

United States Court of Appeals, Seventh Circuit.
UNIVERSITY OF ILLINOIS FOUNDATION, Plaintiff and Counter Defendant-Appellee,
v.
BLONDER-TONGUE LABORATORIES, INC., Defendant and Counter Claimant-Appellant,v. JFD
ELECTRONICS CORPORATION, Counterclaim-Defendant-Appellee.

No. 17153.

Feb. 13, 1970, As Modified on Denial of Rehearing April 2, 1970.

Action by assignee of patents for infringement of two patents in field of radio and television antennas, in which defendant counterclaimed against assignee and patent licensee for unfair competition, violation of antitrust laws and infringement of defendant's patent. The United States District Court for the Northern District of Illinois, Eastern Division, Julius J. Hoffman, J., determined that plaintiff's patents were valid and infringed, dismissed unfair competition and antitrust charges, and found defendant's patent invalid for obviousness, and defendant appealed. The Court of Appeals, Fairchild, Circuit Judge, held that plaintiff's patent No. 3,210,767 for frequency independent unidirectional antennas was not invalid for obviousness, but that patent No. Re 25,740, reissuance of No. 3,108,280, for log periodic backward wave antenna array was invalid for obviousness.

Affirmed in part, reversed in part and remanded.

3,079,602. Cited as prior art.

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Before CASTLE, Chief Judge, DUFFY, Senior Circuit Judge, and FAIRCHILD, Circuit Judge.

FAIRCHILD, Circuit Judge.

The University of Illinois Foundation brought action against Blonder-Tongue Laboratories, Inc. for infringement of two patents in the field of radio and television antennas. Blonder-Tongue asserted invalidity of the two patents. JFD Electronics Corporation, Licensed under the patents, was made a party, and

Blonder-Tongue counterclaimed against JFD (principally) and the Foundation, for unfair competition, violation of antitrust laws, and infringement of a Blonder-Tongue patent.

The district court decided the Foundation's patents were valid and infringed, dismissed the unfair competition and antitrust charges, and found claim 5 of the Blonder-Tongue patent obvious and invalid. Blonder-Tongue has appealed.

Blonder-Tongue argues here, in addition to the merits issues presented to the district court, that it was not given a fair trial.

1. Alleged deprivation of a fair trial.

[1] In October, 1967, after a number of postponements for the convenience of one or the other of the parties or the court, trial was set for December 18. Blonder-Tongue asserts that it was ready for trial on that day. The court, however, was unable to reach the matter and held it on call until December 20, then until December 26, then until the 27th, and then until the 28th. Trial began December 28 and lasted to January 16.

During the delay, Blonder-Tongue moved for postponement until at least February 13, showing that Mr. Blonder, its principal officer, and Professor Chu, its expert, could have appeared at a trial beginning December 18, but had conflicting and compelling other commitments in late December and January. FN1

FN1. Although reference is made to being deprived of 'intended customer and other witnesses' there is no real explanation why these could not have been produced at the trial in January as well as in December.

The court denied the motions. The trial scheduled for December 18, but actually begun December 28, lasted more than two weeks. Mr. Blonder did testify. Professor Chu (who had gone to Taiwan in late December) did not, but counsel has not shown the substance of testimony expected from him and not otherwise available. We find no abuse of discretion in proceeding with the trial.

2. The patents involved.

The Foundation is assignee of a patent, No. 3,210,767, issued October 5, 1965 to D. E. Isbell on an application filed May 3, 1960: Frequency Independent Unidirectional Antennas. This patent is reproduced in *University of Illinois Foundation v. Winegard Company* (S.D. Iowa, 1967), 271 F.Supp. 412, 420-424.

The Foundation is also assignee of a patent, No. Re 25,740, issued March 9, 1965 to P. E. Mayes, et al.: Log Periodic Backward Wave Antenna Array. This patent is a reissue of No. 3,108,280, applied for September 30, 1960.

Blonder-Tongue is assignee of a patent, No. 3,259,904, issued July 5, 1966 to I. P. Blonder et al. on an application filed November 21, 1963: Antenna Having Combined Support and Lead-In.

3. Alleged Invalidity of Isbell on account of anticipation by publication.

[2] Isbell was associated with the Antenna Laboratory of the University of Illinois in performance of an Air

Force contract. Reports were prepared and distributed from time to time pursuant to the contract. Quarterly Engineering Report No. 2 contained a description of Isbell's investigation of a type of log-periodic antenna, and it is conceded that if this report was published more than one year before May 3, 1960, the patent was invalid under 35 U.S.C. s. 102(b). The printer delivered copies of the report to the office of Miss Johnson, technical editor of the Electrical Engineering Research Laboratory, April 30, 1959. Copies were mailed out of Miss Johnson's office, pursuant to the Air Force contract, to persons on the distribution list May 5.

Blonder-Tongue contends that this report was accessible to the public on and after April 30, 1959 and therefore a printed publication more than one year before May 3, 1960.

It appears that the Engineering Research Laboratory had a 'library' or reading room near Miss Johnson's office. It was unattended, and she had the keys to the cabinets in which materials were kept. It is unlikely that a copy of the report in question reached the 'library' before May 3. Miss Johnson testified that a report would normally not be processed and made available as a library copy for a week or two after delivery by the printer.

The testimony as to public availability of copies on hand in her office before mail distribution was equivocal. Miss Johnson testified that if counsel had come to her office on April 30 and requested a copy of the report, he would 'very likely' have been given one. She believed the copies were 'available as a library reference' on the date received in her office.

Miss Johnson's immediate superior testified, however, that it was the policy to distribute quarterly reports to the list supplied by the Air Force before making them available to others.

The finding that the circumstances of the possession of the reports from April 30 to May 5 did not represent publication is not clearly erroneous.

4. Alleged Obviousness of Isbell.

[3] We are met at the outset with the fact that the district court for the southern district of Iowa has decided that Isbell is invalid for obviousness. FN2 That decision was affirmed by the eighth circuit FN3 (although one of the district court's findings was deemed erroneous) and certiorari has been denied. FN4 It would seem sound judicial policy that the adjudication of that issue against the Foundation in one action where it was a party would provide a defense in any other action by the Foundation for infringement of the same patent. FN5

FN2. *University of Illinois Foundation v. Winegard Company* (1967), 271 F.Supp. 412.

FN3. (1968), 402 F.2d 125.

FN4. (1969), 394 U.S. 917, 89 S.Ct. 1191, 22 L.Ed.2d 452.

FN5. See *Bernhard v. Bank of America Nat. Trust & Sav. Ass'n.* (1942), 19 Cal.2d 807, 122 P.2d 892, 894-895.

That, however, is not the law in this field. 'While the earlier decision may by comity be given great weight in a later litigation and thus persuade the court to render a like decree, it is not res adjudicata and may not be pleaded as a defense.' FN6

FN6. Triplett v. Lowell (1936), 297 U.S. 638, 642, 56 S.Ct. 645, 647, 80 L.Ed. 949, 952.

We approach the carefully stated decisions of the district court and court of appeals in the Winegard action with great respect, but our own analysis, on the basis of the record and the findings of fact made by the district court in this action, and after considering the legal conclusions of the district court, leads us to a different result.

We quote here from the opinion of the district court in this action his description of the problem dealt with and the Isbell solution:

'The plaintiff's patents in suit relate to antennas having unidirectional radiation patterns essentially independent of frequency over a wide band of frequencies. The antennas covered by the patents are equally suitable for both the reception and the transmission of radiated electromagnetic energy (which includes radio and television frequency signals), but our primary concern is with their use for television reception. The characteristics desired in an antenna used for the reception of television signals are a function of the nature of frequency transmission. Although the frequency of a transmitted wave remains essentially constant as the wave moves through space, the strength of the signal decreases with increasing distance. An antenna is used to isolate the desired signal from interfering signals which exist at the point of reception and to make this signal available to the television receiver, via a transmission line, in as large a magnitude as possible.

The characteristics of an antenna which measure its performance are its gain, its bandwidth, its directivity, and its impedance. 'Gain' is the measure of its ability to increase the strength of an incoming signal relative to a fixed standard; high gain is a desired characteristic. 'Bandwidth' is its capacity to receive, without adjustment, signals of different frequencies with essentially constant gain. An antenna whose reception is essentially independent of frequency over a wide band of frequencies is known as a 'wide-band' or 'frequency independent' antenna. 'Directivity' is an antenna's ability to receive signals from one desired direction as compared to all other directions. Television antennas are preferably unidirectional in order to eliminate interference with the desired signal and the 'ghost' images such interference produces. 'Impedance' is a measure of an antenna's ability to transfer energy to the transmission line. An antenna's impedance should match as closely as possible the impedance of the transmission line to prevent the formation of 'ghosts.' In the design of antennas, one desired characteristic is often obtained at the expense of another. The antenna designer's goal, of course, is to achieve the best possible balance of the several different characteristics.

The simplest antenna which has been put to practical use for television reception is the dipole antenna, which consists of a pair of linear components extending from each side of a transmission line fed in the center at the inner ends of the linear components. Shortly after 1954, the log-periodic principle of antenna design was developed. The structures designed in accordance with this principle have cyclic performance characteristics which repeat periodically as frequency is increased. Although some log-periodic structures have broadband characteristics, most do not. While a log-periodic structure can readily be designed by one

using the log-periodic design principle, it cannot be predicted whether such a structure will have broadband characteristics and thus operate successfully as a log-periodic antenna.

The invention covered by the Isbell patent was made by Dwight E. Isbell during the course of his work at the University of Illinois Antenna Laboratory under an Air Force contract. Isbell's invention is a log-periodic antenna which contains a number of dipole elements arranged in a substantially planar, parallel arrangement to form an antenna array. The lengths of the dipoles vary from one end of the antenna to the other in accordance with a scale factor, a constant less than one, which is used to establish the length of adjacent elements. The spacing between adjacent elements also varies, preferably in the same manner. The dipoles are fed from the end of the antenna having the shortest dipoles by a twin-line feeder which provides a phase reversal of 180 degrees between adjacent dipoles by alternately connecting successive dipole halves. The Isbell antenna provides unidirectional radiation patterns of essentially constant beam width and input impedance for any desired band width.' FN7

FN7. An informative description also appears in the district court opinion in *Winegard*, 271 F.Supp. at 414-415.

The prior art (some of which was not cited by the patent office) is described in *Winegard*, 271 F.Supp. 412, 416-418, and illustrations of portions of the prior art are appendices to that opinion, pp. 425-429.

It is true that the array described by Isbell appears similar in several respects to arrays known in the prior art: (1) Each dipole consists of two equal rods substantially in line with each other and with a slight separation between their ends at the center of the dipole; (2) the dipoles are parallel to each other and arrayed along an axis through their centers; (3) the length of the dipoles and the spacing between them varies; (4) two transmission lines run along the axis; (5) in any dipole, one of the rods is connected with one transmission line, and the other rod with the other line; (6) in any dipole each rod is connected with the transmission line to which the corresponding rod in each adjacent dipole is not connected.

The significant difference between the Isbell array and every array in the prior art which is similar in any of the respects above stated is that in Isbell, the lengths of successive dipoles and the spaces between the dipoles are in geometric progression, the ratio in each progression being the same, having a value less than 1, usually between 0.8 and 0.95. The Isbell array is logarithmically periodic. 'The geometry of log-periodic antenna structures is chosen so that the electrical properties must repeat periodically with the logarithm of the frequency.' FN8 Dr. Du Hamel testified that the log-periodic concept is one 'whereby you design the antenna and all the dimensions so that the electrical performance must repeat periodically with the logarithm of frequency. This implies that the antenna is made of cells which are similar but are not of the same size and that adjacent cells are represented by some * * * constant factor, Tau.'

FN8. Jasik, *Antenna Engineering Handbook*, first ed., 1961, 18-10.

The concept of log-periodic antennas was known in the prior art. The crucial question is whether it would have been obvious to a person having ordinary skill in the art and desiring to produce a frequency independent broadband antenna to construct an array of the familiar dipoles along transmission lines with such relationship between the dimensions of successive dipoles as to produce a logarithmically periodic structure.

It is clear, from the record, that not every logarithmically periodic antenna has the desired frequency independent, broadband characteristics. It is also clear that there is no set of principles by which to predict the presence or absence of such characteristics in such structures.

'There is an infinite variety of log-periodic structures.' FN9 'It should be pointed out that many types of log-periodic structures are not broad-band because of either extreme variation over a period of severe end effect which destroys the periodicity of the electrical characteristics. Only the successful structures are described herein. Unfortunately, it is not possible to determine a priori the frequency-independent type of log-periodic antennas. 'Since log-periodic antennas are too complex to analyze by present-day theoretical methods, they must be investigated by logical experimental methods. However, their repetitive nature greatly simplifies the initial experimental investigation because the characteristics need only be measured over one or two periods of frequency. The operation over other periods may be readily predicted. Although a large amount of experimental data has been obtained, much remains to be done.' FN10

FN9. Jasik, op. cit. 18-11.

FN10. Ibid, 18-13.

The exposition of the theory of logarithmically periodic antennas principally relied on by Blonder-Tongue is an article, published in March, 1958, by Drs. Du Hamel and Ore. FN11 Although the article asserts the general principle that 'the geometry of logarithmically periodic antenna structures is defined so that the pattern and impedance repeat periodically with the logarithm of the frequency', the structures described as successful are markedly different in type and configuration from the array of simple dipoles along transmission lines.

FN11. R. H. Du Hamel and F. R. Ore, Logarithmically Periodic Antenna Designs, 1958, I.R.E. National Convention Record, 139.

Jasik, writing in 1961, says of the Isbell work, after describing more complex structures 'A recent and rather simple type of log-periodic antenna is illustrated in Fig. 18-11. It consists of an array of dipoles with lengths and spacings arranged in a log-periodic manner. The dipoles are excited by a uniform two-wire line with the line transposed between adjacent dipoles.' FN12 He does go on to say: 'It may be noticed that this antenna may be derived from that of Fig. 18-9 (two-winged 'Trapezoidal Tooth Log Periodic Structure') by letting the tooth width and the angle (beta) approach zero and then folding the two half structures about the horizontal axis so that the angle (psi) approaches zero.' The observation appears correct but we deem it a hind-sight analysis, and not an indication that it would have been obvious to modify previously known figures in the manner indicated and thus produce the Isbell array.

FN12. Op. cit. p. 18-13.

As noted by the district court, Drs. Du Hamel and Ore filed a patent application March 14, 1958 FN13 describing structures of types which seem significantly different from a dipole array.

FN13. granted as No. 3,079,602, Feb. 26, 1963: Logarithmically Periodic Rod Antenna.

Dr. Du Hamel testified that he did not design an antenna using the Isbell configuration 'because the design principles which we were working on did not make this an obvious result.' He explained that along with the log-periodic configuration concept, and the included angular concept, design had been influenced by another concept, of a self complementary structure, one which meets the test that an identical structure would result from replacing the solid with air and the air with solid. 'The complementary condition proved to not be a necessary condition in our later work, but we were still led by this to some extent in designing the log-periodic antennas that we did design.'

When Dr. Du Hamel learned that the Isbell antenna worked 'I was quite surprised at the simplicity of the structure, and my pride was a little bit hurt in that I had not thought of it, too, or first. * * * At first I was somewhat surprised that they worked but after thinking more about it and thinking back, then I was not surprised. At first I was surprised that it did work.'

From the record before us, we do not view the situation as one where it was obvious to antenna designers that a simple dipole and the segment of line between it and the next dipole in an array would describe a cell fitting the concept of logarithmically periodic antennas, nor that some arrangement of simple dipoles in geometric progression would be a frequency independent broadband antenna, making it simply a matter of logical experimentation to find one.

[4] With all respect to our brethren of the eighth circuit, who saw the problem at the time of Isbell's work as 'one of trial and error with a combination of commonly used elements operating within known principles of electronics and mechanics to achieve a desired result', FN14 we conclude, with the district judge here, that the Isbell patent was not invalid for obviousness.

FN14. 402 F.2d 128.

5. Validity of Mayes patent.

In the district court, Blonder-Tongue challenged the validity of Mayes on the grounds of obviousness; that the patentees, Mayes and Carrel, were not the inventors; and that the patent was obtained by fraud on the patent office. Blonder-Tongue has stressed the last two on appeal.

Obviousness.

[5] The district court found that Mayes 'incorporates the structural characteristics of the Isbell antenna, with one modification: the dipoles in the array are inclined or V'd * * * While the Isbell antenna's dipoles provide a broadband unidirectional antenna with an upper frequency limit established by the length of the shortest dipole in the antenna, the Mayes et al V shaped elements permit the antenna to be operated over much higher bands of frequency and with increased directivity thus increasing the effective frequency range of the antenna and constituting an improvement over the Isbell invention.'

Mayes and Isbell both worked at the Antenna Laboratory. As already seen, the Isbell structure was

described in Quarterly Report No. 2, published May 5, 1959. The idea of V'ing the Isbell dipoles was conceived in June 1959. Thus the Isbell disclosure was prior art with respect to Mayes, and the difference between subject matter of Mayes and prior art is the V shape of the dipoles.

Although we have concluded that it would not have been obvious at the time of the Isbell invention to experiment with arrays of simple dipoles in an effort to find a frequency independent broadband log periodic antenna, we do conclude that, given the Isbell structure, it would have been obvious to experiment with simple modifications of it, such as the V'ing disclosed in Mayes.

Although we prefer to rest our decision that Mayes is invalid upon the ground of obviousness, the facts which render the other two grounds at least plausible lend support to the conclusion of obviousness.

Invention by another.

On October 6, 1959, Dr. Mayes filled out a form reporting the invention to the Office of Naval Research. One space was designated: 'Earliest date and place invention was conceived (Brief outline of circumstances).' He inserted the following: 'On June 11, 1959, Mr. E. M. Turner of Wright Air Development Center asked if the angles of dipoles on a log period dipole array had been used as a design parameter. This was tried with no significant change in performance. The idea of operating at higher frequencies so that a change would be obtained then lead to the present invention.'

The same report indicates that the first operating model was completed June 23 and the first test, with results sufficiently good to call for further testing, was made the same day.

The district court classified the thought behind Turner's question as mere surmise or theory FN15 rather than the type of suggestion held to be really the invention in *Atlantic Works v. Brady* (1883), 107 U.S. 192, 2 S.Ct. 225, 27 L.Ed. 438.

FN15. 1 Deller, *Walker on Patents*, 2nd ed. s. 68.

Although Turner's question suggested only one simple change, such change is the whole difference between Mayes and Isbell. Whether the district court erred on the point or not, the episode is persuasive toward a conclusion of obviousness.

Alleged fraud on the patent office.

On November 6, 1962, during the prosecution of the original Mayes application, the examiner rejected certain claims. He referred to an article by Isbell in *I.R.E. Transactions on Antennas and Propagation*, published in May, 1960 and stated, in part, 'No invention would be involved in merely arranging the Isbell dipoles in some sort of V-shape as taught by Rowland.' Although a footnote to the title disclosed that the article was a revised manuscript the original of which had been previously published June 10, 1959, the examiner did not refer to the 1959 publication date, and perhaps overlooked it.

On January 10, 1963, Mayes responded to the action of November 6 by filing an affidavit under Rule 131 of the patent office, asserting that Mayes and his co-applicant, Carrel, completed their invention before May, 1960, the purpose, as counsel wrote the patent office, being 'to carry their work back of the date of the

publication in the IRE and back of the Isbell application filing date of May 3, 1960.' Neither Mayes nor counsel pointed out the fact, known to Mayes, that the Isbell article, with very slight revision, had first been published on June 10, 1959 at about the time of the invention and more than one year prior to the filing date.

Blonder-Tongue argues that a fraud was thus practiced. The district court rejected the allegation of fraud on the principle that an applicant is under no obligation to disclose his knowledge of references, other than those which disclose the same invention, citing *Wen Products, Inc. v. Portable Electric Tools, Inc.* (7th Cir., 1966), 367 F.2d 764, 767.

[6] We do not think the Wen principle would control a situation where an applicant affirmatively presents a half-truth to the patent office in order to overcome a rejection when he must know that the whole truth would support rather than overcome the rejection. The applicant's knowledge of a fact as to which he knows the patent office is ignorant or mistaken and which would be material under the theory he knows the patent office is applying would impose an obligation of candor.

We are reluctant, however, to find fraud in this instance because of the circumstance that the article relied on by the patent office itself disclosed the correct first publication date.

But these facts at least detract from the presumption of validity. It is clear that the publication date of June 10, 1959 would, on the theory followed by the examiner, have prevented issuance of the patent. Presumably the same would be true of the publication of Quarterly Report No. 2, May 5, 1959.

6. Infringement.

Apparently it is difficult or impossible to construct the Isbell antenna (or similar arrays with two transmission lines) so that all dipole elements lie exactly within one plane. The Isbell patent states that the dipoles are 'substantially coplanar'. The dipole elements of the accused Blonder-Tongue antennas lie in one of two planes which are about 1/18 of a wavelength apart. The district court concluded these elements are substantially coplanar, and we agree.

This resolves the only issue argued with respect to the infringement found by the district court. If other issues become important as a result of our decision that Mayes is invalid, they will have to be resolved on remand.

7. Unfair competition and antitrust claims.

[7] Blonder-Tongue made a series of charges of unfair competition and the like. The allegations included exaggerated claims in advertising, threatened litigation against competitors, improper news releases concerning litigation, intentional patent mismarking, fraud on the patent office, already discussed, raiding of Blonder-Tongue by JFD to recruit key personnel, and attempting to force customers to buy unpatented articles as a condition of obtaining patented ones.

Extended discussion is unnecessary. The best that can be said in any instance is that Blonder-Tongue presented evidence from which the district court might, but was not compelled to, draw inferences supporting the particular charge. Contrary inferences were equally, or more, reasonable. The findings made were not clearly erroneous, the standards applied as to fairness of trade practices were appropriate, and we

agree with the conclusions reached.

8. Obviousness of Blonder patent subject matter.

[8] The Blonder alleged invention was 'primarily directed', according to the specifications, to improvement of mounting structures of antennas, stabilizing of outdoor performance, and providing for ready adjustability in indoor performance. Blonder does not teach a log-periodic arrangement. The very nature of the subject matter suggests that it was directed at the type of problems which might be solved when addressed by persons with ordinary skill in the art.

The district court described the claim at issue as follows:

'The antenna of Claim 5 comprises a pair of parallel conductors (twin booms) spaced apart vertically in a vertical plane. Dipole elements lying in vertically-spaced horizontal planes extend from the conductors at successive points along the length of the conductors, with dipole lengths increasing gradually from one end of the conductors to the other, the shortest dipoles at the front end of the conductors, where terminals connect a parallel wire transmission line to the antenna. Rigid insulating means, maintaining the terminals spaced apart, are connected with a strain relief or standoff for supporting the transmission line near the front end. Further rigid insulating means maintain the conductors' spacing at a region remote from the front end. The vertical distance between conductors is less than the distance between successive dipole elements and less than the wavelengths of the frequency band of the antenna's operation.'

[9] Unfortunately for our performance of the task of review, the district court did not describe the scope and content of the prior art, identify the differences between the prior art and claim 5, nor state the level of ordinary skill in the pertinent art. We would prefer that these steps be meticulously taken. FN16

FN16. See *Cloud v. Standard Packaging Corporation* (7th Cir., 1967), 376 F.2d 384; *Gass v. Montgomery Ward & Co.* (7th Cir., 1967), 387 F.2d 129; *United States Gypsum Company v. National Gypsum Company* (7th Cir., 1967), 387 F.2d 799, 801-802, cert. den. 390 U.S. 988, 88 S.Ct. 1184, 19 L.Ed.2d 1292.

The court did, however, list as prior art a publication, two types of antennas, and 6 patents, all in addition to the patents cited by the patent office. The court concluded that the differences between claim 5 and the prior art would have been obvious.

The Blonder-Tongue briefs also fell short in setting forth the analysis which it would contend ought to have been made.

If we understand its position correctly, Blonder-Tongue places chief reliance upon the fact that while Isbell teaches that the two planes in which the dipole elements lie are to be close enough together that the dipoles are substantially coplanar, Blonder teaches that the planes may be separated by some distance, but less than the wavelength of the band. A substantial separation of these planes is clearly shown, however, in the 1961 publication cited by the court, Technical Report No. 52, of the Antenna Laboratory.

Mr. Blonder testified that all the mechanical elements in claim 5 were old. Combining them would, we think, have been obvious to a person of ordinary skill in the art.

Insofar as the judgment determined that Reissue Patent No. 25740 is valid and enforceable, enjoined infringement thereof, and provided for the determination and award of damages for such infringement, the judgment is reversed and the cause remanded for such further proceedings as may be required, consistent with this opinion. In all other respects, the judgment is affirmed. Deendant Blonder-Tongue shall recover from plaintiff Foundation one-third of its costs on appeal.

C.A.7 (Ill.),1970.

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422 F.2d 769, 164 U.S.P.Q. 545, 1970 Trade Cases P 73,087

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