

Some Experiences in Managing During the Past Decade

From a Company Manufacturing Quality Products Which Require
the Experience of Long-Term Employment

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WHEN I undertook to appear before you this evening it was not my intention to commit my thoughts to paper, but as I began to reminisce I felt that perhaps for your protection it would be safer if I did so. There is at least this to be said in favor of a written address: that it provides definite terminal facilities which are sometimes lacking in an extemporaneous effort.

Practically my entire business experience, dating from 1892, has been with the company whose history, policy and methods I shall touch upon this evening in the hope that some thoughts may be presented that will be of interest or service to you.

In 1844 Dr. Samuel Stockton White, a Philadelphia dentist, pre-eminent in his day, recognized the inadequacy of the equipment available to his profession and had the vision to see that a sound business might be built in providing everything required by the dentist to alleviate oral suffering or effectively to restore masticatory function. On the theory that the best that could be made was none too good, he undertook, through the medium of the company which bears his name, to put his conception into effect to manufacture quality merchandise. Persistently and continuously through the intervening years, up to the very present moment, his successors have striven to maintain the ideals which were born with the company and which are more truly a part of its life than are its physical assets. It is my purpose later on to speak fully on the subject of maintenance of quality in manufacturing, but I should like first to establish a correct understanding of the status of the S. S. White Dental Manufacturing Company in the field in which it operates and, at the same time, to

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present a picture of the magnitude, and, if it is permissible to use the word at the same time, the minitude of its business.

The headquarters of the company are in Philadelphia; it has three factories and eighteen retail selling branches, with subsidiary or affiliated companies in Canada, Great Britain, France, Brazil and Australia. It has sole agents or dealer connections throughout the world, with resident representatives in many countries, for the distribution of its products. It is safe to say that there is not a graduate dentist in the world who is not familiar with the name "S. S. White." The age of the company and its widely flung interests would justify the assumption that it is engaged in volume production, but the facts are that ounceage and not tonnage is the rule that predominates in the manufacture and sale of dental merchandise. The reason for this is quite obvious: all of the consumable merchandise for dentistry is finally disposed of by temporary or permanent insertion in the human mouth; in fact, the field may be narrowed still further since it is only the teeth within the mouth which provide our final field of operation.

The products required to accomplish relief or to provide restorations are most varied: they are platinum, gold and silver; copper, zinc and tin; these and many other metals are used in alloys and in amalgams, in plate, in wire, in solder and in other forms. Rubber in soft and in vulcanite condition; shellac preparations; varnishes, waxes in various forms; modeling and impression compounds; plastic materials and porcelain teeth in a multitude of sizes, shapes and shades—these are a few of the items with which we have to deal. It is of interest to note, in connection with artificial teeth alone, that there is a proper form and size available for all types of faces, whether they

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be square, tapering or ovoid, and that in color, shades range from those to match the whitest tooth produced by the most popular dentifrice to the most discolored brown tooth of the most inveterate devotee of Lady Nicotine.

Burs, broaches, forceps, pliers, probes, scalers and elevators: these and many other items in a multiplicity of sizes and forms, together with appliances for regulating or straightening teeth, must all be made so they can either be used within the oral cavity or be left there permanently. Nor does the diversification stop here: the dentist calls into use anesthetics—nitrous oxid and oxygen, and combinations of oxygen and carbon dioxide. These gases require the use of inhalers and gas administration machines.

The hydraulic chair, with its many features of adjustable arms, headrest and footrest, is found in dental offices. There is also the dentist's stand with its electric mouth lamp, cautery, electrically heated spatulas, its hot air syringe, spray bottles, water and gas connections—everything immediately and conveniently at hand. Nor have we yet exhausted the list. There is the dental engine, the electric lathe, electric furnace, sterilizer, vulcanizer, and all the accessories accompanying such apparatus—verily a diversification that defies simplification.

I have purposely called your attention to these products of manufacture—and there are many more that I might list—to show that we have something of a task before us when we undertake quality production in all of them.

How can standards of quality be maintained in products so varied? Perhaps it is my function to attempt to answer rather than to ask this question. I shall try to do so, but I rely with more confidence upon those who will follow me to supplement this theme of quality production, in order that you may gather something valuable from this evening's session. Possibly you may find something of practical value in one or two typical instances of how we endeavor to maintain quality.

Obviously, it is necessary to treat each product as a separate problem, but underlying every case there are certain general principles which are common to all. These do not differ in our plant from those in any other manufacturing company striving to maintain a quality product.

First, the management must be absolutely con-

vinced that quality is the prime consideration in the product to be produced. It is hardly necessary for me to define quality to this audience. You know that it does not consist of any veneer or finish; that it does not mean any color or necessarily any form, but I think we can agree that it does mean, first and always, complete adaptability to the purpose for which the product was designed. With this qualification fulfilled, there should, of course, be included all those features which afford complete satisfaction of every esthetic desire.

Next, it seems to me, in attaining and maintaining quality it is essential that all those engaged in the production of any article should be imbued with a pride of performance. They should have a personal responsibility for maintaining the prestige which their company enjoys. And every employe should realize that the work of an inspection department is an insurance which guarantees the continuance of his or her employment—not an institution devised to deprive workers, through rejections, of their just compensation for labor performed.

A fundamental inspection department principle upon which rests the final responsibility for the maintenance of quality in all products is that it must be free and independent of the production department and in no way responsible to it. Men and management must agree that quality merchandise is the only kind of merchandise they care to produce.

Two products widely divergent in physical properties and in their processes of manufacture may serve to illustrate our approach to the problem of maintaining quality. I will use dental rubber as an illustration covering that class of products where compounding or mixing of ingredients is a factor in production, and where texture and color must be maintained in the finished product.

The first consideration is the selection of raw materials and some means of testing them which will insure uniformity. Dental or vulcanite rubbers, that is, those rubbers which are used as base plates or foundations on which to carry artificial teeth, are quite complex in formula composition, but for the purpose of this discussion I will use a simplified formula consisting only of rubber, sulphur and vermilion. Let us suppose that at some time in our history we have been successful, after research and experimentation, in producing a first