

IMPROVEMENT IN POTATO DIGGERS.

The annexed engraving shows an improvement in potato diggers patented by Mr. James B. Taylor, of Leadville, Col., P. O. Box 2566 (formerly of West Hurley, N. Y.). The engraving shows only the portion of the machine that gives motion to the separating tines, C, and the shifting and adjusting mechanism. For a full perspective view the reader is referred to page 166 of the current volume of the SCIENTIFIC AMERICAN.

The plow, A, is suspended from a long bolt that extends across the rear of the machine frame, and is provided with a curved arm, which is jointed to a lever, B, pivoted to the main frame, and capable of engaging with a ratchet, *b*, so as to hold the plow at any desired elevation. A screen, C, consisting of a series of fingers projecting from a cross bar, is pivoted at one side of the machine, on the same bolt that sustains the plow, and is provided with an arm, D, carrying a roller that is engaged by a zigzag cam on the axle. This cam is movable on the axle, and is provided with lugs that may be thrown into or out of engagement with clutch teeth on the hub of the driving wheel by a shifting bar, F, which is always pressed by a spring tending to throw the cam out of engagement with the drive wheel. The shifting bar is provided with an inclined arm which is engaged by the lever, B, whenever it is thrown forward to depress the plow, thus throwing the cam into gear. It will thus be seen that by moving the lever, B, so as to throw the plow into position to operate, the shifting bar, F, throws the cam forward into engagement with the drive wheel. As the machine is drawn forward the plow, A, passes under the hills of potatoes, and both potatoes and earth are forced backward over the screen, C, which being vibrated by cam, E, separates the earth from the potatoes and delivers the latter in rows on the top of the ground.

The Roller Suit.—The Patent Declared Invalid.

In the Circuit Court of the United States for the Eastern District of Missouri, September term, A. D. 1879: Robert L. Downton, plaintiff, vs. Yaeger Milling Company, defendant.—Patent.—W. G. Rainey and George Harding, Esqs., attorneys for plaintiff; G. M. Stewart and F. W. Cotzhausen, Esqs., attorneys for defendant.

Oral remarks of Treat, J., deciding cause:

I am prepared to announce my conclusion in the case of Downton vs. The Yaeger Milling Company. This case was presented at great length last spring, and it was announced to counsel at that time that if the court was compelled, as matters then stood, to decide the case, it would have to decide it in a certain way, but it would be more satisfactory if on certain points it could be more fully presented. That has been done, and very ably.

One of the points as to which the court was troubled, was whether, under the existing state of the art—this being a process patent—there was any novelty in it. Second, was the patent itself sufficiently specific in its terms to make it practicable, or, in other words, patentable, in the form pursued?

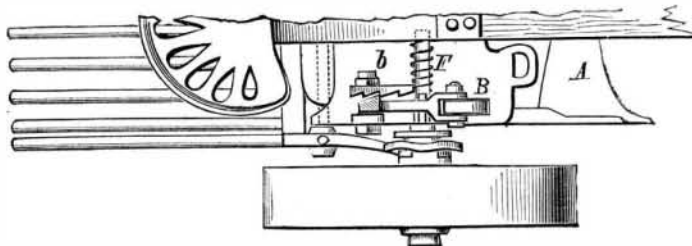
It is not proposed this morning to go through the milling literature with regard to these matters, as the various stages of all the matter involved were fully considered at the time of the hearing of the milling cases before Judges Dillon, Nelson, and myself. We were then very fully instructed as to this new process, and also as to the state of the art when the new process arose, and the conclusions announced in that case are very familiar to the counsel in this case, and to the milling public generally by this time.

Now, the mills using this new process interject rolls at various stages in connection with grinding, and after purifying, regrinding the purified middlings. Counsel were asked whether they construed this particular patent as covering any use of rolls on purified middlings at any stage of the successive grindings, or whether, under their construction of the patent, it was a use of rolls, one or more, at a stage intermediate the first and second grindings. Counsel were understood to say that the interjection of such rolls at any one of these successive stages was within the terms of the patent. The importance of that, if the testimony is understood, relates to the question of infringement.

There was a controversy at an early stage of this case growing out of the transactions between Downton, Allis & Co., of Milwaukee, and this defendant, Yaeger. Judge Dillon and myself disagreed in opinion with regard to the effect of the paper transactions involved; but his ruling with regard to the matter was necessarily the ruling in the case. He held that if there was an infringement of this patent then the defendant must answer except as to the two chilled iron rolls interposed between the first and second grindings, according to the terms of the patent; because Allis & Co., who were to some extent assignees in this matter, made those rolls according to Downton's description, Downton himself superintending the whole matter, and putting them in the mill. The contention being, on the part of Downton, that he informed these parties who had bought these rolls, which came under a subsequent patent, that while he put them in, they must give him a royalty under his process patent, and hence any use of the rolls by those parties did not exonerate them from a royalty therefor. Judge Dillon and I concurred as to those two; said they were supposed to have been put there for some purpose; they were put there by the plaintiff and under his very patent, and if it is said that they were put there merely to clog

the machinery, and for nothing involving a purpose, such a proposition cannot be maintained.

Now, the court is brought, for the purposes of this case, to the construction of this patent. It has been read and re-read very carefully. If there is anything in it that is patentable and involves novelty, it is not the use of rolls at every stage of this process, for all the Minnesota mills had been using it before, and in Europe and Missouri the same thing had been practiced for a long series of years. But it was the interjection of rolls between the first and second grindings, whereby certain effects would be produced—that is, such use flattens the germ or embryonic part of the berry, and also the pellicle, by a crushing instead of a grinding process. It is very obvious to any one who has looked into this subject, that if this grinding process is continued, whereby all the matter of the berry, including the germ—which seems to be the most obnoxious part of the whole—is mixed, then, instead of getting a first quality of flour, you have flour that is somewhat inferior in its character; for this waxy germ in itself has no especial nutritive property,



TAYLOR'S IMPROVED POTATO DIGGER.

but damages the flour through various causes. Hence, if you can take that out in the first instance, so that it shall not be ground into the body of the flour, it is certainly a most beneficial effect. To do it, you must crush, not grind, for this little embryonic particle is so very minute that unless you flatten it, it may, under trituration or grinding, pass into the middlings, and if you grind the middlings, it will go into the body of the flour. So that the true construction, and the only construction that will uphold this patent, is the interjection of those rolls between the first and second grinding of the purified middlings. By that means the fluffy matter would be thrown off, leaving the tailings to be operated upon thereafter. Then comes the next question, If that be the true reading of the patent, did this defendant use anything but the two chilled iron rolls at that stage of the process? The evidence is very uncertain on that point.

Some say that under the Wegmann patent, porcelain rolls were used at various stages. But no matter as to that. This question is one to which the court asked particular attention, namely, here is a statement that by the use of rolls in a particular stage of this process, certain beneficial results can be had; that is, a flattening of the germ so that it will not pass through the bolts.

Now is that to be construed in this way: that any device that might at any time thereafter be had, whereby such a result may occur, is covered by this patent? It seems that anterior to this patent, Mowbray and others had been using rolls, and in that very stage of the process, but the contention was that the particular rolls that they were using did not effect the end to the desired extent; and hence subsequent to this process patent, it became necessary to have some rolls invented which would effect the end.

Now it is an elemental proposition as to patents that they shall be so clear that by ordinary means they can be worked out by a person skilled in the art. It is clear that this patent could not be operated by any method until some person invented rolls, which, while they should not be corrugated, because that would be as bad as the millstones in trituration, but should be smooth and yet have sufficient grip and be of sufficient hardness; and that was not all, they must have the same diameters and work with equal speed, instead of differential speed. Neither of which was suggested in the patent.

To summarize: The claim of the patent is specific. "The herein described process of manufacturing middlings flour by passing the middlings after their discharge from a purifier, through or between rolls, and subsequently bolting and grinding the same, for the purposes set forth." Those purposes, as the specification states, are mainly for flattening the germ. That object was effected by the interposition of rolls at that particular stage of the process. Rolls at other stages of the milling process had been previously used; and even rolls by Mowbray at that particular stage; hence if the patent is to be construed by its terms as covering the use of rolls at any stage of the milling process, it had been long anticipated prior thereto. If it is to be restricted to the use of rolls at the particular stage mentioned, then, so far as this case is concerned, the plaintiff is estopped, because he himself, as heretofore decided, placed the only rolls used at that stage in the defendant's mill.

On the other hand, irrespective of the question of estoppel, if the patent is for a process to be effected without any known means of accomplishing the result; but requiring inventive faculty whereby rolls to accomplish the purposes and their modes of operation were to be determined by new inventions or discoveries, then the patent does not furnish to any one, as then skilled in the art, means whereby the beneficial end could be accomplished. No one in the then existing state of the art could by the use of any rolls known

or by any mode of operating the same, have effected the designed end. Consequently to uphold this patent for a process which would have been ineffective without some inventions thereafter had, would be to block the path to all future progress in the art of milling.

The necessary result is that I dismiss the bill—the patent being void for want of novelty, and uncertainty.

Experience with a Home-made Electric Machine.

To the Editor of the Scientific American:

Reviewing my back numbers of the SCIENTIFIC AMERICAN and SUPPLEMENT a short time ago, I became interested in an article headed "How to Make a Dynamo-Electric Machine,"* and having a desire to study the construction of such machines and the principles therein involved, became intensely interested in the article. I digested as thoroughly as possible the practical descriptions and directions there given with a view of constructing one myself. After mastering the details, I set to work and constructed first one and then a second one, both of the same size, and the first one implicitly according to the directions there given, the second one with slight modifications. I think I have been successful in making two fairly good machines.

Probably others of your readers, interested in a like manner as myself, have been engaged in the same thing, and possibly you may know the result of their efforts.

Of course it must be some gratification to you to know that your labors, and the valuable directions and information on practical subjects which you diffuse among your readers, are fruitful of good results. Presuming on this, and claiming

your indulgence on that account, and also to afford a comparison with results others have obtained, I will give you a short description of my machines and what they will do.

The two machines, which I call No. 1 and No. 2, stand side by side on a baseboard 10½ by 15 inches, and 1 inch thick. Their general construction is the same as given by you in SUPPLEMENT No. 161, except that a little longer length of wire is wound around each arm of the magnets than there given, and also around the armature, each arm of the magnets containing about 250 feet of No. 16, and each armature about 45 feet of No. 18, covered wire. One drive wheel can run one or both machines at the same time, and to enable me to increase its size, I placed a block of wood 3 inches high on the top of each magnet, with a transverse piece laid across, also 3 inches thick, the whole bolted firmly to the top of both magnets; on the top of this transverse piece stand the bearings for the drive wheel, which is 17½ inches in diameter; it would be better if it was still larger.

Either one machine will heat 3½ to 4 inches of 36 platinum wire to a white heat, and a shorter length to incandescence, and finally melting it. It will rapidly decompose water, producing 1½ cubic inches of gas in two minutes. It produces large bright sparks and strong shocks on breaking contact, and will produce a bright electric light with apparatus described in SUPPLEMENT, No. 149. With both machines combined the effects are very much increased.

By using No. 1 machine to charge the magnet of No. 2, and taking the current from the armature posts of No. 2, I can heat 10 to 12 inches of 36 platinum wire to a white heat, and forming the wire into such a shape as to reduce the radiation, I can heat 14 inches to incandescence, can decompose 1 cubic inch of gas in one minute, heat a thin carbon pencil 1½ inches in length to a white heat the whole length; and as the carbon consumes the brightness increases, until it reaches brilliant incandescence, when it finally disintegrates. Connected in this manner it will also work an induction coil.

With platinum wire I can produce a light equal to six candles, and could do better but for fear of melting the wire. With the electric light apparatus I can produce a light equal to a four foot gas burner.

I am pleased with the machines; they answer nearly all the purposes of a battery, and are always ready, a few turns of the wheel producing a current instantaneously, and continuing steadily so long as you turn the wheel.

I would like to know whether my machines will compare favorably with others. J. PICKARD.

Morrisania, N. Y., March 25, 1880.

[Our correspondent could not have done better with a machine of the size and character described. Few have done as well, although many have made the trial. Some of our correspondents write after this fashion: "I have constructed a dynamo electric machine, carefully following the directions given in your SUPPLEMENT, No. 161, with a single exception"—naming the exception—"and it fails to work!!" Mr. Pickard has made two machines, following our instructions, and they work exceedingly well; others have done the same thing. The fact is the "single exception" must be charged with the failure experienced by our unfortunate correspondents.]

THE HUMAN RETINA.—In a recent note to the Vienna Academy Herr Salzer offers an estimate (based on numeration) of the probable number of optic nerve fibers and of retinal cones in a human eye. The number of the former he supposes to be about 438,000, that of the latter 3,360,000. This gives seven or eight cones for each nerve fiber, supposing all fibers of the optic nerve to be connected with cones, and equally distributed among them.

* In SUPPLEMENT, No. 161.

Faber's Talking Machine.

The celebrated Faber talking machine has had its powers of articulation almost doubled by the nephew of the original inventor, also named Joseph Faber. Describing a recent exhibition of the machine, the London *Times* points out that its chief points of interest to the physicist, the physiologist, and, it may be added, the philologist, lie in the results obtained from the ingenious contrivances by which the functions of the flexible and mobile organs of voice are performed. The principal features of the machine are, to begin with, the bellows, from which the air is driven with considerable but varying force, by means of a pedal lever. The air passes in a horizontal stream through a small chamber, which represents the human larynx, and in the same right line out through the mouth. The lips and tongue are of India-rubber, and the lower jaw is movable. Below the laryngeal apparatus, and opening from the chamber in which it is contained, is another smaller chamber, about the size and shape of a lemon, from which a pipe curved upward allows the air when driven through to escape. This supplies the place of the nose to the instrument, and when a valve is opened, enables the sound of the letter *m* and *n* to be produced by the striking of the same keys with which the sounds of *b* or *p* are obtained. The larynx is, of course, the most complex part of the machine, and to Herr Faber is due the elaboration of this portion of the mechanism. Within a small oblong box, a narrow and exceedingly thin strip of hippopotamus bone, strengthened by India-rubber on one side, produces, by its vibrations, the speaking tone, which may be called the fundamental sound to be subsequently modified. At the will of the operator the pitch can be raised or lowered, but not during the utterance of a word or sentence, so that in saying "Mariana," or "*Comment vous portez vous!*" (the machine talks French, German, Italian, or English) the keynote remains unaltered to the end. In front of the vocal cord and within the laryngeal chamber are stops or diaphragms, placed vertically, and rising and falling like the wards of a Chubb's lock, but different in that each stop is a complex machine in itself, having within, moved by a spring, another stop, by means of which an orifice at the base is enlarged or diminished. Herr Faber has taken another liberty with nature, for, besides placing the nose below the mouth, for the sake of convenience, he has placed the teeth in the larynx, or, more strictly speaking, with one of these stops he gets a somewhat lisping "s" or the sound "sh" from the machine. A small windmill-like arrangement gives the rattle of the letter "r," and a thin iron band, notched in the lower rim in front, fitting outside the upper lip, descends to give the "f" or "v" sound. There are fourteen keys by which sounds are controlled. Striking the first the sound of "a" in "father" is produced, the mouth remaining wide open; another key being struck, the lower jaw rises and the sound of "o" in "bowl" is given; a third key moves a lever, which nearly closes the mouth, and the sound of "e" in "movement" is emitted. The other vowel sounds and the consonants are produced by the use of the diaphragms in the larynx with the mouth in the second or third position.

The French Vintage of 1879.

The gross production of wine in France last year was only 25,700,000 hectoliters (565,400,000 gallons), or 25,000,000 hectoliters (550,000,000 gallons) less than in the previous year. This enormous falling off—nearly one-half—is not entirely attributable to the ravages of the *phylloxera* and *oidium*. These pests have certainly spread widely and rapidly, but, in addition to them, the wine growers had to contend with very unfavorable climatic conditions. The cold and wet which prevailed throughout the year prevented the grapes from fully ripening, and some districts were visited besides with very sharp frosts as early as September. The districts which suffered most severely were the Burgundy and Champagne districts, where the crop is almost entirely destroyed. The south of France suffered less than the east and center. The Departments of L'Aude, Hérault, and Pyrénées Orientales, gave an increase in the production amounting to about 2,000,000 hectoliters, or 44,000,000 gallons. The area of land under vine cultivation was reduced during the year by 51,512 hectares, or 129,000 acres, making the total reduction in the acreage of French vineyards since 1874 no less than 150,000 hectares (370,000 acres). Compared with previous years, it is some satisfaction to find that the rapid diminution in the production of wine in France is not without a parallel. From 1853 to 1856 the produce fell gradually from 22, 21, and 15, to 10 millions of hectoliters in the four years. By 1863 the quantity of wine produced had increased to 50,000,000 hectoliters, and finally, in 1875, it reached the unparalleled figure of 83,000,000 hectoliters. The production of cider last year also fell off, being 4,197,000 hectoliters (92,334,000 gallons) less than in 1878, and more than 3,000,000 hectoliters less than the average of previous years.

Remarkable Shooting.

Another extraordinary marksman, who is said to excel Dr. Carver, is Dr. John Ruth, of California, an account of whose exploits is thus given in a recent issue of a San Francisco paper: "Dr. Ruth then proceeded to give an exhibition of fancy shooting at a glass ball held in the hand of his attendant, he taking aim through his legs, with his back to the object. He also held the rifle with the butt resting upon the top of his head, the hammer pointing downward. He also shot with his back reclining upon a table. In all

these experiments he was successful on the first attempt. Turning his back to the attendant, he sighted the rifle by the aid of a small hand mirror, and broke the ball at the first trial. Perhaps the most wonderful feat that he accomplished, and one requiring considerable nerve on the part of both himself and attendant, was shooting a cigar out of the mouth of the latter. Another interesting experiment was shooting without a sight, that essential adjunct being covered by a piece of card board placed around the barrel at its extremity. The absence of the sight apparently made no difference, as the destruction of the vitreous spheres continued unabated. The following experiments were also successfully accomplished: Shooting a ball from the head of an attendant, the latter being blindfolded; the same feat with the bandages removed from the attendant's eyes and the latter looking into the muzzle of the rifle; one hand shooting with a small rifle, manipulated in a variety of difficult ways, holding the rifle with the hands placed back of the neck. In none of these shots did the doctor fail to shatter the balls from the hand of the attendant. One of the most marvelous feats performed was the following: Placing a glass ball upon the ground, the doctor shot in front of it, and plowing under it, sent it flying several feet in the air by the force of the concussion, and before it reached the ground shivering it with a second bullet. Dr. Ruth's wife is nearly as expert as himself in the use of the rifle."

Photographs as Legal Evidence.

The London *Photographic News* thinks that photography is destined to play a very important part in legal proceedings, especially in cases of accident, when the causes are disputed, and when it is essential an exact representation of the condition of affairs immediately after the accident should be laid before a jury. Such photographs, however, require to be executed with some degree of intelligence on the part of the photographer, and an appreciation of the facts of the case, or they may become absolutely misleading. Precise as the camera is, it would not be very difficult, we fancy, by the use of an unsuitable lens, and by the choice of an improper point of sight, to give an idea of the appearance of any place quite foreign from the truth, so far as relative proportion is concerned.

The *News* recites a case where a photographer made a blunder of this kind, which proved very disastrous to his client. The latter was very anxious to obtain a spirit license for a large public house he had built. The chief opposition to his application came from a neighboring Boniface who had had undisputed possession of the custom of the locality for some years, and who, of course, did not want an intruder. The applicant's house was situated on the top of a gentle slope at the corner of two roads, and was really an imposing looking edifice; the opponent's house was a somewhat stunted building, also at the corner of two roads, but with a considerable frontage on one side. It occurred to the applicant that if he could only lay the photographs of the two houses before the visiting justices they would be so overcome with the contrast presented that they would immediately grant him a license. Accordingly he had the two photographed. Unfortunately the photographer used a short-focus, wide-angle lens, and, selecting his point of sight in respect to the new house opposite the angle (which happened, unfortunately, to be naturally rather an acute one) formed by the two sides of the building, produced a picture in which the two lines of the roof formed almost an isosceles triangle, while the house was squeezed together in the most absurd fashion. The perspective, in fact, was strained and unnatural, and the camera had absolutely made a picture which no human eye (unless it possessed a short-focus, wide-angle lens) could by any possibility see. To make the matter worse, instead of meting out the same justice to the old house, the photographer selected a point midway opposite the longest line of frontage, and planted the camera much nearer the object than he did in the first instance. The result was, that the old house in the photograph appeared much the more imposing of the two, and any one who had not seen the originals would have preferred it to the ungainly and disproportioned edifice of which the owner was so proud. At any rate, the justices thought so, and refused the license.

Waste of Fuel.

The wanton destruction of any kind of property is regarded as a crime, and the neglectful waste of the gifts of nature, bestowed for the common good of mankind, no matter how great their present abundance, ought equally to be held as an offense against the rights of humanity, and justly censurable.

Americans are proverbially wasteful, not alone in small matters but in great ones. This is exemplified in a striking manner in the anthracite coal regions of Pennsylvania, where, it is estimated, not less than one hundred million dollars' worth of fuel has been wasted in getting out and preparing the coal for market, the present average annual loss being set down at fifteen million dollars. This enormous waste is ascribed by men of experience to the use of imperfectly designed machinery for breaking the coal. This matter demands serious attention; for vast as are our natural resources, such extravagance will not only tend to exhaust them sooner than they should be, but also to increase present cost to consumers. Land owners and miners are, in this matter, equally remiss in duty to their successors and the people of the country, who have a right to demand that an article of such prime necessity shall be economically worked, in order to yield the best results to

the various industries and comforts dependent upon this kind of fuel.

The great cause of this waste in anthracite coal is said by competent engineers to be what are known as coal crushers—toothed cylinders geared to run toward each other, which of necessity literally crush a great part of the coal into fragments and dust too fine for use, unless it can be by artificial means be again made into blocks of suitable size. The percentage of waste is estimated at one-fourth the entire product, the greater part of which could be saved to the operators by the use of proper machinery. But the operators, it would appear, are a very conservative set of gentlemen, and opposed to innovations calculated to do away with time-honored methods. It is within the personal knowledge of the writer that a mechanical engineer of wide experience and thoroughly posted in the mining and marketing of anthracite coal invented and set up at one of the great coal centers machinery for the more economical preparation of the fuel. He invited the operators and engineers to come and witness his experiments, but few of them availed themselves of the opportunity; and although, as he claims, he can demonstrate beyond peradventure that he can save from fifty to eighty per cent of the coal now lost, he has as yet been unable to secure the adoption of his improved methods and machinery. This gentleman is a conspicuous example of a prophet being without honor in his own country.—*Coal Trade Journal*.

A New Measuring Implement.

A remarkable machine was described at a recent meeting of the Société d'Encouragement pour l'Industrie Nationale, at Paris, called profilograph, because when in use it traces mechanically on paper the outlines of the ground over which it travels. It is described in one of our foreign contemporaries as a small carriage mounted on two wheels, drawn by one man, and attended by another, who marks the levels at the proper places; and underneath hangs an iron rod with a large ball at its lower end, serving as a pendulum. This pendulum maintains a constant vertical position, while the machine inclines in one direction or the other according as it ascends or descends a slope. To the upper end of the rod is fitted a pencil, which marks on a sheet of paper the ups and downs of the country traversed, whether on an ordinary road or across trackless fields. The exact profile is thus recorded to a given scale. At the same time one of the wheels, acting the part of chain bearer, measures and indicates the distances traveled throughout the survey. For surveyors and others engaged in leveling operations, this machine would appear to be eminently serviceable, and there is talk of its being made use of in a new general survey of France contemplated by the government.

Milk and Lime Water.

Milk and lime water are now frequently prescribed by physicians in cases of dyspepsia and weakness of the stomach, and in some cases are said to prove very beneficial. Many persons who think good bread and milk a great luxury, frequently hesitate to eat it for the reason that the milk will not digest readily; sourness of stomach will often follow. But experience proves, says the *Journal of Materia Medica*, that lime water and milk are not only food and medicine at an early period of life, but also at a later, when, as in the case of infants, the functions of digestion and assimilation are feeble and easily perverted. A stomach taxed by glutony, irritated by improper food, inflamed by alcohol, enfeebled by disease, or otherwise unfitted for its duties—as is shown by the various symptoms attendant upon indigestion, dyspepsia, diarrhea, dysentery, and fever—will resume its work, and do it energetically, on an exclusive diet of bread and milk and lime water. A goblet of cow's milk may have four tablespoonfuls of lime water added to it with good effect. The way to make lime water is simply to procure a few lumps of unslaked lime, put the lime in a stone jar, and add water until the lime is slaked and of about the consistency of thin cream; the lime settles, leaving the pure and cleanlime water on the top.

To Cure Foot Rot in Sheep.

The preparation of the foot is just as essential as the remedy, for if every part of the disease is not laid bare the remedy will not effect a cure. A solution of blue vitriol as strong as can be made and as hot as you can bear your hand in, even for a moment, having the liquid three or four inches deep, or deep enough to cover all the affected parts; then hold the diseased foot in this liquid ten minutes, or long enough to penetrate to all the diseased parts; put the sheep on a dry barn floor for twenty hours to give it a chance to take effect. In every case where I have tried it, it has effected a cure, and I have never given a sheep medicine internally for foot rot. This remedy I call a dead shot when the foot is thoroughly prepared, but a more expeditious way, and where you don't hardly hope to exterminate the disease, but keep it in subjection, is this: After preparing the feet as for the vitriol cure, take butter of antimony, pour oil of vitriol into it slowly until the heating and boiling process ceases, and apply with a swab. This remedy works quicker, is stronger than the vitriol, and is just as safe, but its mode of application renders it less sure.—*Ohio Farmer*.

In a small part of our issue of April 10, the firm name of the well known manufacturers of printing ink was misprinted. It should have been George Mather's Sons, 60 John street, New York city.