much sulphur is lost when the room is ventilated preparatory to changing the pieces.

To remedy these defects the continuous process is employed by which the pieces are slowly carried forward in the open width through the sulphur chamber.

Fig. 97 shows an arrangement for this purpose. Owing to the presence of the fumes sulphur houses are located at some distance from the other buildings.

In the illustration, four different compartments are shown. At the left is the fire room (C), in which the sulphur is burned in the iron basin (A). The iron door (K) is fitted with a damper to admit air to the burning sulphur.

The fumes pass through the holes in the opposite wall of this room, as indicated by the arrows, then into the spaces (D), whence it passes through the openings in the floor (E), into the bleaching room (B) above. On each side of this room are placed rollers over which the cloth is carried back and forth in the open width.

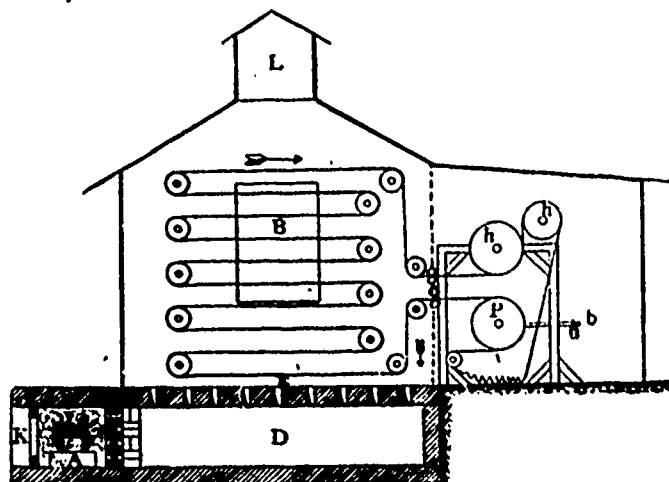
A window enables the attendant to look into the room during the bleaching process. An adjustable ventilator (L) is placed in the room. The speed of the cloth can be regulated and the pieces are passed through the room as many times as are necessary.

The unbleached cloth in the room at the right passes over the friction roll (P), by which the tension is regulated; thence between two small rolls into the bleaching room where it is carried back and forth over the rollers and finally between small rollers back to the room from which it started and over the drums (h, h). The rollers are driven by power and the tension on the cloth should be sufficient merely to prevent wrinkles.

In many sulphur rooms the cloth instead of crossing the room, is passed up and down, an arrangement that facilitates the thorough and uniform distribution of the sulphur fumes through the goods.

By the continuous method just described, the cloth is kept at the same degree of moisture during the bleaching process, a condition essential to uniform results. A blue

tinge is sometimes given to bleached wool to relieve the intensity of the white.



This process is employed for certain kinds of goods, principally those intended for the Orient, on which the sulphur bleach does not give the desired clearness.

The goods are handled in a cold solution of permanganate of potash for one-half hour, one-half pound of the permanganate being used for each forty pounds of goods. The pieces are then taken out, folded on a table and left in this condition for some time. Towards night they are treated in a sulphuric acid solution, being left in this bath over night.

The wool comes from the first bath a pale red; from the second a clear white.

On the following morning the cloth is taken from the sulphuric acid bath and entered in a solution of pulverized chalk, to which a small quantity of methyl-violet has been added. From six to nine pounds of chalk is used for each piece.

In this bath the goods are kept for about an hour at a temperature of 120 degrees F., when they are dried without washing, and the superfluous chalk removed by a whipping machine.—By N. Reiser, in the Textile World-Record.



SULPHUR COLORS ON HOSIERY.

By far the most satisfactory of all the known dyeing processes for hosiery are those based upon the use of the so-called sulphur colors, when carefully and properly applied to the cotton fibre. In the early stages of their introduction there was much diversity of opinion as to the permanence of the black and the strength of the dyed material, but recent results, based upon tests covering several years, demonstrate conclusively that the sulphur blacks yield results that meet every technical and commercial requirement, and it is only a question of time as to when all hosiery-dyeing works will be equipped for this new process. By the term "new process" we mean the several processes peculiar to the different types of sulphur colors; while each separate type of color is peculiar to itself, yet the broad principle underlying all is exactly the same.

The sulphur blacks have marked affinity for cotton in any form, and when applied to the fibre in a boiling bath in the presence of the suitable accessory chemicals or salts, the results are remarkable. The color is fast to all influences. When properly washed after dyeing it does not crack, rub or smut, and when properly dyed with suitable quantities of ingredients in the bath the color will not fade.