COMMITTEE REPORTS

REPORT OF COMMITTEE ON PATENTS AND TRADE MARKS.*

In accordance with the request of the Association, your committee has revised the United States copyright, patent and trade mark laws in so far as they specially apply to pharmacy and pharmaceutical chemistry, and herewith presents the proposed revision for your consideration and discussion.

The reason why you have asked your committee to make this proposed revision is for the purpose of eliminating certain objectionable features pertaining to these laws, relating either to the laws themselves or to their interpretation and application by the courts. The objectionable features referred to are as follows:

1. The copyright and patent laws, as they now exist or are interpreted or applied, fail in securing their object as defined in the Constitution of the United States, Article I, Section 8, Clause 8, which clearly states that the object of the copyright and patent laws is to promote progress in science and useful arts by granting to authors and inventors for limited times exclusive right to their respective writings and discoveries. It is contended that these laws, as they now exist, or are interpreted or applied, are a hindrance to progress in the arts of pharmacy and pharmaceutical chemistry for reasons hereinafter to be stated.

2. The trade mark law is not founded upon the clause of the Constitution serving as the foundation for the copyright and patent laws. As stated by the Report of the Commissioners Appointed to Revise the Statutes Relating to Patents, Trade and Other Marks, and Trade and Commercial Names under Act of Congress approved June 4, 1898, and published as Senate Document No. 20, 56th Congress, second session, printed by the Government printing office, Washington 1900, page 97, "It was supposed that the power of Congress to provide for the registration and protection of trademarks was derived from the clause of Section 8 of Article I of the Constitution, which provides for the promotion of 'the progress of Science and Useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their Respective Writings and Discoveries.' Nowhere in the discussion is found any reference to the clause of Section 8, which gives Congress the power 'to regulate Commerce with foreign Nations and among the several States and with the Indian Tribes.' So far as appears from the discussion of the bill, trademarks were regarded as analogous to patents and copyrights and their relation and importance to commerce appear to have been little understood."

Referring to the discussion of the Supreme Court in the trade mark cases, the same authority, page 100, says: "Criminal prosecutions being had under the statutes of 1870 and 1876 in the southern district of New York and the southern district of Ohio, and a difference of opinion having been certified to the Supreme Court on the question whether these acts of Congress on the subject of trade marks were founded on any rightful authority in the Constitution of the United States, the cases came before the court for review at the October term of 1879. (Trademark Cases, 100 U. S., 82.) The court showed with admirable clearness that because of the distinction between patents and copyrights and trademarks, pointed out in the decision, the power of Congress to enact the law could not be derived from that paragraph of Article I, Section 8, of the Constitution which relates to authors and inventors, since the right of ownership in trademarks is created by adoption and not by authorship or invention."

"A trademark," according to the same authority, "may consist of a name, symbol, figure, letter, form or device." "It is generally considered that a mark to be effective for its purpose should be as simple and striking as possible, should either consist of or have as a prominent feature some representation or word which will be readily caught by the eye of the purchaser and retained in his memory, so that when he comes to make a second purchase he will look for and readily recognize that particular mark. Such trade mark is, for instance, the representation of a star, an anchor, crescent, crown, cross, diamond, seal, triangle, or the word 'star,' 'arrow,' etc."

* Presented during the first session of the Section on Education and Legislation, Indianapolis meeting, August 29, 1917, by Chairman F. E. Stewart. After discussion, the report was referred to the General Session of the Association.

"The representation of a star or the word 'star' has been registered in the United States Patent Office as a trademark for nearly every recognized class of goods, having been registered nearly 400 times, indicating that, leaving out of consideration registrations to the same owner, made necessary by a change in the law, several hundred manufacturers and dealers have adopted and used that mark on some class of goods. In about 150 instances, the representation of an anchor or the word "anchor" has been registered.

"It will of course be understood that a star or an anchor or any other mark may be used by manufacturers of or dealers in different classes of goods without conflict. For instance, the use of a star as a mark for tobacco does not conflict with the use of a star as a mark for matches or dress braid. It is only when two persons put upon the market goods of the same class bearing the same mark that confusion in the mind of the public is liable to be caused or purchasers are deceived."

It is perfectly apparent from these quotations that in dealing with the subject of trade marks we have under consideration something entirely different than that of copyright and patent. It is objected that the trade mark is being deliberately diverted from its lawful purpose and that the trade mark law is being stretched to cover the same ground as the patent law with the idea of substituting the trade mark system of registration for the patent system, for the purpose of obtaining privileges not to be secured under the patent law and protecting and fostering unfair competition. It is therefore urged that the trade mark law shall be so revised as to prevent this abuse.

3. Another objectionable feature which pertains more particularly to the patent law is, that foreign countries are permitted to patent their inventions in the United States without being obliged to manufacture them in this country. Consequently, the United States patent laws are being used by foreign nations to build up commerce in their own countries to the injury of the United States. This objection might be obviated under treaties whereby foreign nations would grant to the United States the privilege of permitting American inventors to patent their inventions in foreign countries and manufacture them in this country—in other words, foreign nations should grant us the same privileges we grant them.

4. Quoting again from Senate Document No. 20, "Under the United States patent law no class of inventions is excluded from protection. The same is true of Great Britain and the British colonies generally. But many foreign countries exclude from protection one or more classes of inventions. The class of inventions which more than any other is excluded from patent protection is that relating to medicines. It is excluded in Germany, France, Austria-Hungary, Italy, Japan, Denmark, Norway, Sweden, Portugal, Russia and a number of other countries. Other classes of inventions excluded from protection in many countries are foods, chemical products and inventions relating to war material."

"Exclusion from protection of inventions relating to medicines or foods does not generally extend to those relating to processes or apparatus for their manufacture. In all foreign countries which exclude chemical products from protection, except Switzerland, inventions relating to chemical processes may be patented and in nearly all such countries it is expressly provided by law that a patent for a chemical process by which a new chemical product is made shall in fact cover such product unless it is shown that such product was in fact made by some other process.

"It has been urged before us, both at the hearings above referred to and in written communications laid before us that the United States law should be amended to exclude from patent protection both medicines and chemical products generally, at least so far as such inventions are the inventions of subjects or citizens of the foreign countries which exclude these classes of inventions from patent protection, and it has been contended that subjects or citizens of foreign countries should not be permitted to receive in this country patents for inventions which are not patentable in their countries."

5. It is claimed by the objectors that it is to the benefit of the entire community that the practice of pharmaceutical and pharmaco-chemical arts should be conducted in harmony with the scientific and professional requirements pertaining to the educational system of the country, so that coöperation may be secured between educational and commercial interests in promoting progress in science and in the useful arts; and that no system which permits individuals, firms or corporations, to exercise ownership or control over the names or articles of commerce can receive the sanction of the educational institutions of the country. The exercise of such ownership is a

menace to the entire educational system of the country which is apparent when the following facts are considered:

Every article of commerce must have a name of its own whereby it may be manufactured and dealt in, and that if such name is subjected to individual ownership then the educational machinery of the country becomes a great advertising bureau for the exploitation of commercially controlled products. Furthermore, as the information concerning these products appearing in advertisements is necessarily biased, the educational machinery of the country also becomes the means of teaching error, and, in the case of medicines, exploiting the sick room for gain.

6. It is further objected that the conditions now existing not only prevent coöperation between the educational and industrial institutions of the country, but also inculcate ill feeling, hypocrisy and deceit in the relations existing between the professional men and the manufacturers and merchants; between the scientists on the one hand and those who are utilizing the discoveries made by scientists for promoting the industries of the country. This is well illustrated by a statement made by Dr. W. W. Keen of Philadelphia, in a letter on the subject of so-called "ambrine," published in the *Philadelphia Ledger*, February 25, 1917.

Dr. Keen says, in the letter referred to: "In spite of a high opinion of this new and evidently successful treatment, I have a very serious criticism to make. Medicine is a profession not a trade. New methods of treatment, new drugs, new instruments, devised, discovered or invented by instrument makers or any other persons other than doctors, may be freely patented in order to reimburse and reward the inventor. But such methods, instruments, drugs, etc., devised, discovered or invented by doctors, our profession holds should be freely given to the world. A patient burned in Tokyo, Cape Town, Buenos Ayres, or Philadelphia should have all the advantages of such a beneficent discovery instantly and not have to send to Paris for it or go without. Such professional knowledge we hold should be at the service of humanity everywhere. The doctor gains his pecuniary reward from a larger reputation and a wider clientele. Besides this, his personal joy in so benefiting humanity is an incalculable reward."

It is claimed by the objectors that the position taken by Dr. Keen in this matter is the position taken by the medical profession throughout the world, and yet the medical journals are obtaining an enormous income from advertising these same commercially controlled products and if they are successful are obtaining an income and reputation by so doing, and therefore the position of the medical profession on the subject is very inconsistent to say the least.

It is not the province of your committee to condemn the medical profession for their ethics because the position of the profession on the subject is undoubtedly sound. Neither is it our province to condemn the profession for the ethical lapse referred to. However, as pharmacy is a part of medicine, and physicians and pharmacists are necessarily mutually dependent in relation to the preparation of medicines and their proper use in the treatment of the sick, pharmacists have a right to expect that the medical profession will not disregard its fraternal relations.

It is not our province to condemn the manufacturers of medicinal products who avail themselves of the privileges of our patent law or take advantage of the misunderstanding relating to the trade mark law, but it is the province of your committee to point out these conditions so that you may, as an Association, be placed in position to consider intelligently the proposed revision of the copyright, patent and trade mark laws we are placing before you for discussion.

Your committee has published in the JOURNAL of the Association, the proposed revision of these laws, and preambles and resolutions containing evidence in support of our suggestions in relation to the proposed revision. We are now placing in your hands reprints of the same that you may have the matter before you in the proper shape for consideration.

Your committee in making its suggestions as to the revision of the copyright, patent and trade mark laws has added to the laws as they now read, certain sentences, paragraphs and sections intended to overcome the objections above enumerated.

1. We have added to all three of these laws a paragraph in conformity with circular No. 19, issued by the Librarian of Congress stating that no copyright shall subsist in coined names, names of articles of manufacture, names of games or puzzles, names of substances, names or products or names of medicines.

2. We have made it necessary for the applicant desiring a patent relating to a chemical substance, medicine or food, to provide such product with a distinct name which will afterwards be

used by him, his executors, administrators and assigns as the principal title thereof on all labels, in all advertisements and in all literature relating to the product. We have also added a similar requirement to the trade mark law to prevent the registration of a trade mark for new articles of manufacture, chemical substances, medicines or foods, unless a distinctive name shall accompany the application in each instance, for use of those who would compete in manufacturing and vending the same article and also for the use of the public in purchasing same.

3. We have provided that the manufacturer of a patented product shall continue to produce the product by the patented process during the life of the patent and by no other process unless he shall apply for patent for same, and in case patent is granted for a new process he shall announce the fact in at least three prominent medical and pharmaceutical journals, respectively, calling attention to the new process and giving the number and date of patent thereof. The reason for this is obvious and will be apparent to anyone who has had any dealings with the methods sometimes employed by manufacturers of patented products.

4. We have proposed a section as an addition to the patent law containing a similar proviso to that contained in the copyright law relating to alien inventors, which we believe will exclude from patent protection inventions of subjects or citizens of foreign countries which do not grant similar patent privileges to the citizens of the United States. We have been informed that the section taken from the copyright law, which we have modified for the purpose, was written by the late president, Taft, whose knowledge of international law gives him a position of acknowledged authority.

5. We have suggested appropriate sections to cover the objection relating to the limitation of patent privileges, using for that purpose sections from the German patent law. The special paragraphs to which we wish to call your attention read as follows: * * * * *

"No patent shall subsist for, inventions relating to articles of food, or medicines, as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process or apparatus."

"If the invention relates to a process for the production of a new substance, all substances of the same chemical composition are considered as having been made by the patented process until proof to the contrary is given to the Commissioner of Patents."

6. As stated in our brief, your committee favors an amendment to the patent law requiring the Commissioner of Patents to submit all applications for patents relating to medicine and dietetics to the Committee of Revision of the United States Pharmacopoeia for approval before granting the same.

Professor Remington objects to this suggestion thinking it will throw too much work on the Committee for revising the Pharmacopoeia. However, your committee does not insist on this but believes that applications for patents relating to medicines and chemical substances should be referred to some kind of a committee or commission representing the medical, pharmaceutical and chemical professions, before such patents are granted. When you consider that a patent was recently granted for flavoring solution of epsom salts with peppermint and other essential oils, it is very apparent that there is, at present at least, no one connected with the United States Patent Office sufficiently qualified to decide what is meant by a "*new and useful* invention" in the meaning of the patent law, in so far as medicine, pharmacy and chemistry are concerned.

DISCUSSION.[1]

J. M. FRANCIS: What bearing has the proposed resolution upon the matter of process patents? What policy does the committee advocate?

F. E. STEWART: The solution of the problem in regard to product patents is contained in a provision of the German patent law which you will find in the proposed revision of the United States patent law suggested by your Committee and published as part of your committee's report in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, April 1917, under the head "Preambles and Resolutions Relating to Revision of the U. S. Copyright and Patent Laws." I hold a reprint of this portion of the report in my hand.

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[1] Discussions are reported in full instead of in abstract, as both sides of the question are thereby more clearly brought to the attention of the readers and for their consideration.

The provision to which I refer is as follows: "No patent shall subsist for * * * * * inventions relating to articles of food or medicines as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process or apparatus for the preparation thereof." "If the invention relates to a process for the production of a new substance, all substances of the same chemical composition are considered as having been made by the patented process until proof to the contrary is given." The object of this proviso is to promote research for the purpose of stimulating inventors to investigate patented processes for the purpose of improving them during the life of the original inventors' patent, so that when an improved process is discovered whereby the same product may be produced at less cost or of better quality, the public may have the benefit of it without awaiting the expiration of the original patent, which, according to our patent law, continues for seventeen years. The proviso is also intended to protect the original inventor from unfair competition. No person can enter the field without proving that his alleged improvement of the inventor's patented process is sufficiently valuable to warrant the Government granting him the right to compete with the original inventor. The burden of proof is upon him.

It is urged by those who oppose any change in our patent law in relation to product patents, that such a proviso as that contained in the German patent law is not workable in the United States because of a difference in our method of jurisprudence. Under our system of jurisprudence a person must be considered innocent until he is proved guilty, therefore, say the objectors, unless the product itself is so covered by patent that no person is permitted to enter the field in competition, no matter how great his improvement of the original process, an injustice would be done to the original patentee for the reason that the burden of proof would be thrown upon the defendant. There would be no way for the Government officials to find out whether the person claiming to have made an improvement had made such in fact, because his laboratories would not be open to the inspection of Government officials. He would therefore be in position to appropriate the original patented process and employ it in producing the same products, as there would be no way of proving infringement because the inventor of the alleged improvement could claim that his process was his trade secret and that no one had any right to enter his laboratory and prove to the contrary.

I took this matter up with one of the commissioners of the Patent Office and he laughed at the objection as absurd. He agreed with the suggestion made to the chairman of your committee, by the head of one of the large German chemical houses. This gentleman suggested that the United States patent law should be so revised as to make it incumbent upon the alleged inventor of an alleged new process to apply for a patent upon same before being allowed to use it commercially. This would place the Commissioner of Patents in position to pronounce upon the validity of the claim made by the alleged inventor of a new process for producing a patented product.

It has also been suggested that our patent law should be not only changed in such a manner as to conform with the proviso of the German patent law, but also that a provision should be added requiring that the inventor of an improved process for manufacturing a product already patented, should be forced to pay a royalty to the original inventor during the life of the original patent. It was pointed out that the original inventor blazed the way for others to follow and that it is no more than fair to reward him for his pioneer work in this manner.

Your committee in a footnote which you will find at the bottom of page 405, JOUR. A. PH. A., April 1917, stated: "The Committee believes that all ambiguity now existing in the law should be removed in the revision. Provision should also be made in the law so that the inventor of a new process can secure a royalty from the original patentee."

One of the reasons why your committee suggested that the proviso of the German patent law referred to should be introduced into the patent law of the United States is as follows: The object of the patent law is to promote progress in science and useful arts—in this instance in the science of medicine and in the useful arts of pharmaceutical chemistry and therapeutics. This it seeks to do by granting to inventors, for limited times, the right to prevent others copying their inventions, in exchange for the publication of full knowledge thereof whereby others may use the inventions freely for commercial purposes when the patents expire.

Coöperation between the educational and commercial institutions of the country is essential to promoting progress in science and the arts. Coöperation can never be secured between the

educational institutions teaching medicine and the commercial interests supplying materia medica products under a system of monopoly of the kind protected in this country by the patent law. The German government realized the necessity of leaving materia medica and food products open to competition so as to secure the necessary coöperation between the medical profession and its institutions of learning and the producers of materia medica products. It therefore limited the patents to processes only, leaving the products themselves open to competition in the manner already described.

The German patent law separates inventions relating to medicines and foods from other inventions because of humanitarian reasons which we in this country do not seem to recognize properly in this connection. It is because we do not recognize this humanitarian ideal of professional practice that we pharmacists and chemists are criticized by the medical profession, philanthropists and political economists. We are accused of exploiting the sick room for gain and spending our time in the endeavor to see how much money we can make out of a sick man.

In the American Therapeutic Society we have a by-law that no paper may be read or discussed concerning a commercially controlled materia medica product except to condemn it. This by-law was passed to protect the Society and thus protect the public from commercial exploitation by the representatives of commercial interests, who may come to its meetings for the purpose of reading papers advocating the use of monopolized materia medica products. If we expect to obtain the coöperation of educational interests of the country in promoting progress in the science of materia medica and in the useful arts of producing materia medica products and applying them to the treatment of the sick, it is absolutely necessary that we give proper attention to necessary professional and scientific requirements.

J. M. FRANCIS: There is no doubt that this committee has devoted a great deal of attention to this subject, and I want as an individual to do them all honor in saying, I think they are absolutely conscientious in these recommendations. However, this is a country in which everyone is allowed to indulge in his own opinions, and give his reasons therefor. There are some things in the recommendation of this committee I approve of most heartily. There are some that reflect a great deal of human nature. It is very natural that an American should demand for his own people the same privileges abroad, that the subjects of a foreign country receive from our government institutions. It is very natural to say that if a French patent is issued in the United States that we should force the French patentee to manufacture that product in the United States, because the French government would adopt the same procedure in the case of an American who obtained a patent in France. It is not upon this portion of the recommendation, however, that I wanted to speak to you, but I do want you to consider some phases of this matter very carefully, because I believe that the members of the American Pharmaceutical Association are eminently fair, and I do not think that we want to take any hasty action—we do not want to be stampeded. I should very much regret to see the influence of this great national association thrown to the advocacy of a course of procedure which I think would be very unjust. Now, please remember that the policy adopted by this committee, if allowed to pursue its normal course, looks to the support of this Association, which will finally and in the form of a recommendation to Congress, revise the present patent laws.

There is one feature I want to discuss particularly, and that refers to the granting of PRODUCT PATENTS. I am not going to touch on the copyright phase of the matter, because that is a matter of less importance. According to the Constitution, or the sections that were quoted, the ideas embodied therein were very broad and patriotic, that a man should enjoy the results of his own ingenuity or labor, that he should receive proper returns, and a certain length of time was assigned —I think seventeen years—during which inventors should receive this reward. Perhaps that is too long, and it might be wise to reduce that time, but I certainly protest that it will work a very great hardship if a man is denied the fruits of a product patent. Now, let us look at it in a common sense way. If I, as the result of months or years of study or chemical experimentation, succeed in producing something of a very great value in medicine or the arts—not being granted a *product patent*, I am granted a patent only on a specific *process*. It is a matter of common knowledge that in ninety-nine cases out of a hundred, the process that is worked out in accordance with the knowledge of chemistry existing at that time, will be a very crude and a very expensive one. I defy any man before me to cite a single chemical or pharmaceutical or medicinal substance manufactured by chemical reactions, the process of which was not improved very materially

within one or two or perhaps at the outside three years from the time it was originally patented, and its manufacture commenced. It is the most natural thing in the world that chemical processes should be improved, and that with the bringing to bear the minds of various chemists that improved processes should be worked out—processes differing very materially perhaps from the original process employed. Now, what would be the natural result? The man who spends his money, his brains and time, in working out a problem of this kind will soon be deprived of the result of his labor, because the attention of some other individual has been attracted to the value of this particular substance. The idea may have lain fallow for a hundred years, and the second or third man never thought of it; he never saw any inducement to spend any time or money on it; but when the original inventor has brought it forth and proved its value as a dyestuff or a medicine, then this second pirate—and you cannot call him anything better than a scientific pirate—sees the benefit, sets up in competition by using some other process, and is able to take advantage of this and reap the fruit of the inventor's intelligence and industry. Now, if this committee recommendation is adopted, the original inventor is absolutely helpless. A chemical discovery is not on the same basis as a mechanical invention. If I invent a machine for knitting socks, I have a product that will show its originality; I manufacture them of a certain shape and involving certain mechanical processes and parts. I place my machine on the market. If another man places a knitting machine on the market which embodies the principle involved in my machine it is evident at a glance, and it does not require any proof; it only needs that a skilled man look at it and the infringement is apparent and the inventor has his recourse.

Suppose I should produce "phenacetin" and it had not been discovered before. We now know it is of immense value. I introduce it for the first time, but I have nothing except a process patent. I begin to manufacture it; Smith knowing its value, erects a plant, throws a sixteen-foot brick wall around it, and begins to manufacture it. How am I going to prove that he is not infringing my process. The Committee says, "Bring Mr. Smith into court and force him to prove that he makes 'phenacetin' by a different process." That is the law, as I understand, in Germany and that is the procedure the committee recommends in the United States.

Gentlemen, the people in the United States do not think like the people in Germany. Their whole code of legal procedure is different; their method of thought is different, and a thing of that sort does not appeal to American people. In this country we look upon a man as being innocent until he is proved guilty. By this process we are going to upset our institutions and adopt the un-American idea of assuming a man is guilty until he proves his innocence. But, wholly aside from that, you are throwing around the original inventor, difficulties that it is almost impossible to overcome in fighting this underhand competition of a second man who wants to infringe his process. It is unethical; it is un-American; it is essentially wrong.

There is another phase of this matter—You cannot take capital by the scruff and force it to invest in manufacturing projects. All great achievements along chemical lines are brought about by the expenditure of money. You cannot buy brains without money, and, brains are commanding more money every day. You have to get a man with brains and training and you have to give him the proper apparatus and equipment and environment, and all that calls for the expenditure of money. If you individually have five thousand dollars or fifty million dollars to invest, where are you going to put it? Are you going to place it in backing research of this kind, looking for new technical, chemical or pharmaceutical products, where you have no more protection than is offered by this committee's recommendation, or are you, going to put your money in harvesting machines or soap or sardines or hay and the thousand and one other things that will give you a more assured income? This is not a matter of theory. It is a hard, cold fact. Money is going to the enterprise where it has the best protection and yields the largest income. Such things are not done as a matter of sentiment, I am sorry to say. Money is behind them and money is the driving force all through. It requires money, money, money all the time to carry out work of this kind.

Now, just one more thought. This great war in Europe has taught us one thing, if nothing else, and that is the fact that we are absolutely, hopelessly, shamelessly dependent on Europe for pharmaceutical, medicinal and chemical products of all kinds. Where do you get all those things —even common chemicals? From Europe. You cannot today place in the United States an order for immediate delivery for as much as two tons of ordinary precipitated sulphur. Isn't it ridiculous? I know of but one firm in the United States who are making precipitated sulphur.

Cinnamic acid used to sell for two dollars per pound, imported from abroad, and yesterday I saw a quotation demanding a contract for a 1000 pounds at $25.75 a pound, and there is only one firm today making cinnamic acid; up to two years ago there was not a pound manufactured in the United States. You could not buy a pound of diethyl aniline in the United States two months ago, and there is only one firm today making it.

We must pay a protective price to a reasonable extent to build up our chemical industries. The United States has made itself the wonder of the world because its metal industries have received proper protection in the form of a protective tariff. Back in the eighties a few manufacturers in the United States began the fairly successful production of aniline dyes. They had the proper protection at that time, and many thousand dollars were spent in promoting this industry. A change in administration and the selfishness of the men who used the dyes wiped out this protection and the color industry in the United States practically died. Now we wish we had it, and have not. We might have had a color industry today that would have made us independent of the world if this protection had not been removed. You remember a few years ago when the farmers demanded the protection of beet sugar. They claimed that it would employ labor and result in cheaper sugar. They claimed it would be to the interest of the whole United States to do so. A lot of us did not think so, and it looked as if the beet sugar industry was about to be wiped out not so long ago. Now, what is the result? The protected beet sugar industry stands to save the United States millions of dollars. I mention this to show that by paying a little more for a few years, it comes back like bread upon the waters, back to the American consumers to the extent of millions of dollars. The same thing applies to the protection of chemical and pharmaceutical substances based on chemical processes.

I think I have said enough to show that this proposal calls for most careful consideration. There are two sides to it and I do not believe it would be a wise move for this association to advocate the abrogation of product patents.

ALEX. M. ROVIN: This subject, I understand, invokes two schools of thought—the materialistic and the ideal school. It is true, in the light of history, we know that the incentive which modern materialistic thought has recognized is money, money, money; but on the other hand in the light of history, impartially speaking, we do know that in the development of every field of science, if has not been from an incentive of money. Anyone that knows anything about general history as applied to the sciences and arts, knows that whenever there has been a science developed in its slow but sure process, it has been principally through the natural desire of man to contribute something to general society. In this day we live in an age of extreme materialism and the law of competition is very intensive and very acute, and this particular tendency has compelled society, especially of the United States, to make an effort to protect the ingenuity of man. That is all true. To our material advantage, the financial advantage, the recommendations of Doctor Stewart are contrary, but in the light of real human instinct we must not forget that every stage of society is displaced by a new stage, and let us look forward to this fact, that commercialism as we understand it today, as we practice it today, is merely a passing stage of the game in human society, and the idealistic school will eventually predominate. The incentive to the progress of science is not money only. This is the answer I would like to make to the statement of Doctor Francis. I am convinced that protective laws are essential, but there are better ways and methods to employ in order to go ahead in the field of scientific endeavor. I endorse the moral and ideal spirit of Doctor Stewart and from a material standpoint I accept the reasoning of Doctor Francis.

FRANK R. ELDRED: Doctor Francis has stated in a very forceful way his individual views of the subject. I want to add a few words which represent my personal views, and at the same time point out the attitude of the American Chemical Society which I represent as delegate to this Association.

In order to show you the different conclusions in regard to two points covered by the report of this committee, that is to say, the subject of product patents and of a compulsory working clause, I want to tell you about the work of the committee on patents of the American Chemical Society. This committee, consisting of Dr. Leo. H. Baekeland, Dr. B. C. Hesse and Dr. William Grosvenor, has gone into the matter very thoroughly. They have not only brought in recommendations and made statements concerning these points, but Doctor Hesse has backed them up with a very extensive compilation of statistics.

We must consider two stages of the problem, the theoretical and the practical. Theory,

as we all know, is a very good thing, as a starting point, but you are aware that if a number of chemists get together to discuss any point of chemical theory, some very striking differences of opinion will immediately arise, and then they must secure experimental evidence to prove their theories. After all, the theory is only good in so far as it enables you to test it and thus establish the facts. Now, that is exactly what has been done, in the compilation of these statistics to which you can all refer in the *Journal of Industrial and Engineering Chemistry* for April and November 1915. You will find I think thirty or forty pages of statistics and discussion. If you will take the time to go over that mass of statistics carefully I think you will have a very clear view of this whole question. Compulsory working, in theory, is a beautiful idea, but these statistics will prove to you that where this theory has been put into practice, it has been a failure. If I had time, I might offer an explanation of the failure of such legislation, but it has been proved that compulsory working has wrought injury to the industries of the countries where it has been tried, rather than good as you might theoretically expect it to do. That was a case of testing a theory and proving it to be fallacious.

Now in regard to the product patent for chemicals, the argument is often advanced, and it is perhaps the chief argument, that the great chemical industry of Germany was built up under the protection of process patents only and therefore that system would be a good one for us to adopt. However, if you will look into the German process patent and the manner of granting patents on chemical processes in Germany, you will find that the product itself is more completely protected in Germany than it is by our American product patent. That may have something to do with the fact that the chemical industry was built up to such a wonderful extent along certain lines in Germany—the fact that they had even greater patent protection than we had in this country.

Another argument which is advanced is that the product patent works a hardship on the American manufacturer. This is really a ridiculous statement. As Doctor Francis pointed out, the only way in which the American manufacturer is willing or able to develop the chemical manufacturing industry in this country is under complete patent protection. The fact is largely overlooked that when you try to cover drugs and medicinal chemicals, you cannot stop at medicinal chemicals, and some of the people who favor the abolition of the product patent fail to point out that when you hit the medicinal chemicals, you also hit a very large number of technical chemicals. In fact, it would affect all organic chemicals, and their manufacture would never be developed to any great extent without proper patent protection.

The justice of granting to the inventor of a chemical product the same protection you would grant to the inventor of a mechanical or electrical contrivance is so apparent it hardly needs to be mentioned. The American Chemical Society, with ten thousand members, including both university and industrial men, has favored and is advocating very strongly the continuance of the product patent, and also opposes compulsory working. This will show you what the chemists of the country who have made a very thorough study of chemical patents think of the subjects under discussion.

I do not understand Doctor Stewart's idea in regard to the coöperation between the practical and the educational pharmaceutical men. In the American Chemical Society the coöperation between the educational men and industrial men is very close and the educational men are just as much united in favoring thorough patent protection as the industrial men. It seems to me that this Association should be very careful, to take no action in opposition to the position of another association which has studied the subject of chemical patents as carefully as the American Chemical Society has done.

As you know, the manufacture of dyes is now being taken up extensively in this country and the manufacturers are very much opposed to such changes in our patent laws. They feel that it will jeopardize the dye industry in this country if they do not receive the protection of product patents. In discussing this matter we also frequently overlook the fact that previous to the European war the value of the products of a chemical nature which we exported to Germany was greater than the value of the chemical products which we imported from Germany. Moreover the value of the German patents held by citizens of this country is greater than the value of the United States patents held by citizens of Germany and therefore in discussing chemical patents we must take into consideration the effect of any proposed legislation upon the patent system as a whole.