

Science Notes

BY WILLIAM G. HAYNES.

PUTTING THE AIR TO WORK.

One of the most interesting things in a modern industrial plant is the wider use of compressed air for all sorts of purposes. Not only the mechanical force of the escaping jet is used, but it is an efficient drier and, conversely, when combined with spray a moistener. For cleaning out-of-the-way nooks nothing can equal it. It tempers steel, stirs mixing liquids and blows factory whistles. It is clean, and when it has done its work it is in nobody's way. It makes the place where it is used a cooler, sweeter and more comfortable place to work in. Mr. Harry Franklin Porter, in one of a series of articles in "Factory" (Chicago, April), writes, in substance:

"A jet of water is capable of cooling or cleaning, but its action is limited to materials which will not be injured by moisture, and it requires provisions for drainage. Air, on the other hand, will clean or cool a batch of dough or a chunk of steel with equal facility. A steam jet, too, can accomplish many things by direct action, but who wants to work around one? Air is obviously in a class by itself, for such purposes. In at least one machine shop, air jets are employed on cutting tools, in lieu of oil or soda water, to keep both tool and work cool.

"Air, again, in a German factory, has been found to solve the problem of graduated hardening of steel. By carefully spacing the nozzles the degree of hardening may be graded quite accurately.

"For reaching dirt and dust in the hidden recesses of machines and product, nothing equals a blast of air from a well directed nozzle. Vacuum-cleaners are all right for flat surfaces and hence excellent for floors, tables and benches, but it takes a jet with plenty of pressure behind it to remove oily particles and negotiate the irregularities of motors and machines. Dynamos and motors, for best results, and safety against fire, must be kept clean. How to dislodge and remove the particles which collect on the cores and windings was a knotty problem until the air-jet was tried.

"Textile mills, too, have of late adopted air-cleaning very generally. In no industry is the cleaning problem of greater moment. Lint generally is heavy from the fact that the atmosphere of textile rooms is, or always should be somewhat humid. Hence, if blown downward, the lint gravitates directly to the floor. Many machines can be cleaned while in motion, thus increasing the output efficiency."

When a mill is once "piped for air," other uses of it continually develop. For instance, in a textile mill, the air must be kept moist, and the air jet, combined with a water spray, has been found the best thing for the purpose. This plan also promotes cooling and ventilation. Stock is moistened by the same device, using a coarser spray. Again:

"Air is effective in removing not only solid particles, but undesirable liquid dirt as well. Close to the point of discharge, the force of an air-jet is so great, under even a moderate pressure, that jets will do the work of brushes, as in raising the nap on certain heavy fabrics and putting the finish on silk ribbons, or of buffing wheels as in polishing metal. In one

plant an invisible screen is thus formed across a door opening, which must be kept unobstructed, to keep out flies. Men can easily pass, but winged insects might as well try to get through a steel plate.

"Again, air pressure is one of the best ways of quickly and thoroughly forcing the water out of boiler tubes. It is also an excellent means of testing, not only boiler tubes for leaks, but any kind of piping. It searches out the minutest leaks, the location of which will at once be apparent if the pipe is coated with soapy water.

"Air is furthermore an aid to more rapid drying. In a varnish plant, air is introduced into the newly coopered barrels, after they have been glued, to make the glue set faster. It is also used to dry out the steel drums after washing.

"In several cotton mills the yarn, after it has been dyed, is dried by the same agency.

"Vacuum drying, where applicable, is, of course, more efficient than pressure drying. It is, in fact, about the quickest known method. This principle is taken advantage of very largely in textile mills to secure rapid drying of materials. A properly designed air compressor can create whatever vacuum is needed about the plant, as well as supply air at pressure.

"The agitation of liquids is another use to which the air jet principle has been successfully applied. Mixed paints, varnishes, and many chemical and dyeing solutions must be kept in constant agitation, or very thoroughly stirred by hand or mechanical means before drawing. A compressed air manifold in the bottom of the tank, with orifices facing downward to prevent sediment entering and stopping up the holes, is a most effective means of accomplishing this purpose. It can make the liquid fairly boil.

"A blast of compressed air also is an excellent means of blowing the factory whistle, if you carry no steam at night or over holidays. If the air-compressor is electrically driven, it can be started and stopped automatically to replenish the air supply should the whistle have to blow a long time. The United States Steel Corporation at Gary have a special compressed air whistle which they blow four times a day to call attention of all workmen to the subject of safety."—Literary Digest.

SOUTH SIDE.

The Easter program of Allen chapel A. M. E. church, both afternoon and evening, was well rendered and everyone present expressed themselves as being highly entertained. The church was beautifully decorated with Easter lilies, ferns and other plants.

We are sorry to note the severe illness of W. H. Scruggs of 2306 Madison street. We hope for him a speedy recovery.

The stewardesses of the A. M. E. church, South Side, will give a supper Wednesday night, May 3, at Odd Fellows hall on 25th street, between N. and O streets. There will be a program at 8 o'clock. The ladies will serve all the delicacies of the season. A good, full, round supper with all the sides for only 25 cents. The admission to program is free.

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Blanche Lawson	146
Hazel Hall	126
Oletha Russell	105
Ruth Jeltz	65
Pearl Ray	52
Olga Henderson	31
Ozelia Dunning	22
Anthone Edwards	No report

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