

# APPENDIX

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## VINDICATION

OF CLAIMS

TO CERTAIN INVENTIONS AND IMPROVEMENTS

IN THE

## GRAPHIC ART.

BY ASA SPENCER.

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*Editorial Remark.*—This communication came too late for insertion in the body of this number. By Mr. Spencer's desire, it is added in the present form. Although we are averse to controversy, we cannot object to the vindication of the just claims of individuals, especially when a discussion is conducted as in the present case, by both parties with perfect courtesy, and a disposition to do, as well as to claim justice.

Philadelphia, July 20, 1842.

*Gentlemen*—A few days since an acquaintance directed my attention to your very valuable work, entitled "A Manual of Coins and Bullion," published at the Assay Office of the Mint.

On looking over the sixth chapter, which contains a description of the plates, I was surprised to see in a work from such an enlightened quarter, so erroneous on account of the origin and progress of the medal-ruling machine, by which it is made to appear that the invention and improvement of the machine, belong exclusively to two gentlemen of the Mint, and I am spoken of as a mere copier from Mr. Gobrecht.

I will endeavor to give a plain and simple history of the whole affair. In the fall of 1816, I came to this city with Mr. Jacob

Perkins, whose object was, in conjunction with Messrs. Murray, Fairman & Co., to introduce into the art of bank-note engraving, a new and original style of work, the production of a machine invented by me, and called the Geometric Lathe. Mr. Gobrecht was, at that time, employed in the same establishment, which afforded us frequent opportunities of conversing on subjects connected with the business. He talked much concerning ruling machines—had a great desire to possess one, and told me he had attempted to make one, to be moved by a screw, but that it failed from the imperfection of the screw. He thought, however, that by the aid of such means and implements as were then in my possession, he could be furnished with a screw of sufficient accuracy for the purpose. I undertook to assist him; but had not proceeded far when I became convinced, that the plan we were upon would not answer. Having, however, embarked in the enterprise, I was unwilling to give it up, and began immediately to study some other plan; when a modification of the wheel and axle, like that of the plating mill, was fixed upon by me. I then made known to Mr. Gobrecht my entire want of faith in his old plan, and described to him my new one, in which I had the fullest confidence. He, however, was not pleased with it, and seemed loath to give up his own, but after consulting with Mr. Perkins, who gave a decided preference to my plan, and spoke in the highest terms of it, he became anxious to have the first machine on the new plan. I undertook it for him; my other engagements made it necessary, that I should get it up in the simplest form, and with the least possible labor. I had previously to this furnished Mr. Gobrecht, at his request, with a very simple plan for ruling waved lines, taken from a movement in the Rose Engine, and easily attached to any ruling machine, consisting of an arm or lever, with a point or touch, as it is called in the Rose Engine, resting on a waved surface and kept in contact with it by a suitable weight or spring. This touch being connected with the slide which carries the etching point, and made to move over the waved surface or model, a vibratory motion thus caused was, by joints adjusted for the purpose, communicated to the etching point.

Thus the machine was placed in Mr. Gobrecht's hands, with the exception, merely, of the waved surface or model, which was left for him to supply, to suit himself. This last appendage to

the machine, (taken from the Rose Engine,) had not been in operation when he took it away. I have no recollection of having heard Mr. Gobrecht speak of the machine afterwards.

Soon after the delivery of it, Mr. Gobrecht exhibited his representation of the head of the Emperor Alexander. The novelty of its appearance attracted great attention, and was a subject of eager inquiry among the curious, as to how it was done, but Mr. Gobrecht maintained a rigid silence on the subject. It remained a profound and guarded secret, until I had prepared a machine of the same kind for my own use, and taken it to London, whither my business called me, and where it was finished and put in operation by me; and then and there, for the first time, I saw the appendage for ruling waved lines, in action, and was surprised to see with what truth and accuracy the model was represented on the plate under the etching point. The idea of changing the model immediately suggested itself. The waved model was removed, and a shilling put in its place, when a tolerable copy was at once produced. A distinguished machine-engraver tried the same experiment by my directions, at his place in Somerstown near London, with great success. When I asked him how he had succeeded, his answer was, "perfectly, it would not only copy the waved model, but any device that I put under the touch."

During my stay in London, nothing was done to bring the art of medal ruling into notice. On my return to Philadelphia, I was the first to unveil the mystery of medal ruling, but being deeply engaged in introducing improvements in bank-note engraving, I gave no attention to it until about 1826 or '7, when thinking it might afford an additional security against counterfeiting, I put my machine a little in order for experimenting, and executed a large plate, containing medals, a copy of which I herewith send you. The work was much admired. Impressions from the plate soon found their way to Europe, and excited to exertion the ingenious mechanics of London and Paris. Mr. Saxton of this city also exercised his ingenuity on the subject. I do not perceive, however, in these specimens a greater degree of perfection than in my own. I find not the least difficulty in believing, that Mr. Saxton was enabled, by his own scientific skill, to remove the cause of the distortion. When this defect was pointed out to me in my specimen, which was not till some time after it was done, (it was not very glaring, and, in low relief, would not have

been noticed,) I took an opportunity to search for the cause, and when found, it was, in my machine, remedied with great ease. I had only to lower the medal, allowing the touch to follow it down, until a line, drawn from the point of contact to the joint or fulcrum on which the touch turned, was at the proper angle of descent, and from the great number of productions which I have examined, there must be many besides Mr. Saxton and myself, who have got over the difficulty with the same ease.

I have been thus circumstantial, in order to shew how the result was arrived at. The circumstances which I have detailed will be recollected, in general, by all those who were in the establishment of Murray, Fairman & Co. at the time, but fully and particularly remembered by Mr. Gobrecht. All of this may have little to do, perhaps, with medal ruling in the abstract, the origin of which, in its truth and simplicity, may be made known in a few words. No one's ingenuity was taxed for this particular purpose. The movement taken from the Rose Engine, and by me applied to a ruling machine of my own invention, was designed for procuring waved lines and nothing more. When it was put in motion, it copied the wave with great truth and precision, and at the same time manifested, in a manner not to be mistaken, the fact, that it had also the power of copying medals with equal exactness and beauty.

In your account also it is said, that copies could not be taken *immediately* from the coins, because the picture would be reversed and the legends would read backwards, and that it was, therefore, necessary to obtain the impressions in metal hard enough to bear the tracer, and that without the seasonable invention of the electrotype by M. Jacobi, the work could not have gone on.

The modern art which you speak of, ingenious as it most certainly is and useful for many purposes, does not seem to me to be necessary, nor even called for in copying coins. The copies which I send you were taken sixteen years ago from the *original* medals. The devise may be reversed on the plate, simply by having the plate supported with its face *down* and the etching point pressed *up* to it, or by bringing the touch to act on the medal in the same way. Impressions of coins or medals, *if necessary at all*, are obtained with great facility in *shellac*, a material far preferable, in my opinion, to any metal whatever for such purpose, as it resists the tracer perfectly and causes no wear to its point.

relative thus addressed you on this subject, because I am interested in it, and because my name has been introduced into your work, in such a manner as to create the impression, that I was but a borrower from others of a machine, of which I was, in fact, the first and original inventor.

I am sure, gentlemen, that you will excuse the trouble which I give you in this communication. You are artists yourselves, and know, therefore, with what a jealous pride professional reputation ought to be guarded. I should be the last man to deprive another of any portion of his just desert, and I am equally unwilling that others should treat me with the like injustice.

Your obedient servant,

ASA SPENCER.

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Philadelphia, July 26, 1842.

Sir—We have to acknowledge the receipt of your communication of the 21st inst., in which you object to the account we have given, in our “Manual of Coins and Bullion,” of the origin and progress of the art of medal ruling, and complain that we “have introduced your name into our work, in such a manner as to create the impression that you were but the borrower from others of a machine, of which you were, in fact, the *first* and *original* inventor.”

We can assure you that we feel great anxiety to do exact justice, as to the claims for an ingenious invention to which we owe so much, and that we would gladly take the earliest opportunity of correcting any error into which we might have fallen.

We cannot think, however, that you have ground for complaint, when we have before us the following original certificates; the first under your own signature, the second under that of a gentleman now an officer in one of the branch mints, and a man of unimpeached veracity. The first was published in the U. S. Gazette, and is as follows:

“I did not see the article in the U. S. Gazette of July 17th, signed Justice, concerning the invention of a ruling machine, before it appeared in print, consequently could not prevent the error contained in that article, which has since been pointed out to me. I take this opportunity to correct it, by saying, that it was never intended to deny, but always to admit, that Mr. Gobrecht was the

first to discover the mode of ruling medals, as exhibited by his specimen, published in 1817.

(Signed,)

ASA SPENCER."

Philadelphia, Aug. 8, 1830.

*Second certificate.*—"I do hereby certify, that in the year 1816, being then employed by Messrs. Murray, Draper, Fairman & Co. in their establishment, with Mr. Gobrecht and Mr. Spencer, I was in the knowledge of the circumstance of Mr. Gobrecht's employing Mr. Spencer to make for him a ruling machine, the plan of which was, that the plate was to be moved under the ruler by means of a screw, and a machine was actually commenced to operate on this principle. The screw, however, was abandoned, and the machine was constructed so as to graduate with a roller, and merely to divide and rule straight lines. While this machine was constructing, Mr. Gobrecht explained to me a plan he had invented, to copy, by a ruling machine, medals, and surfaces slightly or deeply undulated, which he wished me to keep a secret, as it might be of great importance, and before June, 1817, he shewed me his machine, with the part attached to copy medals and surfaces, which was constructed by himself, and in successful operation. At the same time he shewed a head of Alexander, executed by means of the machine.

(Signed,) D. H. MASON, *Machinist and Engraver.*"

July 26, 1839.

The above statements establish all the claims of Mr. Gobrecht. You certainly made the ruling machine for him, and doubtless, with your well known skill and ingenuity; but it was without the appendage necessary to adapt it for medal ruling. Your alteration of Mr. Gobrecht's plan of moving the platform, appears to have possessed no advantages; at any rate, Mr. Saxton has adopted the screw in the last instrument of his construction.

It surprises us that you make light of Mr. Saxton's device for removing the *distortion* produced by the original machine-engraving; and that you seem to suppose that the means of overcoming this defect, are so obvious as to have occurred "to many besides Mr. S. and yourself." Now we think, on the contrary, that the principle employed by Mr. Saxton, is exceedingly ingenious and by no means obvious. Many sagacious persons who have seen it in operation, have not been able to understand the principle upon which it acts; and it is certain that the art of medal

ruling was long kept dormant and useless for the want of some plan for remedying the distortion. Mr. Saxton brought his improvement into successful action in 1829, and made no secret of it. The method you employ is essentially the same. Does it date as early?

In conclusion we freely declare, that the art of machine-engraving is under great obligation to you for bringing it before the public, both in Europe and America, and for applying it, with great skill and taste, to many important purposes. In any history of the invention, however brief, your name must necessarily have a place. It is introduced in our description; and although more might have been said of your agency, it would have imposed on us a necessity of dwelling upon the merits of many others, such as Terrel, Bate, Collas and Nolte, who have done much to bring this brilliant discovery into public notice and favor, which would have led us into a narrative diffuse and out of place.

Sensible of the polite and respectful manner of your letter, we have endeavored to reply in the same spirit, and now subscribe ourselves,

Your faithful servants,

JACOB R. ECKFELDT,  
WM. E. DU BOIS.

A. Spencer, Esq.

Gentlemen—I duly received your answer under date of the 26th July. I have been necessarily delayed in my reply.

I regret that I am compelled once more to call your attention to the subject of my former communication, which, however, I do with the less reluctance, as I am fully persuaded of the sincere desire which you express to do exact justice and correct any error into which you may have fallen.

What I complain of as unjust to myself is this, that in your work it is stated that you were indebted to Mr. Gobrecht for the art of medal ruling, and that the first specimen was executed by him, with a machine of his *own invention*, whereas, in fact, the specimen was by the machine which I invented and made for him, and by means of an appendage to it, suggested and furnished by myself.

I never pretended that my invention of *this* ruling machine, or the plan or principle on which it works, has more to do with rul-

ing medals, than any *other* ruling machine on any other principle; but as a passage in your communication seems to intimate something of that sort, I beg leave to make a few remarks on that subject.

Early in 1817, when I undertook the making of a ruling machine, the only means tried for moving one, were two modifications of the inclined plane, viz. the wedge and the screw. Only the former was then in use. Two machines constructed on this plan were in this city, and were supposed to be the only two ever made in this country. Mr. Richard Fairman, of our establishment, owned one of them, and its possession was thought to give him great advantages over other artists. A ruling machine in those days was considered an important acquisition, but to get up one on the wedge principle was such a formidable undertaking that few had the resolution to encounter it. It was an awkward and unwieldy contrivance, and though the wedges or inclined planes were six or eight feet in length, its range of work was only three or four inches, and the working of it was laborious, slow and tedious. I had therefore only the screw to look to. It is very desirable that a ruling machine for the ordinary work of the engraving office, should be so constructed, that various parts of the plate may be brought under the etching point with facility and despatch. I could hit upon no way of doing this with the screw, without more labor than I had to spare. I therefore gave it up, and took in its place the principle of the wheel and axle, which I thought admirably adapted to the purpose. All the essential parts were of simple forms, and required no extraordinary skill or implement to produce them; its movement was light and easy, the carriage could be shifted from one point to another without trouble or delay; its dimensions were not more than one third of those of the wedge machine, and its range was six times as great. These advantages were obvious and decisive. Mr. Fairman gave up his wedge machine, and lost no time in procuring one on my plan, and when seen in London, it met with the decided preference of the most eminent engravers of that city.

You say that the machine which I had made for Mr. Gobrecht, was without the appendage necessary to adapt it to medal ruling. I assert that Mr. G. had already been put in possession of this appendage by me, and at my suggestion, before the machine was



commenced, and that it was constructed with special regard to the adaptation of this appendage for waved line ruling. The slide with joints of peculiar construction was wanted only for that purpose, and was not known or used in any other ruling machine.

In your reply, two certificates are brought forward to show that no ground of complaint exists on my part—the first under my own signature, and the second, that of Mr. Mason.

In my communication I admitted—I always admitted, that Mr. Gobrecht was the first to discover the mode of ruling medals by a machine; or in other words, that he was the first to discover, that the appendage which I suggested and prepared for his machine, for ruling *waved* lines, was equally capable of ruling *medals*. I do not see that my certificate admits more than this, and nothing more was intended by it. Nothing more was due. It was drawn from me much against my will, during a newspaper discussion, which arose without my knowledge, advice or suggestion. I felt extreme reluctance to be dragged into public controversy, for which I lacked time, inclination and ability, and it would, moreover, have been very disagreeable to those with whom I was connected in business. And I was willing thus to terminate the dispute. The first part of Mr. Mason's certificate agrees with my statement. The difference which appears in the other parts is unessential, or is reconcilable therewith, without an imputation in the least degree unfavorable to any one. Mr. Mason himself is well known to me, and is justly respected by all who know him for his integrity and professional skill. The only discrepancy which I can perceive, is in that portion of his certificate where it is said, that "when the machine was *constructing*, Mr. Gobrecht explained to me a plan he had *invented* to copy, by a ruling machine, *medals*, and surfaces slightly or deeply undulated." The plan here spoken of is undoubtedly the one suggested and furnished by me to Mr. Gobrecht. Although Mr. G. was in possession of this plan before the machine was commenced, it is not easy to suppose that Mr. G. more than myself, anticipated *medal* ruling from it. The supposition is not unreasonable, nor altogether improbable, that when Mr. G. made his confidential disclosure to Mr. Mason, it being new to him, he supposed, of course, that it was Mr. Gobrecht's invention, and if at this time the machine was finished and in Mr. G.'s possession, he knew

that it would copy medals. These suppositions are rendered the more probable to me by the way in which Mr. Mason related the matter to me. He said Mr. Gobrecht invited him into his private room, showed him a machine of his invention for ruling medals, and exhibited as a specimen of its work a copy of the Alexander medal. Thus was conveyed to my mind the belief, that this was the first time that Mr. Mason had seen or heard of medal ruling.

It is remarkable that the Rose Engine, with one of its movements so identical with that of medal ruling, should have been so long in use without leading to that art. Perhaps a simple description of its action in the Rose Engine and in the ruling machine, may not be out of place here. The Rose Engine has two principal movements; one circular, the other lineal. The latter is adapted to ruling waved lines, which, in fact, it does in the Rose Engine. A waved surface of hard metal is fixed to the machine, a tracer is adjusted to the model, and a cutter to the plate that is to be engraved. The machine is put in motion, when a waved line is cut on the plate. The plate is then advanced a step, the motion is repeated and another line is cut. Thus a series of lines is continued until the work is done; and as the tracer passes always on the same line over the model, the lines on the plate are similar. To show more clearly the result of this movement in the Rose Engine and in the ruling machine, I have prepared two specimens, one from each.

I have taken for a model the word "Londini" in raised letters. The first series is after the manner of the Rose Engine, the plate alone being moved, the tracer passing always on the same line, which you may perceive is just where the right hand thin stroke of the N joins the thick one. The model is then fixed to the carriage, and made to move with the plate. The tracer is placed on the plane, a few lines above the letters; the ruling is commenced and carried on until the tracer comes on the same line on which it acted during the first series. The first series is made up of one minute section of the model, and, consequently, can give no indication of the device that may be on it. In the second series, where the model moves with the plate, a different section of the model is brought under the tracer at every line. A course of minute sequent sections is marked on the plate, and, these imbodyed, show the device on the model.

**Thus this movement, when it is attached to any ruling machine, and the model and plate move together, must necessarily show any one that it can rule medals.**

I am truly sorry if any thing which I have said is construed to imply the least disrespect for the ingenious contrivance of Mr. Saxton, for removing the distortion. Certainly it was very remote from my intention to speak slightly of him or his device. Such injustice would do little credit to my judgment or candor. No one acquainted with that gentleman's extraordinary skill, will be at all surprised at the ingenuity of his contrivance. All that I meant to say is, that I, being limited as to time and resources, was constrained to economy, and forced to use a different and a simpler method of remedying the difficulty. "Mr. Saxton brought his improvement into successful action in 1829, and made no secret of it." You say the method employed by me is essentially the same, and ask if it dates as early. I cannot say precisely at what time it was done, though I am quite certain it was sometime *after* that year, but long before I had any knowledge that Mr. Saxton had done any thing in that way. Although I had no idea *how* the thing was done, I had seen that it *was* done before I attempted it. I lay no claim to originality in removing distortion. Candor also compels me to confess how little I deserve your compliments for extending, improving and applying the art of medal ruling.

I have always said and always endeavored to maintain, that it *originated* with me, in consequence of my attaching the Rose Engine movement to the ruling machine, for the purpose of ruling *waved* lines; and that the result was, that the first three persons who put this appendage in action for ruling *waved* lines, obtained, *each*, something like a copy of a *medal* at the same time.

Here the affair rested. Nothing was done for the machine, to improve or enlarge its medal-ruling power, until I revived the art about the year 1827. The want of leisure limited the use of it to our own business of bank-note engraving. It was not long after this that my specimens made their appearance in London. Although my machine was known there in 1820, not enough of medal ruling had been seen to attract attention. But the appearance of these specimens soon excited the ingenuity of different artists, and about 1830, we find Bate of London, Collas of Paris, and Mr. Saxton, powerful competitors in this art, the importance of which was soon manifested in their various labors.

You will observe therefore, in conclusion, gentlemen, that I claim the invention as well as the construction of the machine which was furnished to Mr. Gobrecht in 1817, and also that I was the first to adapt the Rose Engine appendage to the ruling of waved lines by it, in which this art originated. I never claimed to be the first to use it or discover its use for copying medals. Indeed for two years after its construction, I was ignorant, in common with others, of the mode in which this was done, although I discovered it, as I have already stated in my first communication, immediately on using the machine myself.

I might then if I had not been too much immersed in my professional concerns, and too reluctant to engage in controversy, easily have established beyond contradiction, every fact which I have here asserted. I hope I have convinced you of the mistake into which you have fallen. It cannot seem strange that I should be mortified, if in such a standard work as yours, an error so unjust to me should remain uncorrected.

Your obedient servant,

ASA SPENCER.