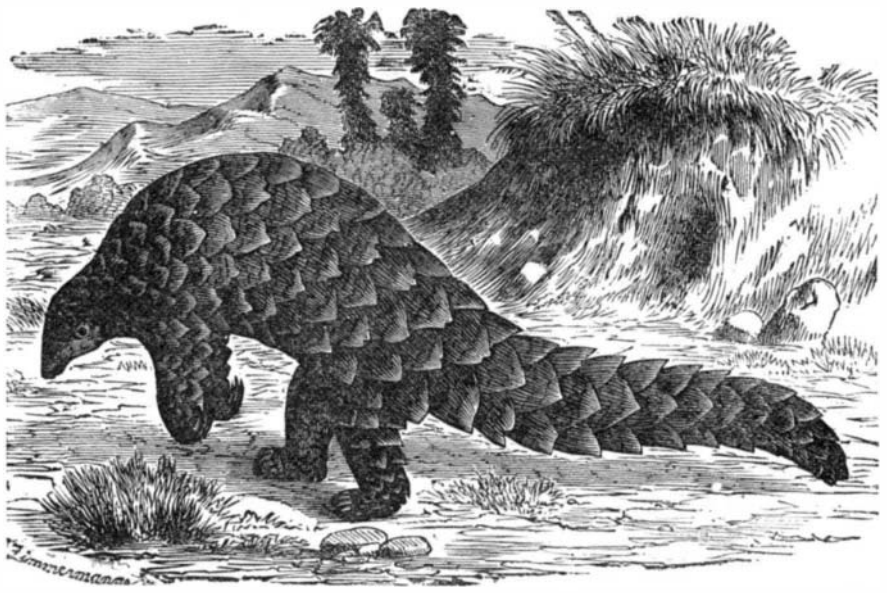
THE ANT-EATER FAMILY.

The ant-eater is a remarkable animal of the old genus *myrmecophaga*, and of the edentate or toothless order. The hind feet are plantigrade, and armed with large claws bent inward, so that the animal walks on the extreme edge of the foot. This arrangement is a wise provision of Nature for preserving the claws from damage, they being used for tearing down the ant hills and unearthing the insects on which the animal chiefly feeds. The South American variety is a hairy creature, sometimes called the ant bear (*myromecophaga jubata*); it is about four feet long, and has a bushy tail of two and a half feet more, and its hight at the shoulder is about three feet three inches. The tongue of the ant-eater is remarkable; it can be darted from the mouth to a length of eighteen inches, and is thus very effective in picking up its food, resembling in this respect the tongue of the chameleon.

We publish herewith an engraving of the scaly ant-eater, commonly found in Africa and Asia. This specimen is known as the pangolin, and its scaly covering is formidable, being hard enough to turn a musket ball. When it is alarmed, and cannot reach its hole in the ground, it rolls itself up like a ball, throwing up the sharp edges of its scales, and then the animals which usually attack it are glad to let it alone.

Sir Emerson Tennent, while in Ceylon, kept two of these creatures alive at one time, and says: "One was a gentle and affectionate creature, which, after wandering over the house in search of ants, would attract attention to its wants by climbling up my knee, and laying hold of my leg by its tail. It seized ants by extending its long, glutinous tongue along their track."

Still another kind is found in Africa, it is called the phatagin. In the hot countries where all these species have their habitat, the ants are very troublesome, and destroy much property, and animals that are capable of getting rid of them in such numbers are viewed by some eastern races with superstitious awe.



THE SCALY ANT-EATER.

A Human Analysis.

Dr. Lancaster, of London, recently analyzed a man, and presented the results of his investigation in palpable form to his audience during a late chemical lecture. The body operated upon weighed 158·4 lbs. The lecturer exhibited upon the platform 23·1 lbs. carbon, 2·2 lbs. lime, 22·3 ozs. phosphorus, and about 1 oz. each sodium, iron, potassium, magnesium, and silicon. He apologized for not exhibiting 5,595 cubic feet of oxygen, weighing 121 lbs., 105,900 cubic feet of hydrogen, weighing 15·4 lbs., and 52 cubic feet of nitrogen, likewise obtained from the body, on account of their great bulk. All of these elements combine into the following: 121 lbs. water, 16·5 lbs. gelatin, 132 lbs. fat, 8·8 lbs. fibrin and albumen, 7 7 lbs. phosphate of lime and other mineral substances.

Action of Sulphuric Acid on Lead and its Alloys.

Few metals are able to resist the action of hot oil of vitriol, lead being, of all the common metals, the least acted upon by this acid. The addition of some metals assists lead to withstand the attacks of sulphuric acid, while others render it a more easy victim. The careful experiments of A. Bauer, which were published recently in the *Berichte der Deutscher Chemischen Gesellschaft*, cannot fail to be of practical value to manufacturers and others.

Several alloys were prepared by fusing pure lead with other metals, the exact composition being determined by analysis. These alloys were rolled out into plates of equal thickness, and heated in a suitable apparatus with sulphuric acid of 66° B., the temperature at which a reaction took place being carefully observed. The apparatus consisted of a flask secured in position a little above the bottom of an air bath, the sides of which were formed by a glass cylinder. A thermometer, reaching down to the acid in the flask, showed its temperature. In every experiment an equal weight of alloy and an equal volume of acid were employed. The results were as follows:

1. Pure lead: A strip of pure lead weighing 3 grains was heated in 3½ cubic inches sulphuric acid of 66° B. At about 347° Fah., a considerable evolution of gas took place, which was stronger at 374° Fah. At 446° or 464° Fah., all the lead was at once converted into sulphate of lead, which dissolved in the sulphuric acid. At this sudden decomposition, sulphurous acid and hydrogen appeared, and sulphur separated.

2. Alloys of lead and bismuth: (*a*) With 10 per cent of bismuth. The action began at 302° Fah., and continued, slowly and quietly, up to 374° Fah., at which temperature all the metal was destroyed. (*b*) With 4 per cent of bismuth. The decomposition followed more rapidly than with the 10 per cent alloy, and was finished at 266° to 284° Fah. (*c*) With 0·73 per cent of bismuth. The decomposition followed, suddenly and completely, at 320° Fah.

3 Alloys of lead and antimony: (*a*) With 10 per cent of antimony. This alloy decomposed slowly and steadily; a strong action began at 374° Fah., and ended at 446° to 464° Fah. (*b*) With 5 per cent antimony. This alloy also dissolved slowly. A more violent action began at 356° to 374° Fah., and the end was at 428° to 437° Fah. (*c*) With 1 per cent antimony. Here too the decomposition is slow, but a considerable evolution of gas takes place at 482° Fah., and the action is ended at 536° Fah.

4. Alloy of lead and arsenic: Containing 10 per cent arsenic. This alloy acts very like the 10 per cent antimony alloy. The action is slower, and ends at 464° Fah.

5. Alloy of lead with 1 per cent copper: This acts very similarly to the 1 per cent antimony alloy; a strong reaction begins at 482° Fah., and all the metal is dissolved at 536° Fah.

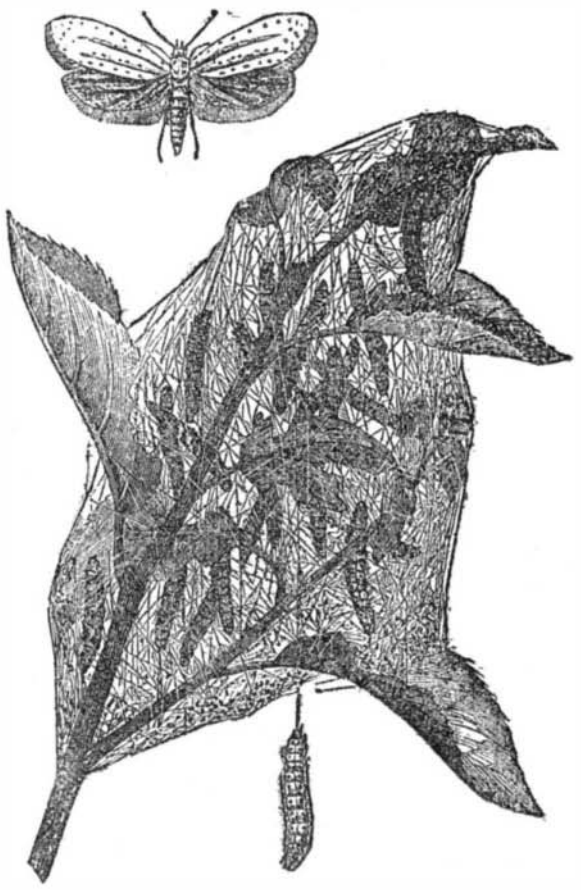
6. Alloys of lead and platinum: (*a*) With 10 per cent platinum. The decomposition is slow and incomplete, and ends at 536° Fah. (*b*) With 2 per cent of platinum. The decomposition is sudden and complete, between 500° and 536° Fah.

7. Alloy of lead and tin with 10 per cent tin: This alloy acts like pure lead; solution takes place suddenly at about 392° Fah.

These experiments show that the addition of a little antimony or copper renders the alloy more able to resist sulphuric acid, while bismuth has a decidedly injurious effect.

THE COBWEB APPLE MOTH.

The little moth represented in the accompanying engraving is very injurious to our apple trees. As is often the case, its size bears no proportion to its destructive powers. The *liparis chrysorrhea*, for example, which is a moderately large



bombyx, is generally thought a very bad inmate in an orchard, and on the continent its hurtful propensities are so well known, and the means of counteracting them so simple, that municipalities and powers have given it renown, by enacting decrees for its extermination and putting a price upon the heads of its members; and yet, destructive as it is, it is nothing to this tiny *yponomeuta*. The liparis strips the branch on which the brood has been established—nay, many branches may be wholly defoliated, but the whole tree is rarely entirely stripped, whereas the *yponomeuta* spares nothing; it invades the whole tree, and leaves it as bare as if fire or the locust had passed over it. One thing only it leaves behind it, as it were in charity or contempt, namely, a white veil wrapped round the tree, as if to conceal its nakedness. It looks like a forgotten skeleton enveloped in spiders' webs.

This is the work of the caterpillars. Hatched in the previous winter, they revive in the months of May and June, and the eggs from which they spring having been laid in the previous autumn in numbers, near each other, large families or societies speedily spin a commodious tent, represented in the engraving, in which they are sheltered from sun and rain. At first a number of leaves are inclosed in the web, and on these the young larvæ feed. These are soon consumed. The tent is then enlarged, and more leaves covered in. When all these are consumed, they flit to a new region, where they spin a new web. This, repeated by multitudes of families all over the tree, leaves it utterly consumed, and annihilates all chance of the smallest crop. In the month of July the larva passes into the chrysalis state in its web, the head being downwards. The perfect insect comes out in August. After coupling, the female lays her eggs in numbers in the bifurcation of the branches. The young larvæ are hatched in the month of September. They then shelter under a slight envelope of silk, when they pass the winter in a state of torpidity, out of which they awake in the month of May, to follow the course of life above indicated. This species feeds on the apple, the thorn, and sometimes on the service tree; rarely, if ever, on anything else. The larva, when young, at the beginning of May, is yellowish white, covered with small blackish points; the head and plate of the first segment are blackish brown. When it is adult, at the end of June, it is velvety gray, with two dorsal rows of deep black quadrangular spots. The head, the plate of the first segment, and the true legs are dull black. The perfect insect has the upper wings entirely pure white, without any tinge of leaden hue, and with about twenty-four small black spots. The lower wings are blackish. The figures are slightly enlarged. No satisfactory remedy has been found for this scourge. Scorching the nests with blazing torches and sweeping them away with stiff brooms have been suggested; but the suggestions are neither very practical nor efficient.—*The Garden.*

The Magnetization of Gas Spectra.

Some very curious experiments have recently been laid before the French Academy of Sciences by M. Chautard, relative to the influence of a powerful magnet upon the spectra of gases contained in Geissler tubes and illuminated by means of the electric current. In all simple bodies of the chlorine family, and in the gaseous or volatile compounds derived therefrom which thus far have been examined, the action of the magnet is immediate, and manifests itself, not merely by a change of color in the tube, but by an increased brilliancy of the spectral lines, which become doubled. The bodies thus far submitted to investigation, besides chlorine, which behave similarly include bromine, iodine, the chloride, bromide and fluoride of silicium, the fluoride of boron, hydrochloric acid, chloride of antimony and of bismuth, bichloride of mercury, and the protochloride and bichloride of tin.

The lights of sulphur and of selenium become extinguished the instant the magnet is excited, and the same is the case with that of the tubes containing chlorine, bromine, and iodine when the tension of the coil is suitable. The feeble brilliancy of the oxygen illumination is not sensibly modified, nor is that of carbon compounds, such as carbonic acid, carbonic oxide, etc. The fine bands of the nitrogen spectrum are not changed, except in the red and yellow portion. These colors become almost completely extinguished, or at least are replaced by a flat uniform tint, in which all traces of lines disappear. The lines in the more refrangible region remain intact.

The hydrogen lines keep sensibly their normal appearance, but by employing a sufficiently powerful magnet, at the moment of excitation a very brilliant yellow line appears, which is due to sodium, doubtless obtained from the surrounding glass. This line vanishes as if by magic when the current is interrupted, to reappear again, however, for some time, as often as the electric flow is established. Eventually it loses intensity, and it becomes necessary to allow the tube several minutes of repose before the line can again be caused to appear. It shows itself also in nitrogen tubes, and in those containing carbonic and hydrochloric acid.

The protochloride of tin, crystallized and dry, but bihydrated, offers remarkable phenomena of dissociation under the magnetic influence. Normally the spectrum is pale, and shows a few of the green chlorine lines; but as soon as the magnet is excited, two characteristic bands of hydrogen, the red and the blue, appear, which remain as long as the magnetization exists, and return with the same indefinitely. M. Chautard attributes this to the momentary separation of the elements of the water of the salt, due to the considerable resistance opposed to the passage of the induced current during the magnetization.

M. Chautard's investigations are still in progress, and doubtless further novel and interesting results remain to be adduced. The phenomena noted are remarkable, and will attract the close attention of chemists and physicists generally

AT Columbia, Tenn., recently, the boiler of a steam thresher suddenly exploded, killing three and wounding seven persons who were working the machine. It is stated that one piece of the boiler fell at a distance of three miles from the scene of the disaster; but this requires confirmation. The cause of the explosion was the usual one—carelessness.

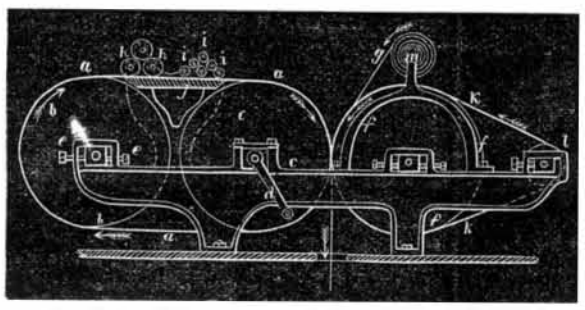
Printing Photographs by Machinery.

The name of M. Despaquis has for several months past been associated with earnest efforts made, not unsuccessfully, to hasten the advent of the time when the production of photographs at the printing press may be effected with a degree of celerity rivaling the production of typographic works at the platen printing machine.

Like, we believe, all typographic machines in which rapidity is a desideratum, the printing surface in this process is curved; but unlike the typographic processes, the "surface" in this case is that of a flexible endless band, which passes over two rollers.

Before describing the press and its mode of action, we shall explain the construction of the flexible printing band. A web of flax or hemp (not of cotton or wool) is faced with bichromated gelatin, on the surface of which the light has been allowed to act through the negative, and this it is which becomes the printing band. But a certain method of procedure is requisite in the preparation of this gelatined linen. A single pellicle of gelatin is treated by itself under the negative, and when exposed to light it is sponged on the surface with cold water containing a little glycerin, which retains the surface in a state of moisture, and thus prevents it from becoming insoluble during the operation which follows. This latter consists in laying down the cloth referred to upon the back of the pellicle thus treated, and saturating it thoroughly with bichromated albumen, in consequence of which, after it has been exposed to light, no water can penetrate the film or, at any rate, act upon the linen in such a way as to cause it to swell or become altered. The albumen is applied by means of pouring it over the surface of the linen, by which the albumen, linen, and original pellicle of gelatin, which bears the impression on its opposite side, are incorporated and form a strong flexible web. By exposing the back to the light, the entire body of the band is rendered insoluble, except on the extreme surface already exposed under the negative, and upon which the light has now no more action, owing to its being still moist with the glycerin.

This forms the flexible printing surface, and it is impossible not to admire the ingenuity displayed in its production. We now arrive at the press in which this endless printing band is to be utilized. The following is a view of the press in elevation:



In the above, *b* and *c* represent two rollers or drums, to one of which is attached a handle, *d*, for the purpose of rotating it. Over these rollers passes a cloth either of ordinary material or of metallic gauze, to which is attached the flexible printing pellicle just described. Three rollers, at *h h*, serve to moisten the printing surface in the same way as a lithographic printer moistens the surface of his stone by a wet sponge, while a series of other rollers, shown at *i i*, serve to ink the surface wherever the moisture absorbed admits of the ink adhering. At *e* is an adjusting screw, by which the large rollers are separated to such an extent as to insure the printing band being retained in a tight state.

A third roller, *f*, is placed so as to act against *c*, and produce the pressure of the paper, *g*, against the printing cloth. On this roller turns an endless cloth, *k*, in flax or zinc, which passes over a second movable roller, *l*, which serves to stretch it more or less. Connected with the roller, *m*, is the paper, in a band, which unrolls by the action of the two large rollers, *f* and *c*.

It is, of course, necessary that the ends of the printing cloth should be united by sewing—not forming a thick seam, but so as to pass smoothly between the two cylinders.—*British Journal of Photography.*

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The regular annual meeting of the above named association convened at Detroit, Mich., on the 11th of August. Hon. C. J. Walker, of Detroit, delivered an address of welcome, to which Professor Hilgard, as President of the Association, made a suitable response. Up to the time of writing the members have been engaged in organizing details, so that, with the exception of the speech made by the retiring President, Dr. Le Conte, a brief *resumé* of which is given below, we defer publication, of our usual abstracts of papers of interest read, until our next issue.

Dr. Le Conte's address dealt with the evidences of evolution, and he endeavored to show that, while change of species may be admitted in creation, there still is reconcilable evidence of intelligence and design. He discussed the strict relation of natural history or biology to that great mass of learning and influence which is commonly called theology, and to that smaller mass of belief and action which is called religion; and in reference thereto stated that it will be necessary to separate the essential truths of religion from the accessories of tradition, usage, and, most of all, organizations and interpretations, which have in the lapse of time gathered around the primitive or revealed truth. In conclusion, the speaker considered that the influence of Science upon religion has been beneficial Scholastic interpretations founded upon imperfect knowledge, or no knowledge but mere guess, have been replaced by sound criticism of the texts and their exegesis, in accordance with the times and circumstances for which they were written.

The Most Powerful War Vessel in the World.

The British ironclad Inflexible is now about one fourth completed, work having been begun upon her in February, 1874. Unless the progress of invention results in the projecting of a still more formidable engine of marine warfare before the Inflexible is launched, she will possess the thickest armor, the heaviest guns, the largest displacement in tuns, the most machinery in the world, and probably prove more expensive than any other war vessel hitherto constructed. She will have engines for steering, for loading guns, for hoisting shot and shell, for ventilation, for moving turrets, for lowering boats, and for turning the capstan as well as for propulsion. The vessel is little more than a floating castle, rectangular above water, 100 feet long, by 75 feet in width, and protected by 24 inches total thickness of iron. The two turrets which are placed within the citadel are formed of iron of a single thickness of 18 inches, and within each of them are two 80-tun guns, which can be trained to any point of the compass.

The main engines work up to 8,000 indicated horse power, and the bunkers carry 1,200 tuns of coal. The total cost of the vessel is placed at 2,605,000 dollars.

Centennial Notes.

Egypt is to make an exceptionally fine display at the centennial. The Viceroy's Commissioner has arrived in this country, and is pushing preparations vigorously. Egypt acts in conjunction with Germany.

The General Transatlantic Steamship Company offer reduced rates to freight and passengers coming from France to the Centennial.

Application has been made by the Royal Academy to the English Government for the latter to defray the cost of transporting works of art for exhibition in the Centennial. The request was favorably received, and is now under consideration.

Mr. John Jay recently gave his views regarding the Centennial in an extended letter to the *Tribune*. He advocates the division of space into national and State plots. Such a plan, he thinks, would do much to develope that international rivalry to which the Vienna Exposition chiefly owed its success, while it would be less expensive to the Centennial Commission. He also advocates international scientific discussion upon a list of subjects to be selected by the Smithsonian Institute, congresses of scientific men being summoned from all parts of the world for the purpose, and national vessels being sent to transport them. Mr. Jay also suggests a congress which shall decide upon an international patent system which will give to an inventor in one country protection throughout the world.

A Brilliant Light.

Fill a small vessel of earthenware or metal with perfectly dry saltpeter or niter, press down a cavity into its surface, and in this cavity place a piece of phosphorus; ignite this, and the heat given off melts a sufficient quantity of the niter to evolve oxygen enough to combine with the phosphorus, and the effect is to produce the most magnificent white light which chemistry can afford.—*Photographic News.*

DECISIONS OF THE COURTS.

United States Circuit Court---District of Massachusetts.

PATENT SHADE FIXTURE.—STEWART HARTSHORN *vs* JAMES F. ALMY *et al.*

[In equity—Before Shepley, J.—Decided April, 1875.

SHEPLEY, J:

The bill in this case is brought for alleged infringement of reissued letters patent No. 2,756, dated August 27, 1867, granted to Stewart Hartshorn, for improvement in spring fixtures for shades.

The claim is for—

The application to a shade roller, provided with a spiral spring for automatically raising or rolling up the shade of a pawl and a ratchet or notched hub, so arranged that the former will engage with the latter at any point or hight of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, substantially as set forth.

Upon the construction of this claim depends the question of infringement in this case. Defendants contend for a construction which will limit the claim to the peculiarly shaped pawl and the peculiarly shaped ratchet described in the specification of the patent. Complainant contends for a construction which will embrace, in combination with the other elements, any pawl and ratchet or notched hub so arranged that the former will engage with the latter at any point or hight of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, substantially as set forth.

The state of the art before the invention of Hartshorn was this: A roller was used, having within it a coiled spring, one end fixed to the roller and the other end to a loose journal of the roller. A pawl and ratchet were so applied to the roller that the pawl would hold the roller against turning under the action of the spring, but allow the roller to be turned against the action of the spring. The ratchet lifted and disengaged the pawl from the ratchet in a downward pull of the curtain. These rollers were adapted, like the Hartshorn, to be hung in brackets. In the form of spring fixtures for shades which was known as the "The Coach Fixture," and in use prior to Hartshorn's invention, a cord was used to lift the pawl and disengage it from the ratchet when it was desired to allow the curtain to roll up under the action of the spring. Hartshorn's invention differed from those which had preceded it, in that it dispensed with the cord used to disengage the pawl from the ratchet when the curtain is to be rolled up, and operated the fixture wholly by means of the shade or curtain.

The operation of Hartshorn's fixture, so far as concerns winding up the curtain and stopping it any desired hight, is as follows: A pawl is attached by a pivot to one of the brackets in which the shade roller is hung. The end of the pawl opposite the pivoted end has a tendency to fall by gravity on a hub attached to one end of the roller. Two notches are made in the periphery of this hub. The width of these notches is but slightly in excess of the width of the toe of the pawl. The ratchet supports the pawl for the full extent of its periphery, except as to the slight difference in excess between the width of the ratchet notch and the width of the toe pawl. Should the roller be revolving rapidly the width of the ratchet notch will pass under the width of the toe of the pawl before the toe of the pawl has had sufficient time to gravitate into the ratchet notch. This space of time is very short, for it is only while the excess of width between the width of the notch and the width of the toe of the pawl is passing under the toe of the pawl. This only allows the pawl toe to gravitate into and engage with the ratchet notch under a slow movement of the roller. Under a quick revolution of the roller the pawl toe will not be unsupported by the periphery of the ratchet for a space of time sufficiently long to allow it to gravitate a sufficient distance into the ratchet notch to become engaged with it while the ratchet notch is passing under it.

The patentee also states that, if desired, the pawl may be placed underneath, or at one side of, the hub, instead of over it, as represented, and a spring may be made to bear against it, in order that its projection may engage with the notches.

It will thus be seen that the invention of Hartshorn consisted, so far as concerned the spring roller shade fixture, in dispensing with the weights, counterpoises, and pulleys which had been previously employed, and also with the cord which had been employed to operate the pawl and disengage it from the ratchet notch, and so arranging the pawl and ratchet that the shade may be stopped and retained at any desired point within the scope of its movement by a simple manipulation of the shade itself, the arrangement of the pawl and ratchet being such that the former will engage with the latter at any point by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring.

In the fixture of the defendants the pawl or pin engages with the notch by the force of gravity acting on the pin. This mode of engagement is like that in the Hartshorn fixture. In the Hartshorn fixture the pawl is kept away from its engagement in the ratchet notch by being raised by the periphery of the hub, and kept up by portions of the periphery of the hub until the notch is under it; and it is raised so high by the non-holding wall of the notch that, when the roller is rotating freely under the action of the spring, it will not have time to fall far enough to engage with the holding wall of the notch during the time the notch is passing under it. In the defendants' fixture the pin or pawl is kept from engagement in the ratchet by centrifugal force. It is not supported by the periphery of the hub, or raised by the non-holding wall of the ratchet, or knocked up slightly by the blow of the holding wall of the ratchet, as in Hartshorn's fixture.

In the Almy roller there is a thimble with a side aperture, surrounding the hub, forming a closed chamber when covered by the end cap of the roller. In this chamber is placed a little roller or pin, lying horizontally, and allowed to revolve loosely, and in the rapid revolution of the roller to be thrown above the periphery of the notched hub by centrifugal force; but when the roller is revolved slowly, or its motion is arrested, the loose pin, roller, or pawl falls on to the hub and into the notch, and, in rolling up the curtain, it is caught between that part of the notch which is at right angles with the axis of the hub and the shoulder formed in the thimble at the pin chamber. In this respect the pawl and ratchet in the defendants' may properly be said to have a different operation from the pawl and ratchet in the Hartshorn fixture. In a similar sense the pawl and ratchet in the Hartshorn patent operate in a different manner when actuated by a spring in one of the modes described in the patent, and when left to engage by the pawl falling into the ratchet notch by gravitation, as in the mode stated as the preferable mode in that patent.

In both the Hartshorn and the Almy roller the pawl and ratchet are so arranged that the one will engage with the other at any point or hight of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, by simply manipulating the shade, dispensing with counterpoises, or the usual cord for operating the roller, or the cord for holding the pawl disengaged.

In this respect, wherein Hartshorn differed from all that had preceded him, the mode of operation is the same; and even if Almy's fixture has some advantages over Hartshorn's, it clearly embraces what was his invention, and is secured by the claim of his patent, and is an infringement. As stated by Judge Blatchford in the case of Hartshorn *vs.* Tripp *et al.*, in the circuit court for the southern district of New York: "There is no difference between these two modes of operation in the withholding from engagement, so far as regards the real invention of the plaintiff and the scope of the claim of his patent."

Decree for complainant for injunction and account, as prayed for in the bill.

[*S. D. Law*, for complainant.
J. E. Maynadier, for defendants.]

Supreme Court of the United States.

PATENT RUBBER PENCIL HEADS.

The Supreme Court of the United States, Chief Justice Waite reading the decision, has decided, in the case of the Rubber Pencil Company, appellants, *vs.* Samuel E. Howard, *et al.*, defendants, that what is known as Blair's patent for rubber pencil heads was not a fit subject for a patent. The description named a combination of rubber with some other substance to increase the erasive powers which the opinion decides was not a novel device, and at length limits the claim of originality to the affixing of the head to the end of the pencil in extended and longitudinal shape. The opinion avers that any piece of rubber could be so treated, and says, in closing: "An idea of itself is not patentable, but a new device by which it may be made practically useful is. The idea of this patentee was a good one, but his device to give it effect, though useful, was not new; consequently he took nothing by his patent."

United States Circuit Court---Southern District of New York.

PATENT GAS MACHINE.—GILBERT AND BARKER MANUFACTURING COMPANY *vs.* ABRAHAM BUSSING.

[In equity—Before Woodruff, C. J.—January, 1875.]

This was a suit under letters patent granted to C. N. Gilbert and J. F. Barker, August 3, 1869, for an "improved apparatus for carbureting air." The patent had been sustained at final hearing in a suit against Oakes Tirrell, decided by Judge Woodruff in July, 1874, and the complainants had obtained an interlocutory decree for an accounting as to gains, profits, and damages. Tirrell was a manufacturer of the infringing machines, and the defendant in the present suit had purchased one of the machines so manufactured by Tirrell, and was using it to light his own residence.]

A mere interlocutory decree for gains, profits, and damages against the manufacturer of infringing machines cannot operate as any defense in behalf of the purchaser of one of such machines.

A patentee cannot take compensation for an infringement, including manufacture, sale, and use, and thereafter enjoin that use for which he has taken compensation.

When a patentee claims and recovers, not only the actual gains and profits of the manufacture and sale of the infringing machine, but all the damages which he has sustained therefrom, it is at least to be presumed that such recovery embraces all the profit which the patentee would have received had he made and sold the machine with the incidental and consequential right to use it.

Where the complainants had obtained an interlocutory degree for an accounting of gains, profits, and damages against the manufacturer of the infringing machines, an unqualified injunction *pendente lite* against the purchaser and user of one of the machines was refused. The defendant, however, was put under bonds.

On final hearing the complainants might become entitled to a perpetual injunction against such defendant, as they cannot be compelled, against their will, to permit the defendant to use their invention.

[*E. W. Stoughton* and *W. Stanley* for complainants.
Edmund Wetmore for defendants.]

United States Circuit Court---Southern District of New York.

FREDERIC A. KURSHEEDT *vs.* ROBERT WERNER.

[In equity.—Before Blatchford, J.; June, 1875.]

[The case came upon motion for preliminary injunction.]

BLATCHFORD, J.:

The letters patent sued on herein are reissue No. 3,000, granted to George E. King, June 23, 1868, the original letters patent having been granted to him, as inventor, February 26, 1867.

The patent is for "an improvement in fluting machines." The specification of the reissue says:

This invention is designed for making puffing applicable to shirt bosoms, trimming, or other purposes of dress, in which the article, as it issues from the machine, is (without having recourse to laundering) delivered in a complete form, either single or in two or more series or rows, composed of flattened borders, with flutes running along their inner edges, and puffed or crinkled surfaces between the flutes. The invention consists in a guide constructed with one or more curved or arched portions, in combination with one or more suitable fluting rollers, whereby the material, in passing through the machine, is fluted and contracted laterally, as it were, or drawn up between the flutes to produce the required crinkled surface or surfaces in the puffing.

The main feature of the machine is the arched guide, in combination with two rollers, one above the other, and opposite and near to the guide. The rollers are so formed that the strip of material, after being acted on by the guide, passes between the two rollers. The rollers have such configuration externally on their surfaces as to produce a finished fabric which has a longitudinal strip that is puffed or crinkled in such manner as to possess an irregular wavy surface, and on each side of such crinkled strip a longitudinal strip that is fluted, and on each side of, and outside of, each of such fluted strips a longitudinal flattened strip, through which stitching may be made longitudinally, to render permanent the conformation of the puffing. The portions of the rollers from between which the crinkled part of the finished fabric issues are plain, and so are the portions from between which the flattened parts of the finished fabric issue, while the portions of the rollers from between which the fluted parts of the finished fabric issue are grooved, so as to make grooves and flutes on each roller—a groove alternating with a flute, and the flute on one roller taking into the groove on the other. Each part of each roller is of the same width as that portion of the finished fabric which it is designed to shape. The parts of the rollers from between which the crinkled part of the finished fabric issues are of such diameter that, when the rollers are in proper position, the face of that part of one roller is situated at such distance from the face of that part of the other roller that no considerable pressure is exerted upon the fabric in passing between them. It is the action of the guide, in connection with the grooved and fluted parts of the rollers and the plain parts of each roller that lies between the two grooved and fluted parts of each roller, that produces the crinkled part of the finished fabric.

The claim designates as the invention the curved or arched portion of the guide, in combination with suitable fluting rollers, substantially as set forth in the specification, for the purpose therein specified. The patentee calls the whole instrument in front of the rollers a guide; but the only material part of it is the curved or arched portion. The expression in the claim, "the guide, constructed with a curved or arched portion," is the same thing as saying "the curved or arched portion of the guide."

This has been the construction heretofore given to this patent. King *vs* Maudelbaum (8 Blatchf., C. C. R., 468).

The same patent was again before this court in the case of King *vs.* Werner (decided August 13, 1874).

The defendant in the suit last referred to is the defendant in this suit. He has altered his machine by taking off the detent or finger and putting in place, of it an arched projection, raised up in front of the plain parts of the rollers, and like the arched projection in the said Muller guide No. 5; but he dispenses with the Muller embossing rings, and uses instead rollers like King's, which have plain parts between the fluting parts and opposite the arched projection. He has removed from the King machine those parts before spoken of as immaterial to King's invention, namely, the upper piece of metal in King's guide, and the metal each side of the arched projection. He retains all that there is essential in King's guide, that is, its curved or arched portion opposite the plain parts of the rollers, which are between the fluted parts of the rollers; and he uses such curved or arched portion in connection with rollers which have parts suitable for fluting each side of plain parts, in a machine which operates by means of such fluting parts and such plain parts of the rollers, and such curved or arched piece in front of such plain parts, to produce the crinkled or puffed conformation in the fabric in connection with the fluted parts of it. The mode of operation of the parts is the same as in King's machine, in all features that are essential to King's invention, as described and claimed, and the result in the finished fabric is the same. The defendant takes up an extra width of material by causing the material to ride over and to be raised by the arched or curved projection, and this extra width is crinkled as and because the adjacent parts are fluted.

The plaintiff is entitled to an injunction, as prayed for.

[*F. H. Betts*, for complainant.
A. V. Briesen, for defendant.]