Scientific American.

Imponderable Agents.--No. 5. [Second Series.]

LIGHT-FOUCAULT'S EXPERIMENTS-The principal phenomena of light, its reflection from polished surfaces, its refraction or deviation from its path when passing through media of varying density, its decomposition into several colors when passing through a prism of glass, can be very well explained by the emission theory of Newton. But this theory involves many difficulties which it cannot solve. It cannot explain, except by a dubious hypothesis, how part of an incident ray is reflected, at the other refracted. The undulatory theory solves difficulties which the emission cannot. If there is a subtle fluid in the universe, the vibrations of which produce the phenomena of light, then it is evident that the velocity of its motion must experience a certain modification according to the density of the media in which it occurs. Such is the question which Foucault undertook to prove by a series of beautiful experiments, in which he was entirely successful. It struck that eminent philosopher, recently deceased, M. Arago, that Prof. Wheatstone's revolving mirror, for testing the velocity of electricity, would answer well to test the velocity of light in passing through media of varying densities. The plan was to evolve an electric spark, direct it toward a revolving mirror -after having divided it-and cause one part to travel through air, and the other through a tube filled with water, then to receive and study the reflected images. If the water should accelerate or retard the motion of the light, the two rays could not arrive on the mirror simultaneously. The ray which was to arrive first was to fall on the mirror in a certain position, and the ray subsequently arriving would meet the revolving mirror in a more advanced position of its revolution.

Foucault, after much mental labor, devised a machine to accomplish this difficult problem of measuration. A beam of light was made to pass horizontally through a narrow aperture in a dark chamber, and was suffered to fall upon a revolving mirror. The rapid rotation of this mirror threw upon the sides of the chamber a slight luminous track, in which another mirror was so set that it reflected the rays thrown off by the revolving mirror. The rotary motion of the latter was very rapid-800 revolutions per second. The duration of the journey taken by the ray in passing from the revolving to the fixed mirror, and back again, was sufficiently long to allow the first mirror to change its position so that the ray, in return, would take the new direction given it by the altered angle of that mirror. M. Foucault succeeded in measuring this deviation, which he found to be proportional to the velocity of rotation as well as the length of space travelled over by the rav. He also found that this deviation was greater when the ray was passed through water than through air, and the former being a denser medium it was, concluded that it presented an obstacle instead of favoring the transmission of light. Foucault's experiments were published in most of the foreign scientific journals, in 1851, and they attracted no small amount of attention. At the present moment almost every eminent man of science, believes in the un-

We are totally ignorant of first causes; that is, we cannot explain why certain effects should be produced, when certain conditions are fulfilled-we can only tell that when these conditions are fulfilled certain effects will invariably follow. Why the three primitive colors should be developed in a ray of light by a prism, we cannot tell; we only know that such are the effects produced—the division of a white ray of J. E. Holmes, in No. 15 "Scientific Ameriof light into three colors, when that ray falls on a prism of glass. The undulatory theory, no tal Palace, would appear to attach more impormore than the emission theory, can explain this. | tance to the subject than I did at the time I Neither can the phenomenon of the sun beating like a huge heart upon the subtle ether, throwing out light from the center of our astral system, as the life blood is thrown from a hu-perly speaking; I might call them ameliorators, man heart, be explained, any more than we can inasmuch as thay govern the variation of speed explain the principle of life.

"The laws of nature," be they relating to light or any other subject, is an expression employed to describe the operations of bodies or powerful mainspring making six turns; it was erns perhaps just as much too much as the othmatter, and that is all.

phenomena. New discoveries are being continually evolved. In a lecture recently delivered before the Royal Institution of London, by Prof. Stokes he communicated some new and interesting observations on Internal Dispersion. He found that the blue flame of sulphur burnthe phenomena extremely well. Letters written upon white paper, with a solution of chinin, immediately become visible when illuminated with this light, particularly when it is passed through blue glass, although such writing is invisible in gas light. By employing the light of the powerful galvanic battery of the Royal Institution, the Professor obtained, by lens and prisms of quartz, a spectrum from six to eight | fail, I set about discovering the cause. times as long as the ordinary visible spectrum, and it was crossed from one end to the other with bright bands. The interposition of a plate of glass shortened the spectrum to a small fraction of its original length, the highly refrangible portion being entirely absorbed. The discharge of a Leyden jar gave a spectrum which was about as long, but it was not similar to the others, as it consisted only of insulated bright bands. He also found that our atmosphere was not perfectly transparent for the very highly refrangible rays of the sun's light.

Introduction of the Potato into New England.

The Scotch immigrants, who were the first to introduce the manufacture of linen in the American colonies, were also the first to introduce the potato on the shores of the New World. In referring to this fact, the Boston "Transcript" mentions the following interesting particulars:-

"These frugal and industrious persons were descendants of a Scotch colony, who settled in Ireland about the middle of the seventeenth century; but on account of religious persecution were obliged to flee to this country, where they arrived in 1718. They came over in five ships and landed in Boston, having previously sent over an agent to make necessary arrangements.

They introduced the culture of the potato, which they brought with them from Ireland. Until their arrival this valuable vegetable, if not wholly unknown, was not cultivated in New England. They passed the previous winter in Andover, before settling in Londonderry, and there left some potatoes, which were planted and came up luxuriantly. The family whoraised them cooked the balls instead of the vegetable, and after trying them in various ways, pronounced them unfit for use, and the mistake was not discovered until the plow turned up the real potato."

[By recent foreign papers we learn that two intelligent Irishmen, from the same part of Ireland as the above-mentioned New England settlers, have, in the potato line, put forth the theory that the potato can only propagate by cuttings for a certain number of years, when its propagating force, by such a plan, fails, and times. Now, notwithstanding the assurance of thus they account for the potato disease. To recruit or renew the propagating force of this the Crystal Palace, there was a variation of their apple of the earth, they propose to renew the new stock from the plumbs. This theory is not new, yet we think favorably of the recom- 46 and the Corliss 37 revolutions per minute, mendation to raise new seed potatoes from the balls. The cause of the disease, as set forth is not correct, in our opinion.

(For the Scientific American.) The Governor.

The following remarks would probably have never been made, were it not that the Report port. can," on the trial of steam engines in the Crysmade my experiments.

All the governors that I have ever seen applied to steam engines, are not governors, proonly partially. I discovered this fact at the time I made experiments with my Fan and Fly in 1849. I had a machine driven by a very governed by the usual fan with which I obtain. ers governtoo little. I am very glad that this re- Mr. Whiting has every facility for doing this.

Although light is, in the eloquent language | ed these results. When the spring was en- | port emanating from such a distinguished source of Milton, "the offspring of heaven's first tirely wound up, the machine made 34 revoludawn," we are still very ignorant of many of its tions per minute, and within the last turn it made 28 revolutions, variation 0.176. Removing the fan and substituting an ordinary governor, the latter intended to regulate the speed by the increased and decreased effect of inertia alone, consequent upon the convergent and divergent positions of the balls of the governor, ing in oxygen is a source of rays which exhibit I found that when the machine was fully wound up, it made thirty and in the last turn but 20 revolutions per minute, variation 0.333. At this I was somewhat astonished, but from repeated and careful experiments I invariably obtained the same results; and I was reluctantly constrained to doubt the efficacy of this simple and beautiful instrument that has been so long and universally applied, but finding that it did

The action of the Governor, applied to a steam engine, depends upon two forces, "centrifugal" and "gravity," each tending to counteract the other; and it is as the one or the other predominates, that the balls attain their different attitudes. These forces act at right angles to each other: centrifugal force acts horizontally and gravity perpendicularly. Now the balls are, by the present arrangement, made to describe a circle. The question arises whether that is the proper curve to move in. I have tried all the known curves, and have found them to fail; so much so that I have kept no record of their performance. At length I found that the right angle was the proper plane for the balls to move in, which I proved to the satisfaction of myself and friends by two experiments. The one consisted in having a funnel, the sides of which inclose 90 degrees, it was made of common tin, having small strips, radiating from the vertex to the base, soldered inside, which cone or funnel I placed with the vertex fitting tightly upon the spindle of the machine in such a manner that the base was uppermost. I filled it partially with shot; then trying it as before, I discovered not the least variation between the two extremes of the mainspring. A mainspring making six turns exerts six times more power when fully wound up, than when run down to the last turn. It is hardly necessary to remark that the shotby the action of centrifugal force was thrown to a certain distance from the axis of the funnel proportionate to the power, and that by the variation of the inertia of the shot, my machine was kept at equal velocity. My other experiment consisted in making the arms with the balls of the usual governor, having slots cut in them (the arms), working in guide pins fixed upon the axis or spindle, and making the upper ends or present bearings by means of a pin towork upon a peculiar curve, which I discovered upon the occasion, which curve I have never been able to find described, and therefore I believe that I am the discoverer. I have called it the Eggoid, from its resemblance to an egg. I found the balls to move from the axes, at an angle of 45°, to the horizon, and the machine, as before, performed its revolutions in equal the satisfactory performance of the engines at revolutions per minute, for at the commencement of the experiments the Lawrence made and that when the pressure of steam had been reduced down to 10.2 pounds, the former made 10 and the latter 14 revolutions per minute, which is a variation for the Lawrence of 0.782 and for the Corliss of 0.621,-not so flattering

I wonder what a "calico singer" would think were he to be interrupted in the midst of his operations by the engine making even onequarter of that variation? The governor of the "Southern Belle" works upon a different but equally erroneous principle with the other engines. The balls move upon circular ways, but the ways are segments of a circle, whose diameter is much larger than that described by the balls of the other governors. I am sorry that we have not the Report upon this engine also, for it is my opinion that this governor gov-

has been made, and hope that it, with these few remarks, may stimulate our machinists to obviate these glaring defects, so that at the next World's Fair we may not have these living monuments reproaching us for our ignor-JNO. F. MASCHER.

Large Ships --- Conflagration.

MESSRS. EDITORS.—I noticed your interest ing article of the 24th inst. on "Large Ships-Ancient and Modern."

I have a friend, who frequently said, &Some how I happen always to be right in my opinion." I have frequently thought you might, if disposed to be egotistic, use the same language.

Your opinion, however, "that we shall yet see much larger ships in our harbor than any which now float there," I think is an error of yours for once.

I once heard of a ship carpenter who wanted to surprise his competitors by building a fine boat. He constructed and finished it in the garret of his house; but when thus finished, the thought occurred to him for the first time. 'How am I to get it out?"

The "Great Republic" when laden cannot be got out of our harbor, neither could it be got into the Liverpool docks.

My opinion is, the builder of the Great Republic will forever have the unenviable reputation of building "the largest ship in the world." Yours truly, G. B. Jr.

Brooklyn, Dec. 26, 1853.

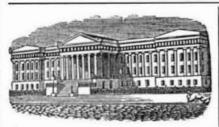
[Our correspondent may be right, but "time will try all better far than tongue can tell."-The vessel which called forth our article and the above letter will never pass out of our harbor. On the night of the 26th ult., her rigging caught fire from the sparks of a conflagration of buildings at a short distance from where she was lying, and the fiame spread from spar to spar, until in a short time she was enveloped in a sheet of living fire. On the next evening all that was left of this once magnificent vessel -the wonder of the world-was that part of the hull which was sunk beneath the surface of the water. It was a sad sight to us. Two other ships—the "White Squall" and "Joseph Walker"-were also burned to the water's

The "Great Republic" was loaded with a valuable cargo, it consisted of the following articles, eight hundred tierces of beef, 97 tierces lard, 53 barrels of lard, 20,406 bushels of wheat, 33,500 bushels of corn, 6,630 barrels of flour, 1,023 bales of cotton, 639 boxes of tea, 4,046 barrels of resin, 14 hogsheads of tobacco, 70 casks of argola, and 367 pieces maple and cedar wood, all valued at \$250,000.

This great cargo of provisions might have supplied the Turkish army for a month. She was ready to sail for Liverpool, and it it is said would have left her dock the previous evening, but could not get over the bar on account of low water. All the great ships which have vet been built have been unfortunate—is the finger of fatality pointed in anger against them? We do not know whether or not Mr. McKav will ever build such a large ship again, but to us it seems very discreditable to large cities like New York, that a depth of water cannot be maintained in the harbor, greater than will float a vessel drawing but about 21 feet. If the size of ships is to be restricted by such considerations, let the disgrace rest where it should. As we have said before, a large ship is the most profitable for long voyages, because it can carry 4,000 tons as easily as one of half the capacity can carry 2.000 tuns the same distance in the same time. In one voyage to Australia, a large ship willsave 140 days sailing by this method of computing advantages. It may indeed be said that two small ships-half the size-will effect the same object. Not exactly, for upon that principle of reasoning, we would still have been navigating the Atlantic with 100 tun brigs, and 60 tun "smacks."

We invite the attention of our readers to the advertisement of D. W. Whiting. In the shipment of machinery it is very important—where it is possible to do so-to consign it to some agent who has had experience in handling it.

Scientific American.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JANUARY 3, 1854.

MACHINE FOR SAWING BEVEL SURFACES.—Alfred C. Cook, of Russelville, Ky.: I claim the employment in the manner described of an adjustable swinging bevel gauging plattorm provided with a sliding carriage, which has adjustable guide rails, and adjustable heel and side rest, and pointer, in combination with an index plate and cutter, the whole being constructed, arranged, and operating in the manner and for the purposo herein described.

scribed.

Improvements in Feathering Paddle Wheris.—Samuel Champion and Thomas Champion of Washington, D. C.: We claim no particular shaped blades for our paddles, as various shapes may be used, but as a general principle we prefer, where it can be applied, the narrow oar-shaped blade reaching deep into the denser water, so as to make the engine labor in forcing it through without much disturbing the surface, we are encouraged in this view by the narrow oar, the fins of the fish and particularly by the long deep propellers of the deer, that animal being among the very fastest of swimmers as well as runners.

We claim the continuous arm or arms through the shaft, hub, orrim, with a blade on each end thereof, placed permanently at right angles to each other, so that when one is feathered in the water, the other is placed in proper position for propulsion by that act, also the reversing cam frame in combination with the oblong projections at the shank of the blades.

Improvement in Running Gear of Wagons, &c.—Isaac

long projections at the shank of the blades.

IMPROVEMENT IN RUNNING GEAR of WAGONS, &C.—ISAAC
Crandal, of Cherry Valley, N. Y.: I am aware that John
Jones obtained a patent dated January 14. 1851, which
by the introduction of a helical spring, and slot or sliding bar connecting the hounds or partial reaches (between the front and rear axles) in connection with his
perch swiveling on both axles; purposes to prevent the
effect of whipping the horses with thetongue, and drawing it back to the line of travel when moved. I therefore disclaim any part of such devices.

But I claim the arrangement of the spring bar (or
partial reach) furnished with a slot, •, the bar, H. conpecting the sand bar, C. and upper sway bar, K. in

partial reach) jurnished with a slot, \$\infty\$, the bar, \$H\$, connecting the sand bar, \$\infty\$, and upper sway bar, \$K\$, in which is inserted a pir, \$\infty\$, in combination with the ordinary reach or perch and running gearof wagons for the purpose of not only giving direction and steadiness to the tonsue under all circumstances, but also preserving the set of the axie at the same time, as set forth.

RULING Machina,—John Collman of Silver Creek, Ill.: I claim the case alternately sliding upon and secured to the bar as specified, in combination with the cam, lever, spring and stop, arranged and operating as described, for m.w.ng the box upon the transversing bar, any required distance, substantially for the purpose herein fully sectorth.

IMPROVEMENT IN STRAW CUTTERS.—William S. Dillehay, of the County of Shelby, Ky.: I claim the diagonal knife with two edges, in combination with the movable sc aper, with its proper appendages, and the manner of its movements parallel with the edges of the knife, thereby cleaning the gauge table of all the cut straw.

its movements parallel with the edges of the knife, thereby cleaning the gauge table of all the cut straw.

Method of Forming Platesfor Poly-Chromatic Printing.—John Donleyy, of New York City: I claim the method of producing intaglic graphic printing and other plates from forms of types by surrounding the types whilst in contact with a glass plate or its equivalent, with plaster of Paris or some equivalentherefor, so that when set, the surface of the plaster will be on the same plane with the surface of the types, and then stereotyping the form of types, thus surrounded substantially as and for the purpose specified.

I also claim the method of producing embossing plates by taking a cast, in plaster or its equivalent, from an intaglio graphic plate and then stereotyping such plaster cast, substantially as specified, thus producing a reverse duplicate in relief as set forth.

I also claim the method of producing what are called illuminace de printing plates for printing shaded intagliographic letters, characters, or figures, by producing an intaglio graphic plate in accordance with the first part of my invention, from a form of shaded types, and then removing the plaster from the form of types, substantially as described, so that after printing in intaglio with the intagliog graphic plates, the shadows can be printed either with the form of types, after the plaster has been removed, or with a stereotype taken therefrom as set torth.

iorth.

And finally I claim producing poly-chromatic printing plates from an intaglio graphic plate by taking a cast thereft om in relief, substantially as described, and from such relief obtaining what I term a stencil plate or plates, from which the plate or plates is or are obtained, to nave the letters, characters, or figures in whole or in part in duplicate of the intaglio graphic letters, &c., and in relief substantially as described, so as to register therewith as described.

IMPROVEMENT IN STEAM BOILER FURNACES.—By F. P. Dimpfel, of Philadelphia, Pa.: 1 do not claim lining the IMPROVEMENT IN SYEAR BOILER FURNAUSS.—By F. F. Dimpiel, of rhiladelphis, Pa.: 1 do not claim lining the fire box with water tubes, nor making the tubes of water linings separately detachable, but I claim forming the wails or sides of the furnaces of steam boilers of a series of water tubes extending above and below the grate, and spen to water spaces above and below, said spaces being so connected with each other or with the body of the water in the boiler as to allow free circulation in the manner and for the purposes set forth.

the mannerandfor the purposes set forth.

IMPROVEMENT IN QUARTZ CRUSHING MACHINES.—By J. Hamiton, of New York City: I do not claim the cylindrical pestle or roller in itself, as it has been used on a flat surface, and I am also aware that the cylindrical pestle has been used in a concave dish or basin, but in this case, so far as the rolling motion is concerned, the same operates similarly to the ordinary rolers in oil mills, of the pestle causing the same to slip on the inclined part and rub the ore, whereas in my machine the ore is first cracked by the grooved upper surface of the pestle, which I am not aware has ever been before used, and the grinding is performed by a pestle set on a shart, and having a payual rotary motion, which grings the ore against the sides of the basin, without having any rolling motion at all.

homeons described for cracking and grind A CHAIM THE MEANS SESCRIBED for CRACKING and grind-ing metallic ores consisting of the cylindric al pestle pro-vided with grooves in its upper part to crack the lumps of ere, and set on a shaft, on which it has a partial rota-ry metion, and operating in connection with the basin in which said pestle moves to grind the ore into powder by the gradual approach of the sides of said basin to the cylindrical pestle, said postle being also provided with a scraper or agitator, its lower surface to operate asspe-cified.

HANGING AND OPERATING SAW GATES—By M. W. Helton, of Bloomington, Ind.: I claim the driving of the pairs of saw gates, the saws of which operate in the same log by means of a bit urcated pitman hinged to the rocking cross heart by ing cross beam by its two arms, and connected by a wrist upon its other end with the crankof the driving shaft, by, which means a conical gyratory motion is imparted to the pilman, as described.

Turkers—By G.D. Miller, of New Berlin. Pa.: I claim the combination of the notched segment of a cylinder with two egress passages, for regulating and changing the direction of the blast, as set forth, when the appa-ratus is constructed with the additional passage. D-

f SCREW BOLTS AND NUTS-By Lucius Page, of Cavendish, Vt.: 1 claim forming the helical thread of a right-handed screwwith notches or teeth, as specified, in combination with applying to its screw nut a dog catch or spring pawl to operate in the said teeth or notch, and

prevent back rotation of the nut on the screw, as set forth.

I also claim the improvement of so applying the catch lever, or dog, or catch, to the nut, that it may project beyond one prismatic side of the nut, so that when a wrench is applied to such side of the nut and its opposite side, it may press inwards the dog or catch or lever thereof, or so act upon the same as to throw such dog or catch out of engagement with the teeth or notches of the right-hand screw so as to allow the nut to be unscrewed from the same, as specified.

from the same, as specified.

CUTING IRERGULAR FORMS—By Jonathan Russell, of Philadelphia, Pa.: I claim so combining the spur wheel on the mandrel, which directs thepattern and the spur wheels, for controling the rough material with the main wheel which moves or turns them, through their respective carriages, as that the carriage which carries the pattern may have an uniform or differential and receding longitudinal motion relatively with regard to the carriage for carrying the rough material for the purpose of cutting to the same to a greater or less size than the pattern, as described.

I also claim hanging the tracers in independent frames within the frames which carry the cutters, so as to allow the cutters to bring the rough material to the same, a greater or less size than the pattern in its transverse diameter, as described.

I also claim giving to the pattern and rough material a half or less than a half revolution at each traversing motion of their respective carriages, for the purpose of cutting or reducing in longitudinal sections, without revolving the pattern or rough material, as described.

Floor Plates of Malt Kilns—By Mathew Stewart, of

FLOOR PLATES OF MALT KILDS—By Mathew Stewart, Philadelphia, Pa.: 1 do not claim the use of perforat

Philadelphia, Fa. 1 do not claim the use of perforated sheet or plate iron in the construction ofmalt kin floors. But I claim, first, the characteristic mode in which I construct the plates with downward edges at right angles with the surface of the plate, as described. Second, I claim the bearing and combining block with the peculiar arrangement of the slots or grooves, or its equivalent, as described. Third, I claim the combination of the plates with the bearing and combining blocks, or its equivalent, and the peculiar manner of securing the plates and blocks down to the wrought-iron bars by means of the wire holes in the vertical edges of the plates or their equivalents, for the purpose described.

Hot-Air Registers—By E. A. Tuttle, of Williamsburgh, N. Y.: I do not claim the rack and pinion movement or the crown wheel and segments; but I claim the improvement upon said William Turton's Patent Register which consists in the improved method of maintaining the connecting rod in its proper position, as described, namely, at the bottom by a prong or prongs of the rod inserted into and working in cast raised openings on the fans or valves, and at the top by a solt or otherwise in the register front together with the slide plate, by which arrangement the register is greatly simplified and cheapened in its cost.

MACHINE FOR STICKING PINS.—J. B. Terry of Hartford Conn.: I claim the circular guard and circular slide in combination with the wheel and spring, or its equivalent whereby the pins are brought from the conductor and dropped at the required place as described and shown."

Lowering, Raising and Fastening Carriage Tops.—By Z. S. Ogden, of Glenn's Falls, N. Y. (assigner to L. C. Ogden): I claim the application of the lever, the shafts, eccentric circles, hooks, and the two belts, to lower, raise, and fasten carriage tops, with stationary bows, as herein before described."

lower, raise, and fasten carriage tops, with stationary bows, as herein before described."

BANDING PULLIES FOR SAWS.—ByD. H. Chamberlain of Boston, Mass. (assignor to himself and Nehemiah Huntidon in the combination of three pulleys, (viz. a friving pulley, and two others) and an endless belt. For the application and arrangement of such, wherein the belt runs against, or on the periphery of the driving pulley, and is strained between the two pulleys, and pinched between them and the driving pulley or or wheel, and is strained between the two pulleys, and pinched between them and the driving pulley or rollers is placed, between, and in contact with the peripheries of the driving and other driven pulleys while the endless belt is made to play around the two external pulleys. Whereby the axles or journals of the driving and driven pulleys are relieved from friction caused by the contractile power or strain of the band, such strain being borne by the pullies.

I claim the improved arrangement of pullies and endless belt, whereby the driven pulley, the same consisting in placing the peripheries of the two lesser pulleys in contact with the peripheries of the two lesser pulleys in contact with the periphery of the driving wheel and so as to extend beyond the side thereof, and runnir, g the enaless belt around the extensions of the said two pulleys, and down by the side of the driving wheel, and without any pressure or contact with its periphery, as specified.

I also claim the combination of two endless belts (arranged on opposite sides of the driving wheel) with the bearing and belt pulleys, or their caulvalents; and the driving wheel as made to operate together as described, the same enabling me to relieve the bearings of the hafts of the several pulleys from the contractile strain

he same enabling me to relieve the bearings of the hafts of the several pulleys from the contractile strain

f the belts.

I also claim the improvement of arranging two or once endless belts on one side of the driving wheel and to tonly running all of the said belts around one shaft or drum, (or the equivalent) supported on the periphey of the driving wheel, but respectively around other before the provident and the periphey of the driving wheel, but respectively around other before the provident account of the driving wheel and the driving wheel and the driving wheel the driving wheel and the driving wheel the dr afts or drums, or equivalents arranged and supported the opposite portion of the periphery as specified.

BOOKEINDERS BOARDS.—By J. H. Longbotham of Brook-yn N. Y.: I claim the use of thedriving box or chamber lyn N. Y.: I claim the use of the driving box or chamber endless belts for carrying the paper boards. Coil of pipes arranged therein, in combination with a blower and case, having a series of coils of pipestherein for rarifying currents of air for drying book binder's boards, and other substances as set forth.

CORN SHELLERS—By G. A. Xander of Hamburg, Pa.: I claim the improvement on the cylinder disc, that is its oval shape, the spring being attached to the side all as set forth.

set forth.

I would further state that by riveting two half cylinders together, the cylinder may as readily be constructed double as in fig. No. 2. A, and should I find it more practicable to construct them as in fig. 2. A, I therefore do not limit my claim, merely to the single, but also the double cylinder.

MACRINES FOR CASTING TYPE.—By C. Muller of New York City.: I claim, first, suspending the mould below its axis of oscillation, as described, whereby its tendency towards its centre of gravity, will act in opposition to the momentum required in its movement towards and from the mould and its movement and degree of opening are enabled to be reduced, producing the results set forth. Second the combination of the cam lever I red I.

set forth.

Second, the combination of the cam, lever, I, rod, I, lever K, and rod L. arranged as shown, for the purpose of opening and closing the mould.

Third, thiring the matrix by means of the lever attached to the oscillating mould arm, combined as described with the lever, M, which receives an oscillating motion from the arm or lever by which the oscillating motion is given the shaft or axis upon which the mould oscillates.

BEDSTEAD FASTENINGS.—By W.H. Price of Philadelphia Pa.: I claim the arrangement of the tenon, mortise, and wedge in such a manner, that the wedge will begin to act before the tenon is inserted in the mortise, and draw it gradually into said mortise so as to completely close it when the fastening becomesfirm, for the purpose of excluding vermin, &c., as set forth.

MACHINES FOR POLISHING LEATHER.—By P.P. Tapley of Lynn, Mass.: I claim the described combination and arrangement of the crank wheel the connecting rod K, the swing bar, the lever, and the connecting rod G and also the improvement of making the connecting rod, P in two parts jointed together, and to operate as speci-fied, whereby the contact of the dicing or polishing ball r surface with the leather is prolonged under circum tances as stated.

Stances as stated.

Guitars.—By W. B. Tilton of New York City: I do not claim extending the strings from the foot to the head of the libstrument; but claim depressing the strings of guitars slightly below the bridge, by passing them through perforations in the ordinary pins or pegs, or by any means substantially the same: when the strings are fastened at the foot of the instrument, for causing the bridge to act as a fulcrum in producing the tension of the strings, and so relieving the sound board as to give the instrument a richer, fuller, and a more complete tone as set forth.

TURNING THE LEAVES OF BOOKS .- By C. Desbeaux of in it.

Paris France.: I do not confine myself to the dimension mentioned, but reserve to myself the construction of the apparatus of any material and of any dimensions the apparatus of any material and of any dimensions; the placing of the pulleys vertically or horizontally; I may find it desirable to make the boxes of the "turn pages" of wood or of metal according to the circumstance, to cover or not to cover them with cloth or leather, to use wood or metal in the construction of the stands to produce the lengthening or shortening by means of rack gearing or of levers to change the relative proportions of the pieces if necessary, to make the stamps or discs of polished or damaskined metal, in conclusion to modify the details of construction or such limits which do not change the nature of my invention of the "Magnetic turn page" as herin set forth.

[There is certainly no claim here and there may be ome mistake in reference to the matter.l

Power Looms.—By John Shuttleworth, of Frankfort, Pa.: I claim first, the connecting rod and lever in combination with the reciprocating frame, for the purpose of giving a reciprocating motion and a rocking motion to the shaft.

Second, I claim the rockingshaft, arm F, the vibrating lever and arms B and T, in combination with the reciprocating frame for the purpose of giving an intermit.

Second, I claim the rockingsnatt, arm F, the viorating lever and arms B and T, in combination with the reciprocating frame for the purpose of giving an intermittent rotary motion to the wheel and discs.

Third, I claim the discs constructed as described, in combination with the horizontal sliding stops, for the purpose of forcing out and drawing in said stops in the manner described, and also for the purpose of operating the picker bar as described.

the picker bar as described.

CUTTING SCREWS IN LATHES.—By Joseph Nason, of New York City: I claim, first, the mode of constructing and combining the stud, the tube, and the guide screws, by which guide screws of the various patterns used in screw cutting may be put on or taken off expeditiously.

Second, the mode of constructing the tool bearer generally, particularly as regards placing the slide rest behind the work, whereby the cutting tool is brought into such relative position with the shart and mandrel that the operation of raising the tool bearer from the rail removes the tool from the work.

Third, the tool lifter constructed as described.

Fourth, the combination of the guide screw, the

Fourth, the combination of the guide screw, the threaded block, and the tool bearer with the shaft as set forth, by which therequisite traversing motion is imparted to the cutting tool. The operation of releasing the block from the guide serew and removing the tool from the work are simultaneously performed, and the tool bearer may be turned back out of the way when not in

HAY AND MANURE FORKS.—By Reuben M. Hines, of Mentz, N. Y., (assignor to Horace C. Silsby, of Senaca Falls, and Reuben M. Hines, of Mentz. N. Y.): I claim the fork with the upper part of its prongs and its tang constructed as described, in combination; with the ferrule, the sockets, and slot as described.

MACHINES FOR STICKING PINS—By Thomas W. Harvey, of New York City, (assignor to John B. Terry, of Hart ford, Conn.): I claim allowing one pin at a time to pass down the conductors by means of a vibrating slide or its equivalent, so as to supply the row of pins at a time by the conductors to the forceps as specified.

HERMING AND CORDING UMBRILLA COVERS.—By Sherburn C. Blodgett, of Philadelphia, Pa., ante-dated July 3, 1853: I claim the guide for cording or hemming numbreila covers arranged upon a stand with a curved slot to fold the hem around the cord, and a hole through which the cord is passed to its place, and this I claim whether the guide be used alone or attached to a sewing machine.

REGULATING FIE DAMER OF STEAM BOLERS.—By Patrick Clark, of Rahway, N. J.: I do not claim operating the damper of a steam besier fire by means of the pressure of the steam in a boiler. Nor to have invented the diaphragm, nor its use to avoid friction where fluid pressure is used to produce motion, out I claim the combination of a cylindreal olaphragm with a cylinder and piston as described, for the purpose of operating the damper of a boiler fire by means of the pressure of the steam.

[We are unable to publish all the claims this week or account of the late hour at which they were received and their extreme length. The remainder will appear next week.

Recent Foreign Inventions.

TANNING-Stephen Garrett, of Surrey, Eng., patentee. The skins or hides are secured on a frame, which is made to be raised and lowered in the tan vats. This mechanical action is kept up until the hides or skins are fully tanned.

BOOTS AND SHOES-J. Jaques Jamin, of Lon don, patentee. The improvement is on clogsshoes with wooden soles. The improvement consists in making grooves along the edge of the sole, and securing the upper leather in the said grooves. This kind of shoes is not used in America, but is very common in England. The peasantry of Lancashire, generally, wear clogs; they are very warm for the feet, the wood being a good non-conductor. In our severe winters, especially when the roads are so slippery under foot, it would be very difficult to walk with them, because the soles are not elastic. Were it not for this defect, we would recommend their use.

MAKING MANURE-E. T. Simpson, of Wakefield, York, Eng. This method of making manure, consists in taking woolen rags, shoddy, and other waste products of wool, and dissolving them with an acid, such as nitric, exposed to artificial heat, and then combining the fluid so obtained with bones, coprolites, or animal charcoal.

ROASTING COFFEE, &c.-George Berry, of London, patentee. This inventor places his coffee beans, or cocoa, &c., for roasting, in a vessel, from which he extracts all the air, and during the roasting process he also draws off all the steam by an air pump. By this method he says he retains all the aromatic products in the beans, &c.

TREATING FLAX-C. J. Pownall, of Addison Road, Middlesex, Eng., patentee. This inventor takes flax, while wet and swollen, by steeping and fermentation, and subjects it to the action of water falling from a hight of 6 feet and upwards, for the purpose of more effectually washing away the gummy and glutinous matters

GRATES AND STOVES-J. L. Stevens, of London, patentee. The improvement consists in the admission of currents of hot air behind the back plates of the stove or grate, above or about the level of the fire, such currents of air being made to pass through channels formed underneath or at the sides of the fire, and partly heated thereby and partly by the back plate of the stove or grate. The object of this invention is to improve the combustion of the fuel, and to reduce the quantity of smoke given off, either by the use of wood or bituminous coal. Those who think there are no improvements to be made on our stoves, are greatly mistaken. Indefinite complexity more than simple utility, prevails in all our stoves.

Extracting Juice from Sugar Cane-J. T. Manifold, C. S. Lowndes, and J. Jordan, of Liverpool, patentees. The patent obtained is simply for reducing the cane into very minute pieces, then subjecting these pieces to the action of steam in close vessels, and after this pressing out the juice in a hydrostatic press. The sugar cane is reduced to fine pieces, like dye-wood chips, by a serie's of circular saws. This is certainly, so far as we are aware, a very novel mode of treating sugar cane. The reduced canes, when steamed, can be placed in bags and easily subjected to hydrostatic pressure, but what effect the steaming may have upon the sugar (its quality) so obtained, we are unable to say. The subject is at least worthy the attention of our sugar planters.

STEAM BOILERS-C. Cowper, Kensington, Middlesex, Eng., patentee. The boiler is made of an assemblage of tapering cells connected by pipes with valves so arranged that in the bursting of a cell it can be immediately shut off from the rest of the boiler by closing the valve by hand, or by the pressure of the steam.

NEW METHOD OF OBTAINING MOTIVE POW-ER-E. J. Shollick, of Viverstone, Eng., patentee. This new invention consists in obtaining nowerful electric currents from a magneto-electric machine, and applying those currents to decompose water into its elementary gases-hydrogen and oxygen—then admitting them into a cylinder behind a piston, passing an electric spark through them and thus exploding them -resolving them into water again, and thus give motion to the piston, which is to work like that of a steam engine, and move machinery in the same manner. This inventor is stated to be an Esquire; this may be, but he is not acquainted with the laws of physics. Leaving out friction in the working pasts of this machine -he can obtain no more power by the explosion of the gases of water than the power expended to resolve the water into its elementary gases; this is the law in physics, and no combination of machinery can alter it.

PRINTING COLORS ON TEXTILE FABRICS-F. A. Gatty, of Accrington, Lancaster, Eng., patentee. Milk of lime is about 1.10 specific gravity, is saturated with a stream of chlorine gas, whereby a solution containing chloride of calcium is obtained: 600 lbs. of alum are then dissolved in 200 gallons of water, and to this 100 gallons of the above chloride mixture is added, forming thereby chlorate and hydrochlorate of alumina in solution, and the sulphate of lime as a precipitate. The latter is separated by filtration or decantation. This solution is employed as an improved mordant, and is used in the ordinary manner in the preparation of colors. This may be a useful mordant for bark greens-as a substitute for aluminous pyroligneous acid; also in place of the common red liquor, and it may be a good mordant for madder colors, in place of the common mordant, which is made by mixing a solution of soda or the acetate of lead with alum.

IMPROVEMENT IN LOOMS FOR WEAVING .-Robert Boyd, of Paisley, Scotland, patentee. This improvement consists in having an airtight cylinder (in which there is a piston) by the compression and exhaustion of which the shuttle is moved across the raceway of the lathe.

Le Verrier, the astronomer, in a paper which ne recently read before the Paris Academy of Sciences, suggests that we may expect the discovery of a prodigious number of small planets.