

Co-operative, supra, 307 U. S. at 568. We adhere to that opinion now.

The judgment will be reversed, but, as errors assigned below have not been passed on there or argued here, the cause will be remanded to the Circuit Court of Appeals for further proceedings in conformity with this opinion. The mandate will issue forthwith.

Reversed.

MR. JUSTICE ROBERTS took no part in the consideration or decision of this case.

EXHIBIT SUPPLY CO. *v.* ACE PATENTS
CORPORATION.*

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

No. 154. Argued January 15, 16, 1942.—Decided February 2, 1942.

1. In a case involving a patent, concerning which there was no conflict of decisions by Circuit Courts of Appeals, certiorari was granted because of the nature of the questions involved, and because it was shown that the industry affected by a decision sustaining the patentee's contentions was located in a single circuit so that litigation resulting in such conflicts would not be likely to occur. P. 128.
2. Claim 4, as amended, of the Nelson patent, No. 2,109,678, relates to the structure of a resilient switch or circuit closer, so disposed on the board of a game table as to serve as a target which, when struck by a freely rolling ball, will momentarily close an electrical circuit. It claims as elements of the invention a conductor standard anchored to the table, a coil spring surrounding the standard, means carrying the spring pendants from the upper portion of the standard, with the coils of the spring spaced from the standard, "and conductor means in said circuit and embedded in the table at a point

*Together with No. 155, *Genco, Inc. v. Ace Patents Corporation*, and No. 156, *Chicago Coin Machine Co. v. Ace Patents Corporation*, also on writs of certiorari, 314 U. S. 702, to the Circuit Court of Appeals for the Seventh Circuit.

spaced from the standard and engageable by a portion of the spring when it is flexed to close the aforementioned circuit." *Held*:

(1) The word "embedded" as used in the claim embraces any conductor means solidly set or firmly fixed in the table, whether or not it protrudes above or below the surface. P. 135.

(2) By amendment of the claim so as to describe the conductor means as "embedded in the table," instead of "carried by the table," as it stood before amendment, devices in which the conductor means is a nail or pin driven into the table were not excluded. P. 135.

(3) By such amendment, however, made to meet objections of the Patent Office based on the prior art, the patentee restricted the claim to those combinations in which the conductor means, though carried on the table, is also embedded in it; recognized and emphasized the difference between the two phrases, and proclaimed his abandonment of all that is embraced in that difference. P. 136.

(4) The amendment operates as a disclaimer of that difference and must be strictly construed against him. P. 137.

(5) What the patentee, by a strict construction of his claim, has lost by disclaimer can not be regained by recourse to the doctrine of equivalents. P. 137.

119 F. 2d 349, modified.

CERTIORARI, 314 U. S. 702, in three cases, to review the affirmance of decrees holding a patent claim valid and infringed and enjoining the alleged infringements.

Mr. John H. Sutherland, with whom *Mr. Clarence E. Threedy* was on the brief, for petitioners.

Mr. Casper W. Ooms, with whom *Mr. John A. Russell* was on the brief, for respondent.

MR. CHIEF JUSTICE STONE delivered the opinion of the Court.

Respondent began the present litigation as three separate suits against the respective petitioners for infringement of the Nelson Patent No. 2,109,678 of March 1, 1938, for a "contact switch for ball rolling games." The defenses were non-invention in view of the prior art, anticipation by prior publication, use and sale, non-in-

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fringement and a file wrapper estoppel. The three suits were consolidated and tried together. Upon full consideration of the issues the District Court and the Circuit Court of Appeals for the Seventh Circuit held Claim 4 of the patent valid and infringed. 119 F. 2d 349.

We granted certiorari, 314 U. S. 702, on a petition which challenged only the decree of infringement below, on the ground that it enlarged the scope of the patent as defined by the claim, by resort to the doctrine of equivalents, and that Nelson, the patentee, by the amendment of his claims in the Patent Office, had surrendered Claim 4 so far as it would otherwise read upon the alleged infringing devices. Neither in their petition nor in their brief and argument in this Court have petitioners contended that the patent is invalid for want of invention. Although there is no conflict of decision, we were moved to grant the petition by the nature of the questions presented, together with a showing that the industry affected by the patent is located in the seventh circuit so that litigation in other circuits resulting in a conflict of decision would not be likely to occur.

The patent relates to the structure of a resilient switch or circuit closer, so disposed on the board of a game table as to serve as a target which, when struck by a freely rolling ball, will momentarily close an electrical circuit. Specifications and drawings disclose a target or switch comprising a conductor standard mounted in the table and carrying a coil spring having a leg pendantsly disposed in a conductor ring located in the table and slightly offset from the standard. The standard and ring are wired in a circuit with a relay coil and a source of electrical energy. When a ball rolling on the table bumps the coil spring from any direction, the leg of the spring is deflected momentarily bringing it into contact with the ring, so as to close the circuit for operating the relay coil and any connected auxiliary game device. Any de-

sired number of targets may be placed on the board in a suitably spaced relationship; in pin ball games a single ball may successively bump and close a number of the switch devices. In describing his invention the patentee declared it to be his intention "to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention."

The prior art as disclosed by the record shows no device in which the coil spring serves both as a target and a switch. The advantages of the device are said to be that the combination is peculiarly adapted to use in pin ball games; that the coil spring structure is so organized as to form both a switch for operating auxiliary recording or signalling devices and a target which is accessible from any direction.

Claim 4¹ claims as the elements of the invention the conductor standard anchored in the table, the coil spring surrounding the standard which carries the spring pendants from its top, with the spring spaced from the standard to enable the spring to be resiliently flexed, "and conductor means in said circuit and embedded in

¹ "4. In a ball rolling game having a substantially horizontal table over which balls are rollable, the combination with said table of a substantially vertical standard anchored in said table with its lower end carrying on the underside of the table a lead for an electric circuit and its upper end extending a substantial distance above the top surface of the table, a coil spring surrounding the standard, means carrying said spring pendants from the upper portion of the standard above the table with the coils of the spring spaced from the standard to enable the spring to be resiliently flexed when bumped by a ball rolling on the table, said spring being in the aforementioned circuit and constituting a conductor, and conductor means in said circuit and embedded in the table at a point spaced from the standard and engageable by a portion of the spring when it is flexed to close the aforementioned circuit."

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the table at a point spaced from the standard and engageable by a portion of the spring when it is flexed to close the aforementioned circuit." The drawings of the patent show the "conductor means" last mentioned in the form of a ring or ferrule set in the table with its axis at right angles to the table and with its flange projecting slightly above the surface of the table. The leg pending from the coil spring is so disposed at the center of the annular ferrule that a ball striking the spring in any direction will bring the pendant leg into contact with the ring so as to close the circuit.

The six devices alleged to infringe the patent differ from the particular claim of the invention described in the specifications, only in the specific form and method of supporting the "conductor means" which is "engageable by a portion of the spring when it is flexed." In two of the accused devices, plaintiff's Exhibits 5 and 7, there is substituted for the ring conductor set in the table a nail or pin driven into the table and surrounded near its upper end by a ring attached to the end of the resilient coil spring, or formed there of the coil wire. When the spring is struck the circuit is closed by the contact of ring and nail at a point above the table. This arrangement contrasts with that of the conductors as shown in the patent drawings, in which a ring set in the table and the pendant leg of the coil form the contact at a point near or below the surface of the table. In the one case, the ring conductor is supported by the table and the complementary conductor is attached to, or is formed of, the wire of the spring at its end. In the other, the locations of the ring and of the complementary conductor are reversed.

Two others of the accused devices, plaintiff's Exhibits 6 and 10, show a further alteration. In Exhibit 6, the nail or pin, instead of being driven directly into the table, is affixed to and supported by a metal plate resting

on the upper surface of the table with the coil spring standard passing through it and holding it firmly on the table. The conductor extends to the wire connection through a hole in the table underneath the plate. In Exhibit 10 the conductor is insulated from the plate, which is rigidly anchored to the coil spring standard, which in turn is anchored to the table.

In the remaining two accused devices, plaintiff's Exhibits 8 and 9, an insulating core or sleeve surrounds the coil standard and supports an annular or enveloping conductor wired in the circuit, spaced and insulated from the coil standard so that the circuit is closed by contact of the conductor and the coil when it is flexed. In Exhibit 8 the sleeve is electrically connected with a metal plate, held in position on the top of the table by the standard which passes through the plate. A wire leading from the plate passes through a hole in the table underneath the plate. In Exhibit 9 the annular conductor is located above the table top and a wire leading from it passes through a hole in the table.

Comparison of the several accused devices shows that in all but Exhibits 5 and 7 the conductor means complementary to the coil spring is not embedded in the table, but is supported by an insulated plate resting on the table or an insulating core held in position by the standard. In Exhibits 6 and 10 the conductor means passes to its wire connection through a hole in the table underneath the plate. In Exhibit 8 the connecting wire passes through a hole in the table to a metal plate resting on its surface, and in Exhibit 9 to the conductor means located above the surface of the table.

Petitioners insist that respondent is estopped to assert infringement by the file wrapper record in the Patent Office; and, in any event, that estoppel can be avoided and infringement established only by resort to the doctrine of equivalents, which they assert is incompatible

with the statutory requirements for the grant of a patent and with the doctrine that the patent claims measure the patented invention.

The file wrapper history, so far as now relevant, relates to Claim 7 which, after amendment, was allowed as Claim 4 now in issue. The original Claim 7 with its amendments is set forth as follows, matter added by amendment in parentheses; matter stricken in italics and underscored:

(4) 7. In a ball rolling game having a substantially horizontal table over which balls are rollable,
the combination with said table of a substantially vertical standard anchored in said table with its lower
end carrying on the underside of the table a
lead for an
A ¹ electric circuit and its upper end extending
a substantial distance above the top surface
of the table, a
coil spring surrounding the standard, means carrying
said spring pendants from the upper portion of
the
per C standard (ABOVE THE TABLE) with the
coils of the spring spaced from the
" " standard and the lower end of the coil spring
terminating
" " at a distance above the top surface of the table
to enable the spring to be resiliently flexed
when bumped
by a ball rolling on the table, said spring being
in the
aforementioned circuit and constituting a
conductor, and
per B other conductor means (IN SAID CIRCUIT
AND EMBEDDED IN) carried by the table
at a point
spaced from the standard and engageable by a

portion of the spring when it is flexed to close the aforementioned circuit.

The original application contained six claims, all of which the examiner rejected because he thought no patentable significance had been shown. The inventor submitted certain amendments, and two new claims, 7 and 8, and induced the examiner to reconsider the patentability of the invention. Four of the claims were then allowed, but the examiner rejected Claim 7 as failing to claim the invention. He said: "It is old in the art to make an electrical contact by flexing a coil spring as shown by the art already cited in the case. In order to distinguish over the references therefor, the applicant's particular type of contact structure, comprising an extension on the coil spring adapted to engage an annular contact embedded in the table, must appear in the claims. . . ." Applicant rejected the examiner's suggestion that the "contact structure" be adapted to engage "an annular contact embedded in the table." Instead he cancelled "other" from the claim and substituted for "carried by" the phrase "in said circuit and embedded in," saying Claim 7 has been "significantly amended" "to define the complementary conductor contact as being embedded in the table." He added that "it is too far to go to state that the specific leg 19 must be defined," and "the allowed claims can it seems, be very simply avoided by taking the leg 19, separating it from the spring 18 and embedding it as a pin in the table so that the spring when flexed would contact the pin. . . . Claim 7 covers such alternative form and . . . in justice to applicant . . . should be allowed."

The examiner in reply recognized as "true" applicant's suggestion that if the leg pendant from the spring "were removed from the spring and embedded in the table an

operative device would result," but pointed out that the device claimed by the amendment "would be inoperative as the coil spring could not both terminate at a distance above the table and extend into a ferrule embedded therein." Thereupon the applicant added to the claim the words "above the table" and cancelled the phrase, "and the lower end of the coil spring terminating at a distance above the top surface of the table." The claim as amended was then allowed as Claim 4.

The claim before amendment plainly read on plaintiff's Exhibits 5 and 7 in which the nail or pin conductor is driven into the table, since the nail or pin is a "conductor means carried by the table" "engageable by a portion of the spring when flexed." The claim thus read is for an operative device, since the nail or pin projects above the table and may be engaged by the coil spring similarly located. The claim, as amended and allowed as Claim 4, likewise reads on plaintiff's Exhibits 5 and 7 if the nail or pin conductor which is driven into the table is "embedded in the table."

Petitioners do not seriously assert here that it is not so embedded. In fact, their brief expressly states that "we pass this contention." They could not well do otherwise, for the pin or nail, even though it protrudes above or below the table, not only conforms to the dictionary definition of "embed"—"To set solidly as in a bed," Webster; "To fix firmly in a surrounding mass of some solid material," Oxford Dictionary—but examination of the drawings and specifications indicates clearly enough that the claim was not intended to be limited to a complementary conductor located wholly between the upper and nether surfaces of the table. The specifications and drawings express no such limitation, and it is clear that the use of the word "embedded" in the claim as finally amended, when read in its context of claim and specifications, does not indicate such a limitation.

The patent drawings show the embedded ring conductor extending slightly both above and below the table. The examiner, in his second rejection of Claim 7, in saying that if the leg pendant from the spring were removed from the spring and "embedded" in the table an operative device would result, could not have referred to the embedded leg or nail as being wholly located below the surface of the table, since the pin so disposed would not be "engageable" "by a portion of the spring when it is flexed" by a ball rolling in any direction. The term is to be read as used in a permissible sense which would conform to the drawings and the function which the conductor to which the term was applied was obviously intended to perform.

We think that the word "embedded," as applied in Claim 4, must be taken to embrace any conductor means solidly set or firmly fixed in the table, whether or not it protrudes above or below the surface. Claim 7 before amendment read on the accused devices, plaintiff's Exhibits 5 and 7, which exhibit the nail or pin embedded in the table but protruding above its surface. Consequently the patentee by amending the claim so as to define the conductor means as embedded in the table did not exclude from the amended claim devices exemplified by these exhibits, and they must be deemed to be infringements.

There remains the question whether respondent may rely upon the doctrine of equivalents to establish infringement by the four other accused devices. Respondent concedes that the conductor means in the four devices are not literally "embedded in the table," but insists that the changes in structure which they exhibit over that of plaintiff's Exhibits 5 and 7 are but the mechanical equivalents of the "conductor means embedded in the table" called for by the amended claim, and so are entitled to the protection afforded by the doctrine of equivalents. Petitioners do not seriously urge that the conductor means in the

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four accused devices are not mechanical equivalents of the conductor means embedded in the table which the patent claims. Instead, they argue that the doctrine should be discarded because it does not satisfy the demands of the statute that the patent shall describe the invention. R. S. § 4888; 35 U. S. C. § 33.

We do not find it necessary to resolve these contentions here. Whatever may be the appropriate scope and application of the doctrine of equivalents, where a claim is allowed without a restrictive amendment, it has long been settled that recourse may not be had to that doctrine to recapture claims which the patentee has surrendered by amendment.

Assuming that the patentee would have been entitled to equivalents embracing the accused devices had he originally claimed a "conductor means embedded in the table," a very different issue is presented when the applicant, in order to meet objections in the Patent Office, based on references to the prior art, adopted the phrase as a substitute for the broader one "carried by the table." Had Claim 7 been allowed in its original form, it would have read upon all the accused devices, since in all the conductor means complementary to the coil spring are "carried by the table." By striking that phrase from the claim and substituting for it "embedded in the table," the applicant restricted his claim to those combinations in which the conductor means, though carried on the table, is also embedded in it. By the amendment, he recognized and emphasized the difference between the two phrases and proclaimed his abandonment of all that is embraced in that difference. *Hubbell v. United States*, 179 U. S. 77, 83; *Weber Electric Co. v. Freeman Electric Co.*, 256 U. S. 668, 677-78; *I. T. S. Rubber Co. v. Essex Rubber Co.*, 272 U. S. 429, 440, 444; *Smith v. Magic City Kennel Club*, 282 U. S. 784, 789; *Schriber Co. v. Cleveland Trust Co.*,

311 U. S. 211; cf. in case of disclaimer *Altoona Theatres v. Tri-Ergon Corp.*, 294 U. S. 477, 492, 493. The difference which he thus disclaimed must be regarded as material, and since the amendment operates as a disclaimer of that difference it must be strictly construed against him. *Smith v. Magic City Kennel Club*, *supra*, 790; *Shepard v. Carrigan*, 116 U. S. 593, 598; *Goodyear Dental Vulcanite Co. v. Davis*, 102 U. S. 222, 228. As the question is one of construction of the claim, it is immaterial whether the examiner was right or wrong in rejecting the claim as filed. *Hubbell v. United States*, *supra*, 83; *I. T. S. Rubber Co. v. Essex Rubber Co.*, *supra*, 443. It follows that what the patentee, by a strict construction of the claim, has disclaimed—conductors which are carried by the table but not embedded in it—cannot now be regained by recourse to the doctrine of equivalents, which at most operates, by liberal construction, to secure to the inventor the full benefits, not disclaimed, of the claims allowed.

Plaintiff's Exhibits 5 and 7 do, and its Exhibits 6, 8, 9 and 10 do not, infringe. The judgments will be modified accordingly.

Modified.

MR. JUSTICE ROBERTS took no part in the consideration or decision of this case.

MR. JUSTICE BLACK, dissenting, with whom MR. JUSTICE DOUGLAS concurs:

I think the judgments below should be reversed in full.

There can be no infringement of a void patent, and a patent which shows neither invention nor discovery is void.¹ The mere application of an old mechanical in-

¹ *Dunbar v. Myers*, 94 U. S. 187; *Thompson v. Boisselier*, 114 U. S. 1; *Saranac Machine Corp. v. Wirebounds Co.*, 282 U. S. 704.

strument to a new use is not an invention and therefore not patentable.²

The combination patented here contains not a single new element. The whole device is nothing more than an electric switch mounted on a table, which closes and opens with the flexing and reflexing of an ordinary coil spring when hit by a rolling ball. The spring, standing upright on the table, serves as a target in a pin ball game, its resiliency being utilized not only to make and break the circuit but to make the ball rebound.

The Constitution authorizes the granting of patent privileges only to inventors who make "discoveries." And the statute provides for the granting of patents only to those who have "invented or discovered" something "new." To call the device here an invention or discovery such as was contemplated by the Constitution or the statute is, in my judgment, to degrade the meaning of those terms.

Patentees have rights given them by law. "But the public has rights also. The rights of both should be upheld and enforced by an equally firm hand, whenever they come under judicial consideration."³ By failing to assign error on the issue of patentability, parties to an infringement suit should not be permitted to foreclose a court from protecting the public interest. And here, as in other cases where there is plain error, we should notice it.⁴

² *Phillips v. Page*, 24 How. 164; *Paramount Publix Corp. v. Tri-Ergon Corp.*, 294 U. S. 464.

³ *Densmore v. Scofield*, 102 U. S. 375, 378.

⁴ *Sibbach v. Wilson & Co.*, 312 U. S. 1, 16.