ing the period specified for its exercise. Petitioner has advanced no such theory and cites no authority which would support it.

As we have said in the *DeCastro* case, the duty of the Court of Appeals and of this Court to examine and appraise local law in cases brought for review from the insular courts cannot ordinarily be discharged summarily. But full argument in this case has not developed any issue of Puerto Rican law, or any question of the deference rightly to be paid to the decisions of the highest court of Puerto Rico, so substantial as to preclude the summary disposition made of this case by the Court of Appeals.

Affirmed.

UNIVERSAL OIL PRODUCTS CO. *v.* GLOBE OIL & REFINING CO.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

No. 392. Argued March 3, 1944.—Decided May 29, 1944.

1. In resolving a conflict between Circuit Courts of Appeals which, as to the same patent and upon substantially the same facts, reached conflicting conclusions as to infringement, this Court will reexamine concurrent findings of the District Court and the Circuit Court of Appeals. P. 473.
2. Patent No. 1,392,629, to Dubbs, for a process for producing gasoline and other lighter oils from heavy crude oils, *held* not infringed by a process which, in the step corresponding to the B tubes of Dubbs, relies upon substantial vaporization. P. 484.

   "Without substantial vaporization" as used in the Dubbs patent means that the generation and release of vapors in the B tubes is to be avoided so that the charge will enter the C tubes for cracking as nearly as may be in the liquid phase. P. 482.
3. Egloff Patent No. 1,537,593, for an improvement on the Dubbs process for producing lighter from heavier oils, *held* invalid for want of invention. P. 486.

137 F. 2d 3, affirmed.

CERTIORARI, 320 U. S. 730, to review a judgment which, on appeal from a judgment of the District Court, 40 F. Supp. 575, in a suit for infringement of patents, held the patents not infringed.

Messrs. William Dwight Whitney and *Charles M. Thomas,* with whom *Messrs. William F. Hall* and *Frederick W. P. Lorenzen* were on the brief, for petitioner.

Messrs. Thorley von Holst and *J. Bernhard Thiess,* with whom *Messrs. Sidney Neuman* and *Robert W. Poore* were on the brief, for respondent.

MR. JUSTICE REED delivered the opinion of the Court.

The petitioner sued the respondent for infringement of United States Patents No. 1,392,629, dated October 4, 1921, and No. 1,537,593, dated May 12, 1925. The former was issued to Carbon P. Dubbs; the latter, to Gustav Egloff. These patents cover the Dubbs process for converting heavy crude oils to lighter oils, especially gasoline. The claimed infringement arises from the respondent's use for the purpose of such conversion of the "Winkler Koch process" in apparatus designed and installed by the Winkler Koch Engineering Company. The district court dismissed the bill on findings of fact to the effect that Patent No. 1,392,629 was valid but not infringed, and that Patent No. 1,537,593 was invalid, without findings on the issue of infringement.[1] The majority of the Circuit Court of Appeals found both patents not infringed and did not pass on their validity; Judge Lindley was of opinion that the Dubbs patent was infringed but that both patents were invalid.[2] The Court of Appeals for the Third Circuit

[1] *Universal Oil Products Co.* v. *Globe Oil & Refining Co.,* 40 F. Supp. 575.

[2] *Universal Oil Products Co.* v. *Globe Oil & Refining Co.,* 137 F. 2d 3.

found the same patents to be valid and infringed by the use of a process substantially similar to respondent's in *Root Refining Co.* v. *Universal Oil Products Co.*, 78 F. 2d 991. To resolve the conflict thus presented we granted certiorari, 320 U. S. 730.

Where the questions presented by the contested claims of infringement and validity are purely factual, this Court ordinarily accepts the concurrent conclusions of the district court and Circuit Court of Appeals in these cases. *Goodyear Co.* v. *Ray-O-Vac Co.*, 321 U. S. 275. But in resolving conflicting views of two Circuit Courts of Appeals as to a single patent, we are obliged to undertake an independent reexamination of the factual questions. *Sanitary Refrigerator Co.* v. *Winters*, 280 U. S. 30, 35–6.

The patents and the allegedly infringing process concern commercial methods for converting petroleum, as it is found in nature, into the gasoline in everyday use as motor fuel. The experts who testified in the district court have stated some of the theoretical background of the processes used, and a brief summary of this material may facilitate understanding of the process involved.

Layman and chemist alike are of course familiar with the conception of the atoms of "chemical elements" as the basic building blocks of ordinary chemical compounds.[3] The atoms of the "elements" have the capacity to combine with the atoms of other elements to form the molecules of "chemical compounds," whose properties seem to depend directly upon the nature of the molecule. In the field of oil chemistry, the outstanding fact is the extraordinary ability of carbon and hydrogen to combine with each other into molecules containing widely varying numbers of carbon atoms with different proportions of hydrogen atoms in an almost unlimited number of different

[3] This case does not require consideration of any theory as to the internal character of the atom.

structural arrangements. These combinations, generically termed hydrocarbons, are present in great variety in crude oil.

The hydrocarbons differ widely from one another in their physical properties, particularly in the property of volatility, which is of prime importance in motor fuels. As one might expect, the hydrocarbons composed of large molecules with many carbon atoms are heavy, sluggish liquids with relatively high boiling points; they are not suitable for use as gasoline. Those with smaller molecules are much more volatile—indeed, the very smallest are gases at ordinary temperatures.

The initial step in the preparation of gasoline from crude oil involves no molecular change; it consists merely in separating the light hydrocarbons in the natural mixture from the heavy hydrocarbons. This step is accomplished by heating the oil until it vaporizes and then carrying the vapors through a device familiar to industrial chemistry under the name of a fractionating tower. Such a tower is in effect a series of condensers in which the vapor mixture is cooled and the liquid condensate drawn off in separate steps. First the high boiling point constituents, reaching a liquid phase after relatively little cooling, are condensed and withdrawn; this process is repeated on the remaining constituents in successive steps as the vapors cool, until there remain only those low boiling point hydrocarbons suitable for use as gasoline.

By fractional distillation alone, a typical sample of Mid-Continent crude oil might yield approximately 25% gasoline, 5–7% kerosene, 30% gas oil, and a balance of 38–40% fuel oil. The fraction remaining after the distillation of gasoline or gasoline and kerosene is termed "topped crude."

For many years the commercial petroleum industry carried the production of gasoline from crude oil no farther than this initial step of separating it from the mixture.

But with the introduction of the automobile, the demand for gasoline increased rapidly, and it became necessary to develop commercial apparatus for the conversion of heavy hydrocarbon molecules to light hydrocarbon molecules by the chemical process known as "cracking." [4] Chemists had long known that by heating the heavier hydrocarbons to temperatures of the order of 750–900° Fahrenheit, it was possible to decompose the heavy molecules into lighter molecules with fewer carbon atoms, with the maximum decomposition resulting from fairly prolonged application of heat.[5] The breakdown of the heavy molecules into lighter ones was accompanied, however, by a concurrent phenomenon—namely, the formation of even heavier hydrocarbons and the deposit of solid matter called "coke" or "carbon." Likewise, at the temperatures used the oil boiled, and if the vapors were not released (and they could not be if heat was to be applied for a long period of time), high pressures developed in the still. And as the cracking operation yielded products of increasing volatility, this pressure would, apparently, rise as the reaction progressed.

The engineering problems involved in the reduction of the laboratory knowledge of cracking to commercial practice were formidable, since the pressures and temperatures employed carried severe risks of fire and explosion. The first commercial process was introduced about 1913—the so-called Burton process. Burton heated the charge—gas oil—in a simple tank, or shell still. The tank was not continuously fed; a charge of 8,250 gallons was pumped into it and brought to a temperature of 700–750° over a

[4] See *Standard Oil Co.* v. *United States,* 283 U. S. 163, 167.

[5] It has been stated, however, that cracking is an almost instantaneous reaction in the vapor phase processes carried out at temperatures above 950° F. See de Florez, Profits from Cracking in Vapor Phase, XIX National Petroleum News No. 49 (Dec. 7, 1927), pp. 32, 33.

period of some 12 hours under autogenous gas pressure of 75 pounds. The cracking operation was then continued for 24 hours. The vapors liberated in the still were conducted through an inclined line to an aerial condenser, where the heavier and less volatile vapors were liquefied and drained back into the still through the same vapor line, there to be mixed with the unvaporized residue and subjected to further cracking. This first fraction of the vapors was called "reflux condensate"; the unliquefied vapors were carried to a second condenser and liquefied as "pressure distillate," a liquid convertible by further refining operations, not here relevant, to commercial gasoline.

The coke deposited during cracking tended to cause uneven heating of the shell still, with resultant formation of weak spots and danger of explosion. Consequently, it was necessary to shut down the still after about 24 hours of cracking to permit the coke to be cleaned out. The cleaning and pre-heating processes consumed about half the operating time; the gasoline yield ranged only about 25–28% of the gas oil charge; and the menace of explosion was serious. The Burton process was modified and improved somewhat in 1915 by the introduction of the Burton-Clark process, which differed in that it did not apply heat directly to the shell still, but instead circulated the oil in the still by convection through a separate heating coil. This improvement increased the yield to some 30–32%. The Burton-Clark process constituted the general industrial practice at the time of Dubbs' patent.

Chemical engineers in the refining industry were engaged in continuous research looking to the solution of the coking problem and the development of a process which might operate continuously, without wasteful periodic shut-downs of expensive plant equipment. The processes in suit are among the results of their efforts.

Dubbs Patent No. 1,392,629, the alleged infringement of which forms the basis of this action, covers a process first

demonstrated in a pilot plant at Independence, Kansas, in 1919. The oil charge is fed through a nest of heated tubes—called "B tubes"—about four inches in diameter—a heating process not unlike that used in Burton-Clark. The heated oil is then delivered to tubes of about ten inches diameter—"C tubes"—which are only partly filled with liquid oil. The C tubes are insulated, but unheated or only lightly heated to prevent the escape of heat by radiation. Here the vapor generated as the result of heating and cracking passes from the liquid oil and is carried to vapor line condensers of the same general kind used in the Burton system. The first vapors to condense—that is, the reflux condensate—are returned to the B tubes for further heating and cracking; the lighter vapors are carried to a second condenser to become gasoline. The unvaporized residue of liquids and suspended solid particles in the C tubes is continuously withdrawn from the system; thus only the light oils of the reflux condensate, which have but a limited tendency to form coke, are recycled through the B tubes. Such deposit of coke in the lightly heated C tubes as occurs involves no marked danger of explosion, and it precludes clogging of the smaller superheated B tubes. Gas oil subjected to the Dubbs process has been made to yield 40–50% gasoline, and continuous runs of from ten to twenty days are usual.

In the commercial practice of the Dubbs patent, a simple vapor separation tank usually takes the place of the C tubes.

The points of similarity and dissimilarity to the Burton-Clark process are worth noting. Burton-Clark subjected to prolonged heating the unvaporized hydrocarbons as well as the light reflux condensate. Since these heavy hydrocarbons have the greatest tendency to form still heavier oils and to deposit carbon, their withdrawal from the apparatus was an important advance. The continuous feed system of the Dubbs apparatus was also regarded as an

improvement on Burton's batch process. Burton-Clark circulated through the heating tubes the heavy oils formed during cracking; Dubbs permitted only a mixture of fresh oil and reflux condensate to pass through his furnace coil.

The Egloff patent covers an improvement on the Dubbs process.

As we pointed out at p. 474, *supra,* the initial step in the separation of gasoline from crude oil is fractional distillation; then gas oil, the fraction next below gasoline and kerosene, is subjected to cracking in a special apparatus. The fuel oil fraction has such a strong tendency to form very heavy hydrocarbons and coke that it is undesirable as a charge for the high-temperature heating coil in the cracking systems.[6] What Egloff proposed was a relatively mild heating of the heavy oils in a separate furnace—thus fuel oil or topped crude might be used as a charge. The temperature and pressure would be sufficient to occasion a mild cracking; the vapors might then be delivered to the same vapor separation tank used with the high-temperature heating tubes, and the reflux condensate from these vapors might be used as the charge for the high-temperature tubes. The substantial effect is to subject fuel oil or topped crude, from which the charge for a Dubbs plant was often separated by separate distillation, to a distillation and mild cracking operation, using the vapor separating tank and the condenser apparatus of the Dubbs plant instead of using separate apparatus to prepare the Dubbs charge.

The apparatus of respondent's Winkler-Koch process closely resembles the apparatus of the Dubbs-Egloff system. Oil is heated in either the high-temperature or low-temperature furnace, depending on the kind of oil used;

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[6] Fuel oil can be directly charged to a Dubbs system, but the run must be greatly shortened.

the heated oil is delivered to a vapor separation tank; the reflux condensate flows back to the high-temperature coil for further cracking.

The differences between the processes, as distinguished from the apparatus, are more marked. Dubbs taught the heating of the oil charge in the B tubes "without substantial vaporization." Thus the illustrative run in the patent suggests the heating of oil to a temperature of 750° to 860° F., with a pressure of about 100 pounds to the square inch, resulting from vaporization, maintained in both B and C tubes. In the respondent's process, oil enters the heating coils at a temperature of 590° and leaves at a temperature of 940°; a pressure of 500 pounds to the square inch is maintained in the heating coil. Some 85% of the oil by weight and 95% by volume reaches a vapor phase in the heating coils. The oil in mixed liquid and vapor phase enters the vapor separation tank through a pressure reduction valve, so that the pressure in the tank is 26 pounds as compared to the 500 pounds of the heating coil.

The courts below believed that these differences were sufficient to prevent the respondent's process from infringing the claims of the Dubbs patent. A typical claim is Claim 5, as follows:

"5. A continuous process for cracking hydrocarbons consisting in passing the same in a stream in an advancing direction from an inlet point to a discharge point separated and entirely disassociated from the inlet point, subjecting the material in the first stage of its travel to a cracking temperature while preventing substantial vaporization, affording a vaporization space above the stream during the second stage of the travel thereof to said discharge point, taking off the vapors from said vapor space and subjecting them to a condensing action, discharging into the stream at a point remote from that where vaporization occurs a portion of the condensates and maintain-

ing a vapor pressure on the material under treatment during distillation and condensation."

It is apparent that the issue of infringement of the Dubbs patent turns on the construction to be given the words, "without substantial vaporization," as they are used in the claim. The petitioner argues that what is claimed is that there is no release of vapors from the liquid in the B tubes; the respondent argues that it is meant that no liquid oil passes into a vapor phase in the B tubes, that is, that there is no vapor generation in the B tubes.

Either construction would be consistent with the operation of a cracking process. By applying sufficient pressure, it is possible to prevent the generation of vapor from oil even at the relatively high cracking temperatures. The gasoline yielded by cracking oil in liquid phase is chemically different from that yielded by vapor phase cracking, and at the date of the patent, the liquid phase product was preferred. The yield of vapor cracking was a malodorous yellow mixture requiring additional refining operations to make it marketable; however, since 1919 gasoline formed by vapor cracking has become more highly regarded because of its superior antiknock characteristics.

The parties are wholly at odds as to the nature of the process taught by Dubbs in his patent specifications. The petitioner contends that cracking takes place in the B tubes with resultant generation of vapor, and that in the C tubes the vapor is merely set free from the liquid oil. The respondent argues that the only function of the B tubes is to furnish enough heat to cause cracking, and that the oil actually cracks while it is in the C tubes. The cracking process, it will be remembered, requires that the oil be kept at a high temperature for some time if substantial gasoline is to be formed, and the respondent compares the process taught by Dubbs to the familiar fireless cooker, in which a vessel with heat-keeping qualities is

first heated and then removed from the flame while cooking goes on with the heat first supplied.

The patent several times refers to the B tubes as "cracking tubes" or as the "cracking zone." In its relevant parts, the patent describes the process in the following terms:

"Describing the operation of the process, the material to be treated is drawn from any suitable source by means of the pump J and discharged therefrom through line J^1 into and through tubes B and during the time they (*sic*) are passing through said tubes, they (*sic*) are subjected to sufficient heat to cause the desired amount of cracking. Said oil is then passed into the tubes C which are only partially filled with the oil and as the oil passes through these tubes, there is a liberation of vapors from same and which vapors pass up through the vapor tubes D, E. . . .

"A light fire may be maintained under the tubes C as shown in the drawings or said tubes may be heavily insulated . . . to prevent loss of heat by radiation and thereby dispense with the fire under the tubes C. . . . The per cent. of vapors generated from the oil as it passes through the tubes C will depend on the amount of heat acquired by said oil while passing through the 4″ coils."

The petitioner refers, also, to Claim 5, which specifies "a vaporization space above the stream" in the C tubes. These words, we are told, must necessarily refer to a space in which vapors are released, not generated. This does not advance petitioner's argument, however, as the space referred to, as shown by the subsequent words of Claim 5, is simply space to hold released vapor, that is, "vapor space." Neither vapor separation nor vapor generation takes place in the space above the stream.

Respondent too supports its argument that not even generation of vapors was envisaged by the Dubbs patent limitation against "substantial vaporization" by reference to the patent. It points out that as the patent does not define "vaporization," the word is used in the accepted

sense of chemical nomenclature. The use of the word "vaporization" in the patent to show what takes place in the C coils is stressed by respondent as indicative of the meaning with which the word was used by Dubbs.[7] The respondent says this means generation as well as release of vapors because the patent says, "The per cent of vapors generated from the oil as it passes through the tubes C will depend on the amount of heat acquired by said oil while passing through the 4″ [B] coils." It is said that the patent consistently describes the charge in the B tubes as "oil," and never as vapor or mixed oil and vapor or foam.

The petitioner argues that the reading of the patent which respondent asks would result in an inoperative process under the conditions of the illustrative run. It seems to be conceded that oil heated to 750° at 100 pounds pressure would not vaporize, but in order for cracking to take place in the C tubes, it would be necessary to furnish some additional heat to replace that consumed in the cracking reaction. At the higher temperatures suggested in the illustrative run, much higher pressures than the 100 pounds called for become necessary to preclude vaporization, although the heated oil would, in cooling from the higher temperatures, provide the heat necessary for the cracking reaction in the C tubes. But even though experimentation at low pressures would show generation of vapor in the B tubes, this will not control the language of the claim.

We agree with respondent's position as to the teaching of the patent. We are of the view that "without substantial vaporization" as used in the patent means that the generation and release of vapors in the B tubes is to be avoided so that the charge will enter the C tubes for

[7] "The heated oil then passes to the 10 inch C coils which are maintained about half full of oil and wherein vaporization takes place."

cracking as nearly as may be in the liquid phase. It clearly appears from the history of Dubbs' application in the Patent Office that the use of the phrase was purposeful. It was inserted after the Patent Office had disallowed claims without the phrase and it was evidently added to clarify the description of the steps of the process and the claims of novelty. Cf. *Exhibit Supply Co.* v. *Ace Corp.*, 315 U. S. 126, 136. The importance is evident from the history of the trade since, as pointed out above, at the time of Dubbs' application gasoline obtained by cracking the charge in liquid phase was more desirable than the gasoline obtained from vapor phase cracking.[8]

The distinction made by the controverted phrase is of practical importance. Dubbs patented a process for converting hydrocarbons through cracking. The difficulty in the prior art was carbon deposit or coking. If in this process the cracking operation is pressed to substantial completion in the B tubes, the patent seems to fail to teach a method of preventing coking in those tubes. Coke there will certainly be as a result of the cracking; what would prevent its deposit? It may be possible to prevent the deposit of carbon by maintaining a rapid turbulent flow; indeed, we are told that this is the device used in the commercial application of both parties' processes, and Behimer, another engineer working in the cracking field, attributed the failure of a similar apparatus (see Patent No. 1,883,850) to the want of a pump of sufficiently high pressure to maintain the necessary velocity of flow. But the patent, while it calls for a pump to inject the charge into the B tubes, does not point out the need of using rapid flow for this purpose; the pressure within the apparatus is expressly referred solely to vaporization. One building a device according to Dubbs' teaching might, if he read

[8] But see *Universal Oil Products Co.* v. *Globe Oil & Refining Co.*, 40 F. Supp. 575; 137 F. 2d 3.

the patent as teaching that cracking was to occur in the B tubes, content himself with using relatively short B tubes and a correspondingly slow flow to furnish cracking time. That procedure would presumably lead to coking; the patent, however, does not describe how that result may be avoided.

There is a reason of controlling importance why the protection of the Dubbs patent must be limited to a process in which cracking takes place largely in the C tubes.

As a reward for inventions and to encourage their disclosure, the United States offers a seventeen-year monopoly to an inventor who refrains from keeping his invention a trade secret. But the *quid pro quo* is disclosure of a process or device in sufficient detail to enable one skilled in the art to practice the invention once the period of the monopoly has expired; and the same precision of disclosure is likewise essential to warn the industry concerned of the precise scope of the monopoly asserted. *Béné* v. *Jeantet,* 129 U. S. 683, 685–86; *General Electric Co.* v. *Wabash Corp.,* 304 U. S. 364, 368.

In a process patent in the refining of oil, preciseness of description is essential. It is a crowded art. Hope for success for new patented processes with slight variations from those in use caused large expenditures in testing their efficiency by important companies with staffs of specialists who were skilled in the art. Among the processes cited to us as prior art advances on Burton-Clark, those of Hall Patent No. 1,175,910, Alexander Patent No. 1,407,619, and Behimer Patent No. 1,883,850 were embodied in experimental plants, and the testimony is replete with references to such other contemporary experimental or working cracking systems as the Holmes-Manley, Fleming, and Cross processes. The claim is the measure of the grant. *Smith* v. *Snow,* 294 U. S. 1, 11. The claim is required to be specific for the very purpose

of protecting the public against extension of the scope of the patent. *White* v. *Dunbar,* 119 U. S. 47, 52; *Minerals Separation* v. *Butte Mining Co.,* 250 U. S. 336, 347; *Knick* v. *Bowes "Seal Fast" Corp.,* 25 F. 2d 442, 443. The applicants for the patent thought the phrase "without substantial vaporization" in the B tubes important. While varying the details of a process does not avoid infringement, *Tilghman* v. *Proctor,* 102 U. S. 707, when the accused process does not substantially follow the mode taught in the patent, there is no infringment. In view of the importance of the direction as to the non-generation of vapors in the B tubes, as hereinbefore pointed out, we do not think a process which relies on vaporization in the B tubes can be said to infringe the patented process.

The Egloff patent does not require extended consideration. It may fairly be said that the Egloff patent, described above at p. 478, was an improvement on the Dubbs system. The improvement consisted in providing a clean charging stock for the B tubes by heating crude or fuel oil in coils which are contained in a separate heating apparatus from the one used to heat the cleaned stock, and discharging it in a liquid phase into an expansion chamber. The unvaporized oil is withdrawn from the expansion chamber and does not reenter the system. The vapor is liquefied in a partial condenser or dephlegmator, and the reflux condensate is pumped as a charge into the B tubes or apparatus substantially similar in form and operation to the Dubbs patent. The reflux condensate after passing through the B coils reenters the same expansion chamber that is used for its preparation.[9] Noth-

[9] A typical claim (5) reads as follows:

"5. A process of oil conversion, consisting in maintaining a body of heated hydrocarbons in an enlarged zone where substantial vaporization occurs, in subjecting the vapors to reflux condensation to condense the heavier vapors, in passing the reflux condensate in an advancing stream through a heating zone where it is subjected to

ing is said in the Egloff patent as to vaporization in the B tubes.

It seems obvious that the Dubbs patent anticipated all the steps of the process except the separate treatment of the heavy oil. The clean charge of the reflux condensate was brought about by the withdrawal of the residue of unvaporized oil, and this withdrawal was old in the art.[10] As there is nothing in the claims or specification to show any reliance upon where vaporization, whether by generation or liberation, takes place, such difference as there may be between this patent and Dubbs as to that phenomenon is not significant. But we see nothing in the addition of the extra still that involves invention. In retrospect, it appears almost inevitable that, once a satisfactory continuous feed cracking apparatus was developed, chemical engineers would promptly design equipment for integrating the initial distillation of crude or fuel oil, with whatever cracking might be practicable, with the gas oil cracking process to form a continuous operation. Retrospective simplicity is often a misleading test of invention where it appears that the patentee's conception in fact solved a recognized problem that had baffled the contemporary art; but in this case Egloff advanced his improvement shortly after Dubbs disclosed the underlying process and before Dubbs' system had had wide commercial use; hence contemporary workers had no occasion to deal with what-

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cracking conditions of temperature and pressure, in delivering heated condensate to said enlarged zone, and simultaneously heating an independent stream of charging oil for delivery to said enlarged zone to a temperature sufficient to cause a substantial vaporization thereof in said zone, in introducing said heated charging oil to the enlarged zone, and in withdrawing unvaporized oil from said enlarged zone without permitting the same to again enter either of said oil streams."

[10] Egloff was not the first patentee to realize the advisability of withdrawing the heavier oils; Dubbs certainly anticipated him, as did Behimer, No. 1,883,850; Greenstreet, No. 1,740,691; Alexander, No. 1,407,619; and Hall, No. 1,175,910.

ever engineering problems might have been involved. We have, therefore, a conception which is on its face too obvious to constitute patentable invention, and which was advanced shortly after any need of it arose. We think the district court was right in finding the Egloff patent invalid.

Affirmed.

FELDMAN *v.* UNITED STATES.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT.

No. 193. Argued December 17, 1943.—Decided May 29, 1944.

The Fifth Amendment does not forbid the use in evidence against a defendant in a criminal case in a federal court of self-incriminating testimony theretofore compelled—under a state immunity statute and without participation by federal officers—in proceedings in a state court. P. 492.

136 F. 2d 394, affirmed.

CERTIORARI, 320 U. S. 724, to review the affirmance of a conviction, under § 215 of the Criminal Code, for using the mails to defraud.

Mr. Seymour M. Klein, with whom *Mr. James Marshall* was on the brief, for petitioner.

Mr. Chester T. Lane, with whom *Solicitor General Fahy, Assistant Attorney General Tom C. Clark,* and *Mr. Edward G. Jennings* were on the brief, for the United States.

MR. JUSTICE FRANKFURTER delivered the opinion of the Court.

This is an indictment under Section 215 of the Criminal Code, 18 U. S. C. § 338, for using the mails to further a fraudulent scheme. Petitioner's conviction was affirmed