Then, said I to myself, if I can place the patient in that position, and distend the vagina by the pressure of air, so as to produce such a wonderful result as this, why can I not take the incurable case of vesico-vaginal fistula, which seems now to be so incomprehensible, and put the girl in this position and see exactly what are the relations of the surrounding tissues? Fired with this idea, I forgot that I had twenty patients waiting to see me all over the hills of this beautiful city. I jumped into my buggy and drove hurriedly home. Passing by the store of Hall, Mores & Roberis, I stopped and bought a pewter spoon. I went to my office where I had two medical students, and said, "Come, boys, go to the hospital with me."

"You have got through your work early this morning," they said.

"I have done none of it," I replied; "come to the hospital with me." Arriving there, I said, "Betsy, I told you that I would send you home this afternoon, but before you go I want to make one more examination of your case." She willingly consented. I got a table about three feet long, and put a coverlet upon it, and mounted her on the table, on her knees, with her head resting on the palms of her hands. I placed the two students one on each side of the pelvis, and they laid hold of the nates, and pulled them open. Before I could get the bent spoon-handle into the vagina, the air rushed in with a puffing noise, dilating the vagina to its fullest extent. Introducing the bent handle of the spoon I saw everything, as no man had ever seen before. The fistula was as plain as the nose on a man's face. The edges were clear and well-defined, and distinct, and the opening could be measured as accurately as if it had been cut out of a piece of plain paper. The walls of the vagina could be seen closing in every direction; the neck of the uterus was distinct and well-defined, and even the secretions from the neck could be seen as a tear glistening in the eye, clear even and distinct, and as plain as could be. I said at once, "Why can not these things be cured? It seems to me that there is nothing to do but to pare the edges of the fistula and bring it together nicely, introduce a catheter in the neck of the bladder and drain the urine off continually, and the case will be cured." Fired with enthusiasm by this wonderful discovery, it raised me into a plane of thought that unfitted me almost for the duties of the day. Still, with gladdened heart, and buoyant spirits, and rejoicing in my soul, I went off to make my daily rounds. I felt sure that I was on the eve of one of the greatest discoveries of the day. The more I thought of it, the more I was convinced of it.

I immediately went to work to invent instruments necessary for performing the operation on the principles that were self-evident on the first inspection of the first case. The speculum, or retractor, was perfectly clear from the very beginning. I did not send Lucy home, and I wrote to her master that I would retain her there, and he must come and see me again. I saw Mr. Wescott, and I told him that I was on the eve of a great discovery,
and that I would like to have him send Anarcha back to my hospital. I also wrote to Dr. Harris, saying that I had changed my mind in regard to Betsey, and for him to send her back again. I revamped the country for cases, told the doctors what had happened and what I had done, and it ended in my finding six or seven cases of vesico-vaginal fistula that had been hidden away for years in the country because they had been pronounced incurable. I went to work to put another story on my hospital, and this gave me sixteen beds; four beds for servants, and twelve for the patients. Then I made this proposition to the owners of the negroes: If you will give me Anarcha and Betsey for experiment, I agree to perform no experiment or operation on either of them to endanger their lives, and will not charge a cent for keeping them, but you must pay their taxes and clothe them. I will keep them at my own expense. Remember, I was very enthusiastic, and expected to cure them, every one, in six months. I never dreamed of failure, and could see how accurately and how nicely the operation could be performed.

It took me about three months to have my instruments made, to gather the patients in, and to have everything ready to commence the season of philosophical experiment. The first patient I operated on was Lucy. She was the last one I had, and the case was a very bad one. The whole base of the bladder was gone and destroyed, and a piece had fallen out, leaving an opening between the vagina and the bladder, at least two inches in diameter or more. That was before the days of anaesthetics, and the poor girl, on her knees, bore the operation with great heroism and bravery. I had about a dozen doctors there to witness the series of experiments that I expected to perform. All the doctors had seen my notes often and examined them, and agreed that I was on the eve of a great discovery, and every one of them was interested in seeing me operate. The operations were tedious and difficult. The instruments were on the right principle, though they were not as perfect as they were subsequently, and improvements had to be made slowly. I succeeded in closing the fistula in about an hour’s time, which was considered to be very good work. I placed my patient in bed, and it does seem to me now, since things were so simple and clear, that I was exceedingly stupid at the beginning.

But I must have something to turn the urine from the bladder, and I thought that if I could make a catheter stay in the bladder I could succeed. But I knew that the books said that the doctors had tried to do it for ages past and had never succeeded. The great Würzzer, of Germany, attempted to cure fistula, many years ago, and, failing to retain the catheter in the bladder, he adopted the plan of fastening the patient face downward, for a week at a time, to prevent the urine from dripping through into the vagina. I said, “I will put a little piece of sponge into the neck of the bladder, running a silk string through it. This will act as a capillary tube; the urine will be turned, and the fistula cured.” It was a
very stupid thing for me to do, as the sequel will show. At the end of five days my patient was very ill. She had fever, frequent pulse, and real blood-poisoning, but we did not know what to call it at that day and time. However, I saw that everything must be removed; so I cut loose my sutures, which had been held by a peculiar mechanical contrivance which it is not necessary here to detail. Then I attempted to remove the little piece of sponge from the neck of the bladder. It was about two inches long. One inch occupied the urethra, half an inch projected into the bladder, and half an inch into the meatus. As soon as it was applied, the urine came dripping through, just as fast as it was secreted in the bladder, and so it continued during all the time it was worn. It performed its duties most wonderfully; but when I came to remove it I found what I ought to have known, that the sponge could not rest there simply as a sponge, but was perfectly infiltrated with fabulous matter, and was really stone. The whole urethra and the neck of the bladder were in a high state of inflammation, which came from the foreign substance. It had to come away, and there was nothing to do but to pull it away by main force. Lucy's agony was extreme. She was much prostrated, and I thought that she was going to die; but by irrigating the parts of the bladder she recovered with great rapidity, and in the course of a week or ten days was as well as ever.

After she had recovered entirely from the effects of this unfortunate experiment, I put her on a table, to examine and see what was the result of the operation. The appearance of the parts was changed entirely. The enormous fistula had disappeared, and two little openings in the line of union, across the vagina, were all that remained. One was the size of a knitting-needle, and the other was the size of a goose-quill. That encouraged me very much in the operation, for I said, "If one operation can produce results such as this, under such unfavorable circumstances, why may it not be perfectly successful when I have something to draw the urine that will not produce inflammation of the soft parts?"

This operation was performed on the —— day of December, 1845. It inaugurated a series of experiments that were continued for a long time. It took Lucy two or three months to recover entirely from the effects of the operation. As soon as I had arranged a substitute for the sponge, I operated on Betsey. The fistula was favorable, and would be considered a favorable one at the present day. Of course, I considered it very unfavorable. The fistula occupied the base of the bladder, and was very large, being quite two inches in diameter. I repeated the operation, in the same way and manner as performed on Lucy, with the exception of placing in the bladder a self-retaining catheter, instead of the sponge. I started out very hopefully, and, of course, I waited anxiously for the result of the operation. Seven days rolled around; she had none of the chills or fever, either violent or sudden, or the disturbance attending the previous operation. At the end of seven days the
sutures were removed. To my great astonishment and disappointment, the operation was a failure. Still, the opening had been changed entirely in character, and, instead of being two inches in diameter, it was united across entirely, with the exception of three little openings, one in the middle, and one at each end of the line of union. The line of union was transverse.

I thought I could make some improvements in the operation, and Anarcha was the next case. Anarcha was the first case that I had ever seen, having assisted Dr. Henry in her delivery. She had not only an enormous fistula in the base of the bladder, but there was an extensive destruction of the posterior wall of the vagina, opening into the rectum. This woman had the very worst form of vesico-vaginal fistula. The urine was running day and night, saturating the bedding and clothing, and producing an inflammation of the external parts wherever it came in contact with the person, almost similar to confluent small-pox, with constant pain and burning. The odor from this saturation permeated everything, and every corner of the room; and, of course, her life was one of suffering and disgust. Death would have been preferable. But patients of this kind never die; they must live and suffer. Anarcha had added to the fistula an opening which extended into the rectum, by which gas—intestinal gas—escaped involuntarily, and was passing off continually, so that her person was not only loathsome and disgusting to herself, but to every one who came near her.

I continue my experiments.

I made some modifications in the suture apparatus, such as I thought important, and in the catheter, and then operated on the fistula of the bladder. But, like the others, she was only partially cured. The large fistula was contracted, leaving only two or three smaller ones in the line of union, as in the other two instances. The size of the fistula makes no difference in the involuntary loss of urine. It will escape as readily and as rapidly through an opening the size of a goose-quill as it will when the whole base of the bladder is destroyed. The patient is not cured so long as there is the involuntary loss of a single drop of urine. It would be tiresome for me to repeat in detail all the stages of improvement in the operation that were necessary before it was made perfect. These I have detailed in a surgical history of the facts, and to professional readers are still well known. Besides these three cases, I got three or four more to experiment on, and there was never a time that I could not, at any day, have had a subject for operation. But my operations all failed, so far as a positive cure was concerned. This went on, not for one year, but for two and three, and even four years. I kept all these negroes at my own expense all the time. As a matter of course this was an enormous tax for a young doctor in country practice. When I began the experiments, the other doctors in the city were all willing to help me, and all seemed anxious to witness the operations. But, at last, two or three years of constant failure and fruitless effort rather made my friends tired, and it was with difficulty
that I could get any doctor to help me. But, notwithstanding the repeated failures, I had succeeded in inspiring my patients with confidence that they would be cured eventually. They would not have felt that confidence if I had not felt confident too; and at last I performed operations only with the assistance of the patients themselves.

So I went on working without any progress, or at least permanent result, till my brother-in-law, Dr. Rush Jones, came to me one day, and he said:

"I have come to have a serious talk with you. When you began these experiments, we all thought that you were going to succeed at once, and that you were on the eve of a brilliant discovery that would be of great importance to suffering humanity. We have watched you, and sympathized with you; but your friends here have seen that of late you are doing too much work, and that you are breaking down. And, besides, I must tell you frankly that with your young and growing family it is unjust to them to continue in this way, and carry on this series of experiments. You have no idea what it costs you to support a half-dozen niggers, now more than three years, and my advice to you is to resign the whole subject and give it up. It is better for you, and better for your family."

I was very much surprised at what he said. But I said: "My dear brother, if I live I am bound to succeed; and I am as sure that I shall carry this thing through to success as I am that I now live, or as sure as

I can be of anything. I have done too much already, and I am too near the accomplishment of the work to give it up now. My patients are all perfectly satisfied with what I am doing for them. I can not depend on the doctors, and so I have trained them to assist me in the operations. I am going on with this series of experiments to the end. It matters not what it costs, if it costs me my life. For, if I should fail, I believe somebody would be raised up to take the work where I lay it down and carry it on to successful issue."

The experiments were continued at least a year after this conversation with Dr. Jones. I went on improving the methods of operating, eliminating first one thing and then another, till I had got it down to a very simple practice. Then I said: "I am not going to perform another operation until I discover some method of tying the suture higher up in the body where I can not reach." This puzzled me sorely. I had been three weeks without performing a single operation on either of the half-dozen patients that I had there. They were clamorous, and at last the idea occurred to me about three o'clock one morning. I had been lying awake for an hour, wondering how to tie the suture, when all at once an idea occurred to me to run a shot, a perforated shot, on the suture, and, when it was drawn tight, to compress it with a pair of forceps, which would make the knot perfectly secure. I was so elated with the idea, and so enthusiastic as I lay in bed, that I could not help waking up my kind and sympathetic wife and telling her of the
simple and beautiful method I had discovered of tying the suture. I lay there till morning, tying the suture and performing all sorts of beautiful operations, in imagination, on the poor people in my little hospital; and I determined, as soon as I had made my round of morning calls, to operate with this perfected suture. Just as I had got ready to perform my operation I was summoned to go twenty miles into the country, and I did not get back until late in the night. I looked upon it as a very unfortunate thing, and one of the keenest disappointments of my life, because it kept me from seeing all the beautiful results of my method. However, the next day, in due time, the operation was performed on Lucy. When it was done, I said, "Could anything be more beautiful? Now I know that she will be cured very soon, and then all the rest must be cured." It was with great impatience that I waited a whole week to see what the result of the operation would be. When I came to examine it, it was a complete failure.

I then said to myself, "There must be a cause for this. I have improved the operations till the mechanism seems to be as perfect as possible, and yet they fail. I wonder if it is in the kind of suture that is used? Can I get some substitute for the silk thread? Melton, of Virginia, had used lead, and I had used a leaden suture and failed. What can I do?" Just in this time of tribulation about the subject, I was walking from my house to the office, and picked up a little bit of brass wire in the yard. It was very fine, and such as was formerly used as springs in suspenders before the days of India-rubber. I took it around to Mr. Swan, who was then my jeweler, and asked him if he could make me a little silver wire about the size of the piece of brass wire. He said yes, and he made it. He made it of all pure silver. Anarcha was the subject of this experiment. The operation was performed on the fistula in the base of the bladder, that would admit of the end of my little finger; she had been cured of one fistula in the base of the bladder. The edges of the wound were nicely denuded, and neatly brought together with four of these fine silver wires. They were passed through little strips of lead, one on one side of the fistula, and the other on the other. The suture was tightened, and then secured or fastened by the perforated shot run on the wire, and pressed with forceps. This was the thirtieth operation performed on Anarcha. She was put to bed, a catheter was introduced, and the next day the urine came from the bladder as clear and as limpid as spring water, and so it continued during all the time she wore the catheter. In all the preceding operations, where the silk was used for a suture at the base of the bladder, cystitis always resulted. The urethra was swollen continually, and the urine loaded with a thick,ropy mucus. With the use of the silver suture there was a complete change in these conditions.

I was always anxious to see the result of all experiments; but this was attended with such marked symptoms of improvement, in every way, that I was more.
anxious now than ever. When the week rolled around— it seemed to me that the time would never come for the removal of the sutures—Anarcha was removed from the bed and carried to the operation-table. With a pul-
pititating heart and an anxious mind I turned her on her side, introduced the speculum, and there lay the suture apparatus just exactly as I had placed it. There was no inflammation, there was no tumefaction, nothing unnatural, and a very perfect union of the little fistula.

This was in the month of May, I think, though possibly it was June (1849). In the course of two weeks more, Lucy and Betsey were both cured by the same means, without any sort of disturbance or discomfort. Then I realized the fact that, at last, my efforts had been blessed with success, and that I had made, perhaps, one of the most important discoveries of the age for the relief of suffering humanity.