

THE RAG PROCESS.

The rags arrive at the mills in huge bales of rather unsightly appearance, and are placed in the storehouses until required. From the latter they are taken as needed to the sorting-room, where they are separated into various grades which are used according to the quality of paper to be made. At one time the sorting room was an important department, employing a large number of hands, but since the introduction of wood as the chief constituent of the paper, the glory of the sorting room has departed, much fewer hands being now needed there. The rags pass from it through a series of "dusters" and "cutters," from which they issue in masses of partially cleaned shreds. In the floor of the dusting room is an aperture through which the shredded masses are shovelled into a huge revolving iron boiler in the chamber below; and when the boiler is sufficiently full steam is let in by pipes from the engine house, and the boiler caused to revolve for some time at a high temperature. This process rapidly softens and cleans the rags, and the resulting pulp is placed in the "washing engine," and thence goes through the "bleaching engine." These engines, which are almost identical, are oblong bins about three feet deep. A partition runs lengthwise up the middle, but does not touch either end, so that the pulp contained in the bins can move around them. This it is made to do by the inclination of the bottoms, and by the passage round of a

CONSTANT STREAM OF FRESH WATER,

which, after circulating through and cleansing the pulp, is removed in its dirty state by an ingenious arrangement of wire screws and buckets. The bin also contains an arrangement of knives, which completes the decomposition of the rags. This washing and beating process results in making the finer qualities of pulp of a beautiful white color, and soft and velvety to the touch. In appearance, indeed, it resembles ice-cream more than anything else, and the bins containing the pulp seem to be a wholesale preparation for Sunday-school picnics. Only the very fine rags, however, can be brought to this creamy whiteness, and then only by the free use of chlorine. From the bleaching engines the clean pulp is flooded into the "drainers," where it lies for a while for the double purpose of bleaching and allowing the chlorine liquor to be drained off for use again, after which a second washing makes it ready for addition to the wood pulp, and the final preparatory treatment. To recapitulate: from sorting-room through the "dusters" and "cutters" to the boiler; thence to the "washing" and "beating" engines, and then to the "drainers." Thus are the rags brought to a fit condition for amalgamation with the wood pulp. Dirty, soiled and useless, apparently, these products of the slums and alleys of cities in a few hours come forth from their sharp purgatory as stainless as snow. But the work is as yet only half done, for they are still to be merged in far different material, and have still to undergo long torture before the end be reached.

PREPARATION OF THE WOOD.

But by far the most important constituent of the cheaper paper is wood, and the quantity used in the mills, in one way and another, is almost incredible. On the opposite side of the St. Francis from the mills, and behind the first terrace rising from the river, is the wood-yard, in itself an impressive sight. From the rising ground a clear view is obtained of the yard, and the eye travels wonderingly over hill after hill of wood. There are at times 16,000 cords of wood stored there; the mills annually consume about 10,000 for steam, hot water and paper pulp. The wood required for immediate use is kept in sheds at the factory, which are filled from time to time as their contents are exhausted. It