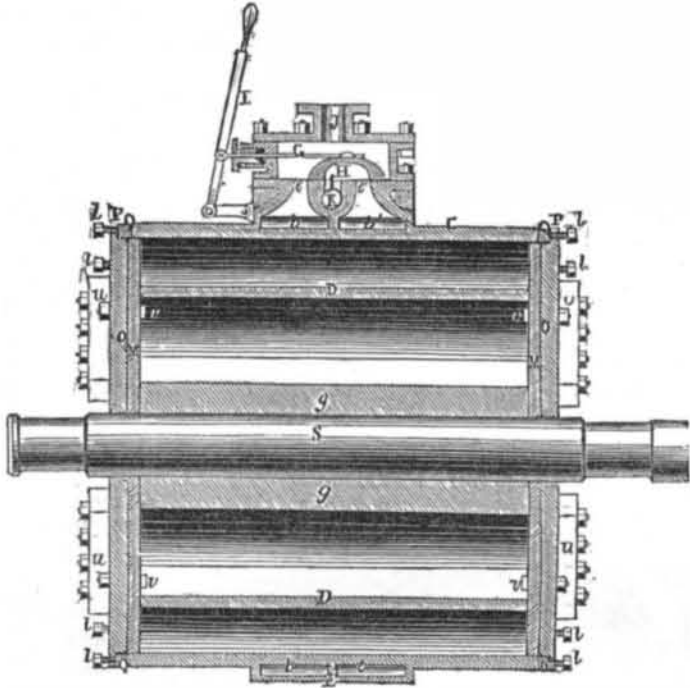


[Continued from First Page.]

its steam by the passage, *e'*, where it is now shown exhausting the steam through the cavity of the slide valve, *H*, and through the exhaust port, *f*, into pipe, *K*. The slide valve is for reversing the motion of the engine; *I* is its lever; it is like those in common use; *R R* are two fixed abutments attached to the fixed cylinder, *C*; these have concave flanges between them, branching from their apexes, and have packing bars, *m m*, which are adjusted by screws, *p p*, to press steam tight against the rotary cylinder.

Figure 2.



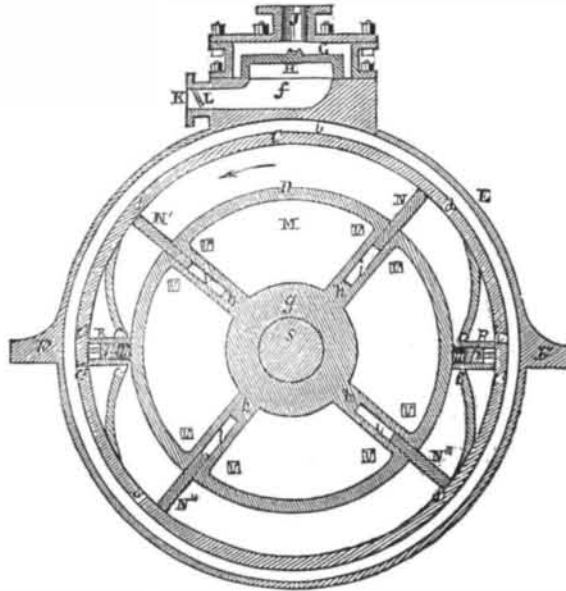
sliders have projections outside of the ends of *D*, these are connected to small pistons in the chamber, *u u*, which small pistons are actuated by steam in the chambers at the ends of the cylinder. The steam from the small pistons is exhausted before a slider comes to an abutment, but commences to act to press out the slider when it passes an abutment. These sliders work free in their recesses, *i i* in the arms, *h h*, but are always pressed steam tight and allow no steam to pass them. This method of working the sliders by steam to press them out, is also new.

M M are the inside cylinder heads, in which there are slots for the projections of the sliders, to be actuated by the small steam pistons mentioned before. *O O* are other cylinder heads,

The steam is now shown as being let in through the ports *c' c'* on both sides of the engine, the one at the right hand side, figure 3, on the upper side of the abutment, and at the other side beneath the abutment, making the engine rotate in the direction of the arrow. Of course the steam exhausts at the right hand side through the ports below the abutment, and on the left hand side above the abutments.—When the engine is moving in a contrary direction, the present steam passages become the exhaust passages.

The sliders, *N N' N''*, by this arrange-

Figure 3.



secured by bolts, *v v*, and fitting close to *M M*, but have flanges, *P P*, all around the outer side, *Q Q* are stiff metal packing rings, corresponding with the size of the interior of the outer cylinder, and fitting closely over the inner heads, *M M*. These packing rings are pressed up by the screws, *l l*, passing into the flanges, *P P*. There is a rotary expansion valve in the chamber above *G*, which may be made to cut off the steam at any desired point, it is rotated by wheels, *U V*, which are operated by the revolving cylinder, one of the heads being formed with teeth on its periphery. The governor is operated by a cord passing from the small pulley, *W*, over *X*, which rotates its spindle and that of the governor; the sliding sleeve, *2*, of the balls, operates the throttle valve through the angle arm

ment of the steam and exhaust ports, are relieved of all steam pressure when passing the abutments, so that there is very little friction on them. Sliding pistons and abutments like these have been used in rotary engines, but the arrangement of the exhaust ports is to relieve the sliders from pressure in passing the abutments—a good arrangement and entirely new. In other rotary engines with abutments, the sliders are forced out by a heart or similar cam, but these sliders are forced out by steam pressure acting on small pistons in the chambers, *u u u* in both ends of the engine. The ends of the

(For the Scientific American.)

Preparing Indigo.

The following is a new mode of preparing the indigo plant for home and foreign consumption.

Before the discovery of South America, all the blues made in Europe, were obtained from the woad plant (*isatis tinctoria*), but since the introduction of indigo the blue vats for woollens have been made with woad and indigo. My object in sending you this article, is to show that the indigo plant, worked up in the same way as woad, would be far more valuable. I am led to this suggestion by experiments made with the wild indigo plant during the last English war, when no European woad could be obtained in our market.

The following is the process of preparing the woad plant for the use of the dyer:—

The seed is planted in rows as early in the spring as the season will allow. When the leaves are ripe, which can be known by a blue ring near the top of the leaves with a spot in the centre, they are gathered and ground in a trough mill, the trough being made water-tight to prevent a leakage of the juice. Knives follow the roller to cut the plant, and thereby facilitate the grinding. When well ground it is made into balls of about three inches diameter, and then placed on boards to be dried. Should there be any appearance of fly-blows on the balls, a little dry slacked lime must be sprinkled over them; without such precaution the balls will breed innumerable maggots, and be spoiled. Some dyers use the balls, but the greater number use them after being couched. The woad plant affords three pickings in one season, and when the whole have been balled and dried, the balls are beaten pretty fine with mallets, or passed through a pair of rollers, then moistened with water, and laid in a heap to ferment. When the heap becomes quite warm, it is turned over to prevent the fermentation from progressing too fast. This operation is repeated several times, until the heap becomes perfectly and uniformly cool; it is then packed in hogsheads, and no further fermentation will ensue. The French and Germans sell their woad in balls, and they are couched by the dyer, or by some one he employs for that operation. I have bought many hogsheads of their balls sent to New York for a market.

The woad vats used in England are 7 feet 6 in. diameter at the bottom, 6 feet at the top, and 7 feet in depth. To set one of these, 560 lbs. of woad is used with 24 lbs. of indigo. This vat can be kept at work for six months when skillfully managed, by adding more woad and indigo when required. The quantity of woad used for the six months is 1120 lbs., or one ton for each per annum. My consumption, when so employed in England, was twenty-four tons yearly, and my younger brother, who now occupies the same premises much enlarged, has consumed from sixty to seventy tons in one year.

Indigo used in the woad and other vats, has to be deoxydized by fermentation, or by some suboxydized metal, and brought back to the same state as the liquor in making indigo when drawn from the steep, before it is oxydized in the beater; and if the fermentation of this liquor were regulated by the same means as is the woad vat, it would make an excellent and permanent blue dye. As the indigofera plant contains vastly more indigo than the isatis, why, if prepared after the same manner, would it not answer for both woad and indigo; at least with much smaller additions of indigo? The consumption of woad in Europe amounts, annually to many thousands of tons, and if the dyers there could be supplied with the indigo plant prepared in the same way, there can be no doubt but the consumption would soon be quadrupled.

WM. PARTRIDGE.

Binghamton, N. Y.

There is now a speck of war between Switzerland and Austria.

Recent Foreign Inventions.

IMPROVEMENTS IN OBTAINING TIN.—Mr. F. W. Emerson, of the Trereiffe Chemical Works, Penzance, England, has patented an invention, which consists in a means of purifying and separating the ore of tin, from other metallic oxydes, sulphurets, arseniates, tungstates, or other compounds, previously to its introduction into the smelting furnace, by digesting the ore (either with or without the aid of heat) in a mixture of common salt, sulphuric acid, and nitrate of soda or potash; the last of these not being absolutely necessary to the success of the operation, though it helps to shorten the time in which the process is performed. The inventor first makes a correct analysis of a fair sample drawn from the bulk of the ore to be operated upon, in order to ascertain the exact nature and amount of the impurities. In the event of its being found to contain any compound of sulphur or arsenic, he first roasts or calcines the ore by any of the ordinary known methods. This process is not necessary, unless such compounds are present. If it is found to contain oxyde of tin—the ores of tin mostly occur as a peroxyde—it will be necessary, in order to avoid loss, either first to peroxydize it, or afterwards to precipitate from solution by the insertion of metallic zinc, or any other precipitating agent. To peroxydize the oxyde of tin, he saturates the bulk of the ore to be operated upon with nitric or nitrous acid, and after allowing it to stand for two or three hours, to permit a full re-action to take place, he puts it into an iron, fire-clay, or other convenient retort, and distills or evaporates it to dryness, re-

ceiving the nitric or nitrous acid gases into stoneware or other convenient condensers, to be used over again. He then mixes the ore with such a quantity of common salt, as by decomposition with sulphuric acid shall yield a sufficient amount of muriatic acid to combine with the contained impurities of metallic oxydes, or bring the oxydes of iron or manganese in wolfram, or the lime in tungstate of lime into a soluble state. He then puts the ore thus mixed with salt into a cistern formed of granite, slate stoneware, or other material that is not seriously acted upon by acid (a wooden trough has been found to answer the purpose), and pours upon it such a quantity of either brown acid or oil of vitriol as will effect the decomposition of the salt. The inventor prefers to use an excess of sulphuric acid. He then turns into the mixture a jet of steam from a steam boiler, so as to keep the mixture at about 200° Fab., stirring it about from time to time with a wooden rake or shovel, so as to expose fresh surfaces to the action of re-agents, adding a small quantity, say 6 or 7 lbs. to the ton of nitrate of soda or potash, for the purpose of enlivening and quickening the operation. If the material should contain micaceous or magnetic iron ores, it would be advisable to increase the amount of nitrate of soda or potash, to assist their oxydation and conversion. The invention also describes analogous methods of treating the ores when copper or tungstate is contained. Claim. Purifying and separating the ores of tin by acting upon the contained impurities with a mixture of sulphuric acid and chloride of sodium, either with or without the addition of nitrate of

potash or soda, with or without the application of heat by any known means.

MANUFACTURE OF IRON AND STEEL.—Mr. T. W. Dodds, of Holmes Engine and Railway Works, Rotherham, York, England, has patented some improvements in the treatment and manufacture of iron and steel. The inventor thus specifies his claims—1. A general arrangement of machinery. 2. The conversion of iron into steel, wholly or partially, by the use of a carbonaceous fuel or a mixture of soda-ash, soda, potash, pearlash, or other alkaline matter, and carbonate or bi-carbonate of lime and charcoal. 3. The mode of converting iron, wholly or partially, into steel by the use of a compound of soda ash, lime, and charcoal, or any mixture of alkaline matter with carbonate or bi-carbonate of lime and charcoal. 4. The mode of treating iron, partially or wholly converted metal, by plunging it when red hot, or thereabouts, into a wet or dry bath—that is, either into water, water impregnated with carbonaceous matter, liquid ammonia, or ammoniacal liquor, a solution of potash, or hydrate of potash, or into a mass of dry carbonaceous material, as highly carbonized sand, charcoal, and soda ash, or other carbonaceous matter. 5. The mode of arranging and working the furnaces of conversion, wherein the retorts or converting chambers may be charged and discharged whilst they are in working condition, without being permitted to cool. 6. The mode of adjusting the anvil level of steam-hammers by means of a hydrostatic cylinder or chamber.—7. The mode of working hammers or tilt levers so as to strike in both directions by the use of



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING NOVEMBER 1, 1853.

PROTECTING BULWARKS FOR WAR VESSELS—By William Ballard, of New York City: I claim the use of the shield board, in combination with the bulwarks of a ship, as set forth.

I also claim the use of the stanchions and panels, in combination with the deck of the vessel, and the shield board, for the purpose and principle of construction and operation, as set forth.

MAGNETO-ELECTRIC MACHINES—By Calvin Carpenter, Jr., of Pawtucket, Mass. Patented in France April 18, 1853: I do not claim the employment of permanent magnets of helical coils of wire of metallic segments upon a cylinder of non-conducting material, or of springs such as I have described, either separately or in combination, for the purpose set forth, otherwise than in the manner in which I have arranged, connected, and combined them.

But I claim the combination of one or more series of permanent magnets radially arranged, the poles of each series being in one plane, and in two concentric circles, with a disc or discs of helices, arranged in three sets, such manner that the three sets may be acted upon successively at nearly equal intervals of time, one set by the inner circle of poles, and the other two sets by the outer circle of poles; the currents of the several sets of helices being thrown into one constant or uninterrupted current by means of the current discharges and springs, or their equivalents, as described.

CAR COUPLINGS—By A. P. Chatham, of Canoga, N. Y.: I claim constructing the buffer, A, with a recess to hold the link in the proper position for entering the buffer, B, and the buffer, B, with a cavity, and an inclined straight catch extending to nearly the top of its cavity, so that when a link is connected to the buffer, A, and passed over the catch of the buffer, B, it cannot jump up and become detached from the catch while the cars are in motion, whereby the danger of the cars being separated while running is greatly lessened, while the coupling is simple, cheap, and not liable to get out of order.

PEN AND PENCIL CASE—By G. S. Clark, of New York City: I claim neither the pen or pencil slide separately, for both have been previously used, but I claim the peculiar arrangement of the pen and pencil slides, as described, viz., having the pencil slide with its covering tube placed within the pen slide or the tubes C and D, operating the two slides independently of each other in the manner set forth.

[This improvement is noticed on page 4 of this Vol.]

CANE AND MAIZE CUTTERS—By John W. Cormack, of Quincy, Ill.: I claim the framing and manner of attaching the knife and arm to the sled.

CONDENSERS FOR STEAM ENGINES—By Benjamin Crawford, of Pittsburgh, Pa.: I claim the arrangement of the tubes or passages in the condenser, with the inlet and outlet openings in the case, as specified, so that a current of cold water is caused to flow round both ends of the tubes, whereby the condenser is prevented from undue heating, and the tubes kept coolest at both ends, and warmest at the middle, whereby the great bulk of the heat is transferred to the condensing water, near the point at which it is discharged from the case.

Second, constructing the case of the condenser with stuffed or other equivalent joints, to render it flexible, and thereby prevent fracture.

MACHINES FOR STICKING PINS—By C. O. Crosby, of New Haven, Conn.: I claim rollers that conical rollers have been used for forming the inclined channel for conducting the pins, and that a screw has been used to separate the pins, and that pliers have been used in the manufacture of pins, and that clamping bars have been used for clamping the paper, after it has been crimped, and that the paper has been drawn through and rolled up by a revolving cylinder so regulated as to regulate the quantity of paper, as to folding up. I therefore do not claim either of these, as such.

I claim the method of crimping the paper by means of movable folding blades in combination with the bed plate, while the back and front sides of the paper are sustained by the clamping bars, as described.

Second, I also claim the method of crimping the paper by means of moving folding blades descending and ascending between the stationary and moving clamping bars, when the clamping bars serve as a part of the crimping apparatus, whether the paper be sustained by a bed plate or otherwise, when constructed and operating as described.

Third, I also claim the method of lifting the pins from the distributor, and carrying them away and sticking them into the crimped paper, while the distributor is bringing another supply of pins in front of the clamping bars, thereby keeping the lifting pliers or other lifting apparatus continually in operation, when performed by the means and in the manner described.

Fourth, I also claim the lifting apparatus, or any substantial part thereof, when constructed, combined and made to operate as described.

Fifth, I also claim the combination of the lifting apparatus described, with the inclined transverse notches in the stationary clamping bar, by which means the pins will always be lifted in an exact line, even though the pins are not straight, when constructed, combined, and made to operate, as described.

Sixth, I also claim the combination of the conical rollers, with the side planes, to form a straight inclined conducting channel, when combined, constructed and made to operate as described.

Seventh, I also claim the lifting pliers, when constructed and made to operate, as described, either with or without the creper sliding guide or director.

MACHINES FOR STICKING PINS—By C. O. Crosby, of New Haven, Conn.: I do not claim the channels nor grooves, nor the punches working in the grooves, nor the use of clamping bars, to serve also as crimping bars, because these have all been used before or claimed in my former applications.

I claim the combination of the punches, working in horizontal grooves, with the slide, and the straight inclined channels, when arranged as set forth.

I also claim the combination of the punches with the double folding blades, when these are combined with the movable and stationary clamping bars, constructed as described.

I also claim the method of crimping the paper by means of folding blades working between stationary and moving clamping bars, when the clamping bars serve as a part of the crimping apparatus, when constructed and operating as described.

I also claim the bars (forming the side guides to the spaces) to guide the pins while falling down from the separator to the horizontal grooves, in combination with the grooves and punches, when they are constructed and arranged as set forth.

MACHINES FOR STICKING PINS—By C. O. Crosby, of New Haven, Conn.: I claim the use of a slide wheel to connect the lower end of the straight inclined conducting channel with the upper end of the vertical side guides to convey the pins from the former to the latter, while it changes the position of the pins from vertical to horizontal, as described, whether with or without the counter-sinks in the inner edge of the peripheries.

I also claim the use of a separating wheel with teeth on its periphery to sustain the column of pins, separate them, and drop them separately into the grooves in the sliding bed, at the proper time by its revolution, as described, whether the wheel be made of two discs or with the periphery grooved out or the periphery be single, and the teeth cut directly across it.

I also claim the method of crimping the paper by the use of jaws with a tongue between them to slide across the paper, such a manner that the paper may be crimped by double folding blades forcing the two folds of pa-

per through the space between the tongue and the jaw on each side, so that the pins may be stuck through the crimps over the open edges of the folding blades, while the tongue will be between the pins and the paper, and so that both the bars and tongue, and the double folding blades may be readily withdrawn to release the paper, and this whether the double folding blades are above or below the jaws and tongue, when they are constructed, used, and made to operate as described.

HOSE PROTECTOR—By David Demarest, of New York City: I claim the employment of a portable section of a rail track constructed as described, and with an opening in its center for the hose to fit in, when said section is placed over said hose, the same being employed in the manner described, and for the purpose of covering the hose at certain points, and saving them from the great injury they sustain from carriages and cars passing over them during the time of fires, and as fully set forth.

[This useful invention is noticed on page 250 Vol. 8, Sci. Am.]

CAR WHEELS—Joseph Farnsworth, Jr., of Madison, Ind.: I am aware that P. W. Gates made a cast-iron car wheel in which the rim is connected to the central parts by two sets of short spokes, but this (without admitting its priority to my invention) I do not claim, as my improvement relates exclusively to that class of wheels in which a disc extends from the hub to the rim, my object being to support the rim and strengthen the disc by flexible supports, which will perform their duty without straining and endangering the breaking of the disc, as in the case of the wheels of this class.

I claim a cast-iron car-wheel, constructed as described, but I make no claim to any part of the wheel by itself, nor to any other combination of parts than those set forth.

REGULATING THE SPEED OF STEAM ENGINES—By Luther R. Faught, of Macon, Ga.: I do not confine myself to the employment of a penulum or air-spring, as there may be other devices that would produce analogous effects; neither do I confine myself to the precise methods of producing friction described, as both the methods that I have shown are well known, viz., by the pressure of the steam in the valve chest, and by plates compressed to the rod by a spring; nor do I confine myself to the adjustment of the relation between the penulum, and the device or devices which produce the friction, as it will be evident that the lengthening or shortening of the penulum will produce the same effect.

I claim a cut-off valve, as cut off the steam at the desired point in the stroke, and will increase or diminish with any increase or diminution of the speed of the engine, and thereby retard the motion of the cut-off, more or less, in order to cut off the steam earlier or later in the stroke, and thus regulate the speed, as described.

[See notice of this invention on page 388, Vol. 8, Sci. Am.]

GRAIN CRADLES—By C. P. Kelsey, of Livingstonville, N. Y.: I claim, first, the bar or its equivalent, for attaching the fingers of the frame to the snath, for the purpose set forth.

Second, I claim so connecting the braces with the fingers, by means of link or other universal joints, that the snath may be folded close against the fingers, without requiring that the said braces should be loosened in the snath, as set forth.

COATING SHEETS OF METAL—By Edmund Morewood & George Rogers, of London, England: We claim the method described of coating sheets of metal by immersing them in other molten metals, which are more fusible, by means of rollers arranged, as described, so that with the same machine, sheets of metal, varying in thickness, may be coated free from puckers, bends, or indentations on their surfaces, thus rendering unnecessary the subsequent operation of flattening, which heretofore could not be dispensed with.

ADJUSTABLE SPRINGS FOR CARRIAGES—By R. S. Morse, of Dixfield, Me.: I claim the adjustable auxiliary springs in combination with the bed spring or springs as set forth.

BRACE AND BIT FASTENER—By Howard Perkins, of North Bridgewater, Mass.: I claim the manner of constructing and fastening the bit into the socket by the slide lock, as described, having the end of the bit so formed as to fit into the groove in the key, as set forth, and having the end of the bit press down upon the key, so that when the key is slipped back, the bit may be easily removed.

GOLD WASHER—By Henry M. Ritterband, of New York City: I claim the combination of the tube, valve, and lip, constructed as described, for the purpose of separating, as described, forming an apparatus for removing earth and stones from auriferous earth, as specified.

SPRAW AND GRAIN SEPARATORS—By John A. Taplin, of Fishkill, N. Y.: I claim the vibrating straw carrier and grain separator, constructed as set forth with a screen and fluted bottom board, for the purpose of separating the grain from the straw, returning the former to the winnowing apparatus, and conveying the straw to the hinder extremity of the machine.

METALLIC PENS—By Wm. H. Towers, of Philadelphia, Pa.: I claim making metallic pens with depressions or cavities for retaining the requisite quantity of ink to supply the same, and making them flat on both surfaces, and tapering the shank or main body of the same, and inserting it in a corresponding socket or opening in the center of the lower end of the pen holder, in the manner set forth.

MACHINE FOR TURNING CYLINDERS OF WOOD—By Increase S. Waite, of Hubbardston, Mass.: I claim the combination composed of the feeding hopper, the series of rotary mandrels and centers, applied to the shaft, the revolving cutter or chisel, and the mechanism for giving to each mandrel an endwise movement backward and forward, as described, mechanism for arresting the rotary movement of the shaft, or the heads, during the time necessary for the operation of the cutter or chisel wheel, on each piece of wood, and finally a mechanism for rotating the shaft and its two heads, all as described; the mechanism for moving each mandrel endwise, as described, being the spring, the wheel, and cam plate, as described, that for rotating the mandrel being the gear, and the gear on the shaft put in revolution as described, that for arresting the rotation of the shaft during the time necessary to turn down an article, being the stop plate, and the screw applied to each mandrel, and made to operate, as specified; and finally, that for rotating the shaft, being the friction roller made to operate against the periphery of the circular head, and to be rotated and borne against said head, as set forth.

GENERATING AND CONDENSING STEAM—By Peter H. Watson, of Washington, D. C. Ante-dated May 2, 1853: I claim the method of recovering the heat of the exhaust steam, by passing it through the comparatively cool water in the lower portion of the boiler, as set forth.

I also claim the arrangement of the upper end of the drop flues, in an inclined plate, to facilitate the entrance of the smoke into the flues, and the passage of the steam from beneath the inclined plate into the upper part of the boiler, as set forth.

[Our cotemporary is becoming a veteran in the field of invention.]

GRAIN SEPARATORS—By J. V. A. Wemple, of Chicago, Ill.: I claim the employment of a cylinder, having tangential, or other suitably projecting plates across or along its periphery, for the purpose of separating the grain and breaking the impinging effect produced by the threshing cylinder on the endless apron, the said cylinder being so situated and operating in rear of the threshing cylinder, as gently to feed over it the straw and headings, as they are delivered from the threshing cylinder.

BEE HIVE—By Geo. Calvert, of Upperville, Va.: I claim the combination of the honey boxes with another box and cross-pieces, arranged and operated in the manner set forth.

DEVICES FOR STEERING CULTIVATORS—By Seneca Lapham, of Salem, Ohio: I claim the combination and arrangement of the parts, consisting of the lever and its attachment to the brace, and the connection of the tongue to the lever by the staple. This I claim in its application to the purpose of changing the direction of this and other machines, as specified.

FLUID METERS—By Wm. B. Leonard, of New York City: I claim the combination in fluid meters of mechanism for measuring the volume of a flowing fluid, however variable, mechanism for measuring the velocity of the flowing fluid, however that may vary, mechanism for multiplying these two quantities together, and mechanism for recording the product, in such manner as to show on a register the quantity of fluid that has passed, as set forth.

I also claim the combination of a self-acting guard valve or valves, however constructed or arranged, with the water-wheel or other motor, in a meter, in such manner that the flow of water through the meter, will be arrested whenever its pressure is not sufficient to give motion to the motor the instant it begins, whereby the escape of water through the meter unmeasured is prevented.

[This is a very ingenious and useful invention.]

OPENING AND CLOSING GATES—By Wm. T. Merritt, of Hart's Village, N. Y.: I claim elevating or depressing, or opening and closing the gate, as described, viz., by means of the shaft, having upon it the pulley F, the pulleys, G, G, being attached permanently to said shaft, and having ropes attached to them; and the pulleys, F, F, being placed loosely on the shaft and connected to it at a certain period by means of pins on the shaft working in slots in the bosses or hubs of the pulleys, said pulleys having the chains attached to them and to the upper ends of the gate styles, and also the chains, I, I, with the weights, the chains, I, I, being attached to the lower ends of the styles, the gate being prevented from being casually depressed by means of the pawl, which is freed from the notch in the boss or hub by the dog, substantially as set forth.

[See notice of this invention on page 404, Vol. 8, Sci. Am.]

STRAIGHTENING AND CURVING RAILS—By Geo. Williston, of Brunswick, Me.: I am aware that a machine has been used in Bavaria, which acts by the pressure of a screw upon the bar to be bent, the bearing or platform being placed underneath the bar. This I do not claim.

But I claim the combination of the screw, strap beam, and slide, constructed as described, with the beam placed on the top or side of the rail for the purpose of straightening or curving rails on railroads, without the necessity of removing the same from the sleepers.

NOTE—In the above list of patents, seven were secured through the Scientific American Patent Agency.

DESIGN.
PARLOR STOVE—By Winslow Ames, of Nashua, N. H., assignor to Hartshorn, Ames & Co., of Boston, Mass.

(For the Scientific American.)
Nova Scotia Patent Laws.

[Synopsis of an Act of the General Assembly of the Province of Nova Scotia, relative to patents for useful inventions; passed in 1851.—Condensed by Peter Stubs, Barrister, Attorney at Law, and Notary Public, of St. John, N. B., B. N. A.]

SEC. 1. A resident of Nova Scotia for one year, may apply to the Governor, alleging that he has discovered any new and useful art, machine, manufacture, or composition of matter, or any new or useful improvement thereon, previously unknown, the Governor may direct Letters Patent to be issued, granting to the person so applying, and his representatives, for a term not exceeding fourteen years, the exclusive right of making, using, and vending his discovery. Letters to be recorded by the Provincial Secretary, in a book to be kept in his office for that purpose.

SEC. 2. Where Letters Patent are thus granted, and another person shall discover any improvement in the principle or process of such invention, and shall obtain Letters Patent for such improvement, the person obtaining the new patent shall not make, use, or vend the original invention, nor shall the original patentee make, use, or vend the improvement.

SEC. 3. Simple change of form or proportions of any machine or composition of matter, not deemed a discovery.

SEC. 4. Applicants for Letters Patent to pay in the Secretary's office, twenty shillings (\$5).

SEC. 5. Any person may obtain copies of Letters Patents at sixpence (10 cents) per folio, and drawings obtainable also at a reasonable fee.

SEC. 6. Applicant for Letters Patent to make oath that he believes that he is the true inventor or discoverer, and that his use, invention, or discovery was not previously known in the Province.

SEC. 7. Before Letters Patent are granted, applicant to deliver a full description of his invention or discovery, and the manner of using, or process of compounding the same, and in case of a machine, to deliver a model, and explain the principles by which it may be distinguished from other inventions, and shall accompany the same with drawings, when the case admits of drawings, or with specimens of ingredients sufficient for the purpose of experiment. The whole to be filed or lodged in the Secretary's office, and copies of description are evidence in a court of Justice, when certified by the Provincial Secretary, where matters concerning such patents may come in question. Governor may dispense with the delivery of a model at the Secretary's Office.

SEC. 8. The patentee may assign Letters Patent, and assignee then stands in the stead of the patentee, as well as regards his rights as his liabilities. Assignment to be recorded in Secretary's Office.

SEC. 9. Actions maintainable for pirating patents, and damages recoverable.

SEC. 10. Defendant may plead the general issue, and give this act in evidence, and every special matter, to prove that the specification does not contain the whole truth, or contains more than is necessary to produce the described effect, and upon further proof that concealment or addition is fraudulently made, or that the invention or discovery is not original, or that such patentee had surreptitiously obtained his Letters Patent, then the verdict and judgment shall be for the defendant, with costs, and such Letters Patent shall be declared void.

N. B. It would appear that any person, whether a British subject or not, can take out Letters Patent in Nova Scotia, and all applicants are liable to the same expense; but in any case, the applicant must have resided in Nova Scotia for twelve months prior to the date of his application. This was formerly the case in New Brunswick.

Gum Arabic Solutions.

MESSRS. EDITORS—Your correspondent, "S. A. C.," of Hartford, I think, is very much mistaken in his article on gum arabic solutions, if he intends to convey the idea that they can be kept a considerable length of time without changing, by use of the means he has cited. An aqueous solution of gum arabic remains but a certain length of time unchanged, and that term is as conditions for fermentation are avoided, viz., an elevated temperature and exposure to air; when these occur the introduction of so small a quantity of alcohol or volatile oil will not prevent a change, while the former would rather tend to facilitate acetous fermentation particularly if the solution be fluid. Therefore for the better preservation of gum pastes, they should be made of a good consistence and kept in closed vessels in a cool place when not wanted for immediate use. Tragacanth paste (which is not strictly a solution of the gum in water) undergoes change much sooner than gum arabic, probably owing to the presence of a small proportion of starch which it contains, and acquires a more foetid odor, particularly if not of a fine quality. Essential oils may serve to cover this foetor and render it tolerable for a longer time, but the most advisable plan is to prepare these pastes in quantities to serve but for a short time as they are so readily made, and it would be well to observe cleaning the vessels thoroughly before preparing a new batch. Nothing, I believe, is known that will preserve gum solutions unless added in such quantities to make them less valuable as pastes or cements. Gum arabic and tragacanth are preservable only in the dry state.

JNO. H. KASER.

Reading Pa., Nov. 1, 1853.

Arresting for Infringement of a Patent.

MESSRS. EDITORS—Can a resident of one State be arrested in any one of the United States for the alleged infringement of a patent and be required to give bail and stand trial in such State as the plaintiff may please to arrest him?

M. C. H.

[Yes he can, if in accordance with the laws of the State wherein he is arrested, not otherwise. If the resident of one State goes to another, and infringes a patent, he is surely amenable to the laws as they exist in that State with respect to arrest and bail. The practice of the U. S. Courts in preliminary matters is to be guided by the local laws of the States. In one case, that of Sherman versus Cook, for the unlawful use of Woodworth's planing machines in Vermont, a bill was filed on the 27th June, 1850, and the suit brought in New York before Judge Nelson. An objection was taken by the defendant's counsel to the jurisdiction of the Court, on the ground that the use of the machines complained of was in another judicial district, viz., in Vermont. It was urged that the proceedings should have been instituted in that District. Judge Nelson, however, decided that the party concerned in the infringement was responsible, and it was enough if the offending machine was reached through him, who was accountable for the wrong, and without whose agency there would have been no room for complaint. The United States' Courts have the jurisdiction of patent matters.]