This averment does not work an estoppel against the appellee and complainant below, for when the interference proceedings between Day and Hoppes resulted in the issuance of Hoppes' patent, and the consequent defeat of Day, the averment was withdrawn in an amended bill; but it has much probative force to show that the complainant below did regard the Day device as different from that patented to Stilwell, and owned by it. This, too, is the only effect of the circular referred to in the opinion. Counsel for appellee seem to think that the court has treated the circular as an estoppel. In this they are mistaken. Reference was made to it as evidence of the construction given to its own patent by the complainant below.

The motion for a rehearing is denied.

FORGIE v. OIL-WELL SUPPLY CO., Limited.

(Circuit Court, W. D. Pennsylvania. July 10, 1893.)

No. 18.

PATENTS FOR INVENTIONS—INVENTION—COMBINATION—OIL-WELL TOOLS.

Letters patent No. 422,879, issued March 4, 1890, to W. Forgie, for a wrench for oil-well tools, consisting in the adaptation of a lifting jack to produce a circular horizontal pressure against the arm of a wrench, for the purpose of screwing and unscrewing the tools, are void for want of invention, as this was only an adaptation of the jack to an analogous use, and as neither it nor the wrench perform any new function.

In Equity. Suit by William Forgie against the Oil-Well Supply Company, Limited, for infringement of a patent. Decree for defendant.

William L. Pierce, for complainant.
James I. Kay, for defendant.

Before ACHESON, Circuit Judge, and BUFFINGTON, District Judge.

BUFFINGTON, District Judge. W. Forgie brings this bill against the Oil-Well Supply Company, Limited, for alleged infringement of a patent for wrench for oil-well tools, applied for January 28, 1888, and to him granted March 4, 1890, and numbered 422,879. The respondent is the selling agent of the Duff Manufacturing Company, which latter is the manufacturer of the alleged infringing machine, and the real respondent in the case. The device in dispute is a jacking apparatus for screwing and unscrewing oil-well tools. The respondents allege their device is made under patents issued to one Barrett, and a suit against Forgie for alleged infringement thereof in his device was argued with this bill, and is disposed of in our opinion at No. 54, November term, 1891. 57 Fed. Rep. 748.

The present case turns upon two questions: (1) Was Forgie the inventor of the device? and (2) if so, is the device patentable? Tools

for drilling oil wells weigh from two to three thousand pounds, and the sections of the drill rod consist of a tapered or conical screw and socket, which must be tightly screwed together. The drilling is done by raising and dropping them constantly, oftentimes on solid rock, and they are liable to be jarred loose; in which event serious damage may follow. They must be frequently unscrewed, to sharpen the bits, or to use other tools. Under the old system this was thus done: To the floor of the derrick, concentric with, and about three and a half feet from, the hole, a quadrant iron bar was bolted, having at one end a strong pin, and from thence to the other end, at regular intervals, holes adapted to engage the end of a pinch bar. Two powerful wrenches were then placed at right angles to each other on the suspended drill rod, one above and one below the screw joint it was intended to tighten; one wrench stationary, and in engagement with the pin, the other free to be moved from the other end of the quadrant towards the pin. This was done by inserting the end of the pinch bar in the holes of the quadrant, and forcing the movable wrench, step by step, towards the pin, until the joint was tightened. The same process, the relative position of the wrenches being changed, unloosened the joint. While the process was crude, laborious, and at times required a number of men, the evidence does not show any effort to improve it, although powerful jacking mechanism was in common use for raising weights, and also for moving bodies vertically. Some time prior to February, 1887, Forgie conceived the idea of adopting a jacking mechanism to this use. The practical working out of this idea resulted eventually in the construction of the devices in these suits. In Forgie's device No. 1 the same wrenches we have described perform the same function, and accomplish the same result. The circular bar is provided with teeth, which are used as a shifting base for a movable jack, for the application of power, instead of the holes being used for that purpose with a pinch bar. Upon both sides of the bar a flange is placed, which fits into, and keeps from flying the track, a movable carriage, which contains the jacking mechanism. By means of this simple device, tools of much greater weight, and therefore more effective in drilling, are used, handled with greater ease, and with fewer men. It has gone into general use, and practically superseded the old method.

This brings us to the question, who was the inventor of this device? In February, 1887, Forgie first met Barrett, who was connected with the Duff Manufacturing Company. He was the patentee of the Barrett lifting jack, a powerful mechanism, then manufactured by that company, in common use, and a standard article. This jack was provided with a base, in which was a stationary jacking machine, and from which extended a lifting bar, which was forced upward against the weight desired to be moved. This lifting bar was kept in place by a rectangular slot in the cage surrounding the mechanism. The internal mechanism of the Barrett jack was adopted in Forgie's device, the cage being adapted to move on the circular track, instead of remaining stationary. Forgie claims

that when he applied to Barrett he had perfected his invention, and simply wanted it made; while Barrett contends that, apart from the abstract idea of applying a jack to oil-well wrenches, he had evolved nothing.

In considering the testimony we have not overlooked the second testimony of Forgie, taken without leave of court after the case had been closed, for objection thereto was waived at bar. In this Forgie enters with detail into the completeness of his invention, where he first met Barrett; a detail of facts which does not appear in his former testimony, and upon which the case was closed. His explanation of this is that his former counsel had not asked him these questions, but, in view of the fact that it was explicitly claimed in the answer that "Barrett was the inventor and originator of all the material and useful parts of said improvement, and that he communicated the same to William Forgie, and that said William Forgie surreptitiously applied for a patent upon the improvement of Josiah Barrett, and unlawfully obtained letters patent therefor;" that Barrett's testimony was given in detail to support these facts; that Forgie was then called in rebuttal, when he gave what we have called his first account,—we think we are justified in giving more weight to the first than to the second. If Forgie had invented the device previous to this meeting, the evidence fails to disclose any experimenting on his part, any sketches, drawings, models, or other footprints which usually mark the inventor's pathway; and, indeed, a year after, when he made application for a patent, there was no suggestion of any other mechanism than Barrett's jack. Whether Forgie knew of the mechanism of Barrett's jack before they met is not certain. In his answer to the bill in the other case, Forgie says, speaking of this meeting: "I was aware at said time that the said Barrett had not covered by his claims in his said letters patent the use of the appliances, otherwise than a lifting jack." In his first testimony, in answer to the question whether he had before that time known of the Barrett jack the company was then making, he says: "No; I don't believe I ever saw a Barrett jack before I went to them;" that in describing his invention to some one they sent him to Barrett, giving as a reason, "because he was making a jack similar, and would be a likely man to make them for me." When his later testimony was taken, he says the first time he saw it was in the fall or winter of 1886, at Kay's store, or at the Fairbanks Company, in Pittsburgh. Whether, as stated in the answer, he was acquainted with the very claims of Barrett's patent at the time of this meeting, or whether, as stated in his first testimony, he had not seen it before, and only went because some one suggested his going, or whether he saw it first in the fall or winter of 1886, one thing is certain,—that before this meeting he had made no study with a view of adapting the Barrett jack to unscrewing oil-well tools. Barrett's account of the meeting is as follows:

"Question. Please state the circumstances of your first meeting with Mr. Forgie. Answer. Mr. Forgie came to me about February. He said he had been di-

rected there from Kay Bros. & Co., Water street, and said he had seen my jack, and had an idea that it could be applied for wrenching and unwrenching oil-well jacks. He then proceeded to describe the old method of the circle plate and pinch bar, and described how difficult it was to unwrench and wrench the tools with this appliance. He then, at different points of his conversation, interjected that all he wanted would be the privilege of selling the jack, if I would get it up for that purpose. He then began to expatiate on the great power of my jack, and said if it could be applied to this purpose, it would do this work of wrenching and unwrenching the tools with ease, he thought. He then asked me if I couldn't get it up for this purpose. I told him that I had had some experience in oil-well drilling some years back, when I was trying an invention of mine on an oil-well, and I thought it would not be very difficult to do. There was a jack standing alongside of us on the floor, with the rack partly raised in the base, the foot of the bar projecting, of course. He pointed to that, and said, 'Could the wrench be placed between these two points?' and he pointed with his foot to the parts, and asked if the power could be applied, and the wrenches forced together. I said, 'Yes;' I thought it could be. Then he said, 'Could the rack be curved?' And I said, 'Yes; that wouldn't be impossible.' He then said: 'How would you construct this jack? What is your idea in regard to it?' I took this jack, and laid it on the table horizontally, (the jack being of the same construction as the model I have before me, only that it was a full-sized jack,) and told him I would shorten the base, and leave sufficient of the base project to allow the bars to rest upon it; that in its travel on the rack that the bars would not come in contact with the teeth of the rack, and I would increase the portion of the jack in thickness below the jaw of the base, where the handle enters. This would form an abutment for the wrench to rest against when pressure is brought to bear on them. I told him I would fasten the rack upon the floor of the derrick, and allow the carriage to travel on this rack. He then said: 'How would your carriage travel on the rack, when the base of the carriage surrounds the rack?' I told him I would make the rack T-shaped. Says he, 'How?' I took a pad off the desk, made a cross section of the rack, like that, [witness makes sketch,] and I would make a slot in the back of the base, with inwardly projecting flanges, to fit into this T-shaped portion of the rack. I would then extend little lugs or bosses out from this lower bottom flange, for bolts to go through, and fasten to the derrick floor sufficiently far to allow these bolts to pass this carriage in its travel on the rack, and reverse the foot on the bar the other way; that it would form an abutment for the other wrench to rest against. He then asked me if I thought it would work, and was practical. I told him I thought it was practical, but the best way would be to construct one, and put it on trial. I concluded to adopt No. 3 size of jack; that is the size we are making of an upright jack. By so doing we would require but two patterns to make, and two castings, and the strength of the rack could then be regulated by the bottom flange. I made arrangements then with Mr. Forgie that, in consideration of the fact that we would allow him the sole agency of this jack, I would expect him to furnish these two extra patterns and these castings, which he agreed to. I informed him that the best man I thought to make these patterns would be Mr. Rankin, as he had made all my jack patterns for my other jacks. I requested him to go and see Mr. Rankin, and make arrangements for having these patterns made, and I would go up and give him sketches and sizes, and all the necessary information, making these two patterns, which he evidently did. This was not all said and done at one meeting, but it all occurred within the first week of our meeting. Mr. Forgie was not there more than two or three times before I sent him to Mr. Rankin."

Mr. Forgie's account, when called in rebuttal, is as follows:

"Question. Please state exactly what was said by you and what was said by Mr. Barrett at this first meeting. Answer. Well, I described the machine, and we talked over several plans to accomplish the work. Mr. Barrett's sug-

gestion that I would adopt a straight ratchet bar, pivoted to the floor at a center of forty-five degrees angle from the tools, and let it pass the pivot, and to shove at a better angle, being opposed to the circle, claiming, as everybody else did, that the cage would shove itself off the track; but I prevailed upon using my own method, and he says, 'All right; go ahead.' Then we began to talk about the reversing apparatus; I demonstrating to Mr. Barrett how I could use a lever pivoted near one end, and a spring to hold it in place, for the reverse motion; but Mr. Barrett said, if he made the machine, that would necessitate him in making, in order to duplicate the part, new templets and jigs; and he says: 'Why not go on, and use this machine of mine. I have everything necessary to do the work with, and can do it much cheaper, and I know it will do the work.' Consequently we agreed upon that method, and I went to the pattern maker, and got the patterns made accordingly."

It will be observed that this account is confirmatory of Barrett's to a great extent. Both show that Forgie had no definite plan. Forgie says they talked over several; that the conclusion was that Barrett suggested the adopting of his own jack, and asserted, "It will do the work." This is in accord with Barrett's statement that he took up one of his jacks, and explained to Forgie how he would adapt it to the proposed use. The interior mechanism of the jack was concealed. Forgie had never seen one before. There is no evidence that it was taken apart, and the mechanism exposed; therefore, the person most competent to suggest its possibilities for adaptation was its patentee and constructor. If Forgie had any other mechanism in view, he neither suggested it then, nor, as we have seen, when he applied for a patent a year later, but embodied Barrett's jack in toto in his application. Nor is the fact to be lost sight of that Barrett placed his patent date on the pattern which Forgie had made under the arrangements between them; that, when Forgie replaced it with his own name, Barrett not only made him grind it off, but pay for a plate to replace it, on which was a reference to the Barrett patent. This branding the device as the embodiment of Barrett's ideas went without protest from Forgie when face to face with Barrett; conduct utterly at variance with the to-be-expected actions of an inventor of a successful machine, every distinctive feature and adaptation of which, outside the jack, was, according to his second account, thought out before he saw Barrett, and fully explained when they first met. This stamping of the jacks and the delivery of them by the Duff Company to Forgie continued almost a year. Barrett is corroborated by Rankin, a pattern maker, who says Forgie was a stranger to him; that he came to him, and told him to see Barrett, who was to give him instructions how to make the patterns; that Barrett gave him the plans; that he got no instructions from Forgie, except to go to Barrett; that there were some sketches made by either witness or Forgie; but that he could not have made a working plan of the cage from what Mr. Forgie said. "Mr. Forgie could not explain to me how the Duff Manufacturing Company or Barrett jack was made." We think also the evidence of complainant's own witnesses, Touhill and Zahnizer, as far as they go, corroborated Bar-

rett's contention. The former was a machinist in the Duff Company works, whom Barrett and Forgie went out to see. His testimony shows that Forgie had the idea of a circular track, that no other apparatus than Barrett's was discussed, and that Barrett thought he could use his. The latter was a machinist and oil-well tool maker. He says, in the fall of 1886 Forgie explained to him the idea of applying a jack to oil-well tools; said he did not have the mechanical parts completed; that he had three or four ideas at the time; that his whole idea was the principle of the jack applied to oil-well tools. After a careful examination of the proofs and facts of the case, we are of opinion that Forgie was not the sole and only inventor of the device embodied in his patent; that the idea of applying jacking mechanism to oil wrenches, and by circular motion, was his, but the plan and mechanism by which this was practically done, and for which his patent claims were allowed, was not his invention.

But, assuming the device in suit was Forgie's sole work, does it show patentability? It is to be noted that a jacking mechanism was old; indeed, that, when occasion required, it was used horizontally, as well as vertically; that when so used it was a matter of indifference whether the lifting bar moved, and the jacking mechanism was stationary, or vice versa. The device was adapted to both conditions, and whether the lifting bar or the jack frame moved depended on the comparative resistance of the bodies at either end. It should also be noted the lifting bar in the Barrett jack was kept in place by a suitable slot. Nor was a carriage, with a forcing mechanism, and moving on a toothed rack, a new thing in mechanics. In Poole's patent, No. 333,667, (1886,) we find a toothed track, a carriage with forcing mechanism moving thereon, and confined by a T-shaped flange and a corresponding slot. The forcing mechanism consisted of a cam plate engaging with the cogs, but there is no inherent difficulty in applying the principle of a jacking mechanism thereto. The wrenches were old, and their use in both methods is identical; and the quadrant bar as a base, shifting in an arc, for the application of power, was in common use. If there had been none of these, assuredly there would have been invention, and that of a high order, in the device in suit; but when Forgie conceived the abstract idea of adapting a jack mechanism to a circular forcing path, (and that is all he did,) the perfecting of this idea, with the means and appliances already in use, was to our mind in the sphere of construction, and not of invention. It is an element, though not a controlling one, that there were no previous attempts to reach this result. The old method was blindly followed, until Forgie thought of the use of a jack in place of human strength. As soon as this was suggested to one skilled in the construction of jacking mechanism, it was worked out at once. How rapid this was is shown by the fact that in ten days from the first meeting the very patterns were designed and completed, and the device, substantially in the form as afterwards manufactured, complete. That

the application of a jacking mechanism to oil-well wrenches was a decided step in advance must be conceded, and to Forgie must be given the credit of suggesting its use; but advance, or even discovery, is not synonymous with invention. While he has made an advance, he is not such a pioneer in a new field as should make an entire industry subject to tribute. The wrenches were old, and still perform the same function, and in the same way. A segmental bar affixed to the floor of the drill house, having apertures, with which the end of the pushing bar engaged, was also old, and the essence of the improvement was the mere substitution of the operating mechanism of the jack. Such a jack was taken in all its mechanical details, and adapted to the uses analogous to the purpose for which it had been used. The wrenches still operate simply as oil-well wrenches, the jacking mechanism simply as such; neither modifies the operation of the other. It is still the same jack, adapted to analogous uses, but performing no new functions, and the jack thus adapted not even the product of the alleged modifier's brain. We are of opinion the patent is void for lack of patentability.

ACHESON, Circuit Judge, concurs.

DUFF MANUF'G CO. v. FORGIE.

(Circuit Court, W. D. Pennsylvania. July 10, 1893.)

No. 54.

1. PATENTS FOR INVENTIONS—CONSTRUCTION OF CLAIMS—LIFTING JACKS.
Letters patent No. 312,316, issued February 17, 1885, to Josiah Barrett, for an improvement in lifting jacks, and which are restricted both in the specifications and claims by the use of the words "in a lifting jack," and the additional term "a lifting bar," cannot be extended so as to cover an adaptation of such jack to the production of a horizontal circular motion, for the purpose of unscrewing oil-well tools.

2. SAME—JACKS.
In letters patent Nos. 455,993 and 455,994, issued to said Barrett on subsequent applications, he states that his inventions relate "to the same general class of jacks as are set forth" in his preceding patent, No. 312,316, and have "practically the same object in view;" but elsewhere in the specifications he states that his invention "includes any device embodying its principle, whether the power is exerted in a vertical, horizontal, or other line." In No. 455,994 there is express reference to a contemplated "curvilinear" movement. In the claims of both patents the broad generic expression "in a jack" is used. *Held*, that these claims are broad enough to cover an adaptation of such jack to the production of a horizontal, curvilinear motion for the purpose of unscrewing oil-well tools.

In Equity. Bill for infringement of patents. Decree for complainant.

James I. Kay, for complainant.
Wm. L. Pierce, for defendant.