

Correspondence.

Work of Amateur Electricians.

To the Editor of the Scientific American:

Noticing your request, "electrical amateurs please report," I take leave to state that I made a four-cell battery like the one described in the SCIENTIFIC AMERICAN, with the exception that I cast my zinc plates from ordinary sheet zinc, and made my carbon plates by binding together carbon pencils obtained from the electric lamps. I also fastened all my plates for the four cells in one piece of wood, so that I could lift them all out of the tumblers at the same time.

I use in connection with the battery an induction coil, a small Gramme motor, described in "Experimental Science," electric bells and electro-magnets, all of my own construction. I also use it to light a two-candle power Edison electric lamp of 4.2 volts, which it lights brilliantly. H. A. DAWLEY.

Chillicothe, O., October 6, 1890.

To the Editor of the Scientific American:

My experience in making electric motors, according to directions in your valuable paper, is as follows:

I first made simple electric motor with ring armature, but could only get on ten coils No. 16. It gave good results. I then made one two-thirds size linear, with drum armature wound with No. 18, and having two layers only on armature. This ran sewing machine very well.

My last is a vertical single limb machine with cast iron field magnets. Core circular, $1\frac{1}{4}$ inches diameter, $2\frac{1}{2}$ inches long. Pole pieces, $2\frac{1}{2}$ inches broad, bore $2\frac{1}{8}$ inches diameter. The cores are wound with No. 18. About 390 turns on each leg, having eight layers, in four coils of two layers, as in eight-light dynamo. Drum armature wound with 320 turns No. 18, in eight sections of four layers.

Using it as a series machine with coils of F. M., two in parallel, equal to four layers No. 15, and with four cells bichromate battery, elements 3 inches by 2 inches, it drives a sewing machine at about 400 revolutions—fast enough for household use.

As a shunt dynamo, driven at the rate of about 4,500 revolutions, it lights two one-candle four-volt lamps in parallel.

With thanks for the satisfaction and instruction I have derived from your paper, I am yours, Galveston, Oct. 8, 1890. J. E. BURK.

How to Cure Felons.

To the Editor of the Scientific American:

I notice in a recent issue a cure for felons. I will give you one that I discovered accidentally, when a young man.

I was engaged in marking iron with white lead and turpentine, and having a felon coming on my finger, dipped it frequently into the mixture. As the iron was quite warm which I was marking at the time, I found the next morning that there was a small yellow spot where I felt the felon. I opened this, and had no more trouble from it. The next time I felt one coming I procured some turpentine and bathed the part affected frequently, and held it near a warm surface to dry, with the same result as the first. Since then I have used it several times, always with the same result. I also have had others try it, among them some of our men who work in the rolling mill, whose hands are covered with a very hard skin, and every one of them who tried it met with the same results, saving them a great deal of time, money and pain.

I asked an eminent physician why the turpentine should produce such a result. His answer was, "It is a counter-irritant." JAMES MALLEN.

Simple Methods of Copying Letters.

To the Editor of the Scientific American:

In a recent issue of your valuable paper, you answer a question (No. 2459) concerning a cheap method of letter copying. Let me describe the method I have used for some years.

I went to a printing office and had tissue paper put in a pad with stitched ends at a cost of 25 cents a hundred pages, $9\frac{1}{2}$ by $11\frac{1}{2}$. The cover is simply of thick paper, the bottom of cardboard.

To copy, I use ordinary copying ink—Carter's, Stafford's, or Arnold's—a cotton or woolen cloth, or a blotting paper dampened. "Pack" same as for a press and roll with common pastry roller.

Detached sheets of copy may be taken by "packing" on a cardboard and passing through a common clothes wringer. The cardboard is for strength, to avoid tearing the tissue. This method is as good as any press made, if carefully handled.

Another method is to arrange the original, tissue, wet cloth, and wrap all around a walking stick or piece of curtain roller, then roll with hands, or putting the packed roll on a table, roll it back and forth a few times beneath a board pressed upon it.

J. A. LONG, Pastor M. E. Church, Castle Rock, Col.

Annual Report of the Commissioner of Patents.

The annual report of the Commissioner of Patents, C. E. Mitchell, to the Secretary of the Interior for the fiscal year 1889-1890 is a plain, concise, and practical document. We make the following abstract:

The total number of applications received, including designs, reissues, etc., was 46,140; the number of patents granted was 27,493; the total receipts were \$1,347,203.21; the total expenditures were \$1,081,173.56, leaving a surplus of \$266,029.65 to be turned into the Treasury of the United States to the credit of the patent fund, and making a total balance in the Treasury on account of the patent fund of \$3,790,556.28.

The commissioner says:

"It is not without some satisfaction that I direct attention to the fact that despite the great increase in the number of applications, the number on hand in condition for action at the end of the last fiscal year was less than at the corresponding period in either of the four previous years. This result is due not to any increase in the number of employees or to any additional facilities whatever, but is to be ascribed to the unflagging industry and well directed skill of the entire force under my control.

"The present force of the Patent Office is inadequate. I have no reason to believe that the great increase in the amount of work done during the past year has been accompanied by any deterioration in its quality. On the contrary, I believe that such is not the fact. At the same time it must be admitted that the pace kept up in the Patent Office now, as during all recent years, is inconsistent with that high degree of care in conducting examinations which the patent system calls for. The government undertakes on behalf of the inventor not only to give him a patent if his improvement is new and useful, but to conduct a painstaking examination in order to ascertain what the fact is in that regard. The fees paid by the inventors for that purpose are ample, as is abundantly proved by the surplus over and above all expenses which, increasing yearly, is paid into the Treasury by this office under the present system. There can be no excuse, excepting inadequacy of force, for failure to make the examinations thorough and exhaustive, and inadequacy of force, though it may excuse the Patent Office, is no excuse for the government. The search for anticipating devices and processes should continue until a moral certainty."

In the opinion of the commissioner, an increase in the examining force of the office is imperatively demanded. He justly says:

"A patent should evidence such painstaking care in examination that upon its face it should warrant a preliminary injunction, and there can be little doubt that the permanence of the American 'examination system' depends upon so conducting the examinations into the novelty of alleged inventions as to make the seal of the Patent Office create a powerful if not a conclusive presumption that the patent is valid. I am aware that after the most exhaustive examination there still will remain a margin of possibility that the result of the examination is not to be relied upon. No examiner can possibly be aware of all that has been done which has not found a place in patents or in printed publications; but in this age of printing and publicity there is no reason why an examination sufficiently painstaking and exhaustive should not afford a practical guarantee that the patented thing was original with the patentee. Because, then, of the large increase in the number of applications for patents, and because of the necessity of more deliberate and exhaustive examination, and because of the fact that American inventors are already paying the necessary expenses, I recommend a substantial increase in the examining corps of the Patent Office."

The commissioner presents most cogent reasons why the salaries of examiners should be increased:

"The salary of the principal examiners is \$2,500. This salary was fixed by Congress in 1848. But a salary which was just in 1848 is not just in 1890. Aside from the fact that all salaries have been increased, on account of the increased cost of living, the present examiners of the Patent Office do far more and better work than was done by their predecessors forty years ago. Owing to the wonderful progress in every art, they are required to be much more learned. They are now experts of the highest order; they have legal ability and executive capacity. And what is true of the principal examiners is true in a proportionate degree of the assistant examiners, whose salaries ought also to be augmented. The Patent Office cannot expect to maintain an examining corps of the highest order of ability unless the salaries are made commensurate with services rendered, and no one who has ever considered the subject has ever maintained that salaries established forty years ago are now just or reasonable."

An important change in regard to the status and functions of the board of examiners-in-chief is recommended. At present the examiners-in-chief have jurisdiction over appeals from the decisions of the primary examiners and the examiner of interferences. From all decisions of the examiners-in-chief further appeal lies to the commissioner.

"I am satisfied," says the commissioner, "that this latter appeal should be done away with. The term of office of the examiners-in-chief is permanent, and the highest appellate tribunal of the office should, like other judicial bodies, possess a permanent tenure. Another reason is found in the fact that with the growth of the business in the Patent Office it has become impossible for the commissioner to discharge properly his appellate judicial powers as now devolved upon him by law.

"The number of written decisions rendered by the commissioner and assistant commissioner in appellate proceedings during the last fiscal year was eight hundred and twenty-five. About two hundred were rendered in cases that came up on appeal from the examiners-in-chief. Some of these cases presented important questions involving the patentability of inventions, and others involved the determination between rival claimants of the question which was the original first inventor. I am satisfied that no appeals should come to the commissioner from the examiners-in-chief, and that his judicial jurisdiction over that body should go no farther than to grant new trials and rehearings in proper cases, according to the principles regulating such proceedings. Such a change in the organization of the Patent Office would relieve the commissioner of a portion of that burden which is now too great to be properly discharged. It would save litigants the expense, annoyance, and the delay of two appeals, where one should be sufficient, and it would secure that uniformity in decisions which the original act creating the board contemplated. The members of the board should receive the same compensation as the judges of the United States district courts, and be required to possess the same qualifications for the discharge of judicial duty. I think, too, they should be five in number."

The Benefit of Newspaper Training.

I believe I have done everything which an editor or publisher ever has to do, from directing wrappers up to writing the biography of a president within an hour after his death. This means, if the training be continued through many years of life, and if one be under a good chief, that one gains, of necessity, the ready use, at least, of his own language. We newspaper men may write English very ill, but we write it easily and quickly. So that to us, who have been in this business, there is something amazing to hear a clergyman say that he occupied a week in composing a sermon, which was, at the outside, thirty-five hundred words in length. One can understand absolute inability to do it at all; but no newspaper man understands how a man, who can do it, can spend thirty-six hours in doing it. If you have to send "copy" upstairs, hour after hour, with the boy taking slips from you, one by one, as they are written, and you know that you are never to see what you write until you read it the next day in the paper, your copy will be punctuated carefully, written carefully, and will be easily read. That is one thing. Another thing goes with it. You will form the habit of determining what you mean to say before you say it, how far you want to go, and where you want to stop. And this will bring you to a valuable habit of life—to stand by what has been decided. Napoleon gave the same advice when he said, "If you set out to take Vienna, take Vienna." For these reasons, I am apt to recommend young men to write for the press early in life, being well aware that the habit of doing this has been of use to me.—Edward Everett Hale, in the New York Forum.

A Point of Partnership Law.

In the Supreme Court, Brooklyn, Judge Cullen has rendered a decision that will interest business men everywhere.

Enoch Rutzler and George W. Blake had been for five years partners in the steam heating business on Center street in this city. The copartnership was recently dissolved, and Blake started in the same business in Wooster street. He then moved to enjoin Rutzler from continuing the business at the old stand or anywhere else in New York in connection with the firm name. Judge Cullen lays down the law as follows:

"The authorities are plain that in the dissolution of a partnership or the sale of a business with its good will, in the absence of any covenant to the contrary, either partner or venter may prosecute the same business at any location, even next door to the premises occupied by the firm. In such cases the good will amounts to nothing more than the probability of the customers resorting to trade at the old stand. Defendant Rutzler, therefore, has the right to carry on his business at the premises he has hired for that purpose."

The court goes on to explain that Rutzler may not describe himself as the successor of the late firm, nor put out any sign or publish any advertisement calculated to mislead the public to believe that he is the successor or is continuing the business of the old concern. He may, however, describe himself as "lately a partner in the firm," or as being "formerly with it."