

Scientific American.

NEW YORK, MAY 12, 1855.

Education in New York City.

We have before us the recently printed report (being the 13th) for 1854 of the Board of Education. From it we learn that there are 262 schools within the jurisdiction of the Board, with an average attendance, exclusive of the evening, normal schools, and Free Academy, of 45,390 pupils; the total, including these schools, being 51,567, or about 197 to each school. There are 146,450 pupils' names on the report, or two-thirds more than the average attendance, a statement which greatly surprises us. The amount of money expended for the purposes of education during the year, amounted to \$776,973, averaging more than fifteen dollars for each of the 51,567 scholars. The *United States Gazette*, Philadelphia, claims for that city a larger number of pupils (52,073,) with as complete a system of education, for only \$456,719, or \$8.79 for each pupil—only a little over one-half that of New York. This shows that the New York Board of Education is behind Philadelphia in economical management.

There can be no doubt but New York pays very liberally for the education of her children, and we might reasonably expect the young and rising generation to be the most soundly educated in the world. We have no such hopes, however, and no such expectations because it appears to us that the system of teaching is wrong. The Board of Education, with perhaps a laudable ambition to teach the young a little of everything, have adopted a system which ends by teaching them nothing. The pupils of New York are furnished with such an abundance of books, that their tendency is to confuse, not educate. There is an effort made to cram a monstrous diversity of knowledge into the minds of the children, which results in cramming out what was learned yesterday, by what has to be crammed in to-day. Thus a girl of ten years of age has as many books to study as would load a pack horse. She studies arithmetic, history, grammar, astronomy, natural history, philosophy, mineralogy, geology, chemistry, and physiology—ten different studies. And the Board speaks in flaunting terms of this system; why, it is a plaster on common sense. We have witnessed with much pain the efforts of children in committing long lessons in geography, physiology, chemistry, history, &c., to memory, all of which were forgotten in a few days, because it was mentally impossible to retain them. Cut down the studies of such from ten to four books, and we will have more soundly educated children. They will not grow up as they are now doing—superficial in everything.

Enforcing the New Steamboat Law.

We have before us two reports of the Inspectors under the New Steamboat Law,—the one from the District of St. Louis, the other from that of New York. The Report of the Inspectors of St. Louis, Mo., James H. McCord and H. Singleton, relates to the collapsing of both flues of the middle boiler of the steamer *Reindeer* on the 7th April, 12 miles above St. Louis. By this accident three firemen were so severely scalded that two of them have since died. The Inspectors exonerate the engineer, the captain, and all the officers, of blame, and assert that the accident was caused by defective flues. These had been examined by the Inspectors of the Louisville District, in 1854, and a certificate given that they were one quarter of an inch in thickness, whereas, they were found to be a little less than three-sixteenths of an inch. As the boiler had been afterwards examined by the St. Louis Inspectors, we think that those of Louisville will assert that when they gave their certificate, (8th April, 1854,) the flues were of the thickness represented on the certificate, and they may throw the blame on the St. Louis Inspectors.

The boilers of the *Reindeer* were five in number, 30 feet long and 40 inches in diameter,

with two return flues, 15½ inches in diameter. Messrs. McCord and Singleton have condemned the whole of them as being dangerous, and have ordered new and improved ones to be substituted. They condemn the 15½ inch flues as dangerous in boilers of such a diameter, and have certainly in this case ordered a sure remedy.

The other Report, that of John M. Weeks and Henry B. Renwick, Local Inspectors of this port, relates to the limited suspension of the license of John I. Low, fifth class engineer, for negligence in permitting the water in the boiler of the steamboat *Splendid* to fall below the water line on two occasions. Charges were preferred against the engineer for neglect, and this is the result. The suspension took place on the 1st inst., and will continue four months. On none of these occasions did the water fall lower than three inches above the flues, but negligence was shown, and our Inspectors know that they cannot allow the law to be trifled with. It gives us great pleasure to know that we have so many faithful men to enforce the New Steamboat Law.

It would have afforded us sincere satisfaction had our Legislature passed a law during its last session, providing for Inspectors of all steam boilers, stationary and locomotive, in the State. Every State in our country should have such an Inspection. It would be the means of preventing many sad catastrophes. Two weeks ago, a boiler in Geer's foundry, Troy, N. Y., weighing 6 500 lbs., exploded, passing up through the roof, to a height of 75 feet, smashing everything in its way, and landed more than a hundred feet from where it started. Sixty men and boys were employed in the foundry at the time, and by good fortune only two were injured—none killed. The explosion was no doubt caused by an over-pressure of steam; the wonder is that so few were hurt.

The Boston Steam Fire Engine.

A fire took place in Boston on the 29th ult., by which \$1,000,090 worth of property was consumed, including two fire engines; yet we have been informed that it never was attempted to bring the steam fire engine into operation. This engine, "Miles Greenwood," for which the city of Boston recently paid \$12,000, was suffered to stand idle during the fire, although it might have done a great deal to stop the conflagration. What is the matter with this Engine? Let us know the whole truth about it. It operated well on the trial in this city, and impressed many very favorably with its powers and utility.

The City of Boston, at one time purchased a number of "Fire Annihilators," one of which exploded prematurely when being carried to a fire, and thus sealed the fate of the others; they were sent to repose in a cellar, or some such place, and never attempted to be used. We are anxious to know something about the "Steam Fire Engine," because we have always taken an interest in fire engine matters, and heartily wish success to the working of such machines by steam, instead of severe manual labor, respecting which we know considerable from personal experience.

Navigation of the Hudson River.

It seems that Professor Renwick has been writing a series of articles to the *Albany Evening Journal* on the navigation of the Hudson River, in which he takes the ground that the driving of piles and the formation of docks at New York affects the depth of the channel and the velocity of the water as far up as Troy. The *Albany Knickerbocker*, in answer to this, says, "The Professor runs away with the idea that our water is growing less and less annually. This is not so. In front of this city, the water is as deep now and runs with as much velocity as it did fifty years ago. Opposite the pier, the water is sufficiently deep to accommodate half the ships that enter the port of New York. It is not a short supply of water which injures the navigation, but an over supply of sand bars. These bars are caused, not by driving fishpoles in the river opposite Hoboken, but by the neglect of the government and the washing away of the Greenbush bank. The

bars which formerly bothered us, have entirely disappeared. Among those which annoy us now are several just below the village of Greenbush, and one in the vicinity of "Nine Mile Tree." The former could be overcome by an outlay of ten thousand dollars, the latter by two months of common sense digging."

[The editor of the *Knickerbocker* is right, excepting in attributing all the blame of the obstructions to navigation near Albany, to government neglect. If the government has failed to do its duty—has been neglectful, the people of Albany have not exhibited good common sense in waiting and begging government for assistance. It would soon pay them with compound interest, to adopt means for the protection of the Greenbush bank. True, they have done something in this way, but how clumsy, and how inefficient. They should build a strong wall of groined arches along the whole Greenbush bank below the lower Ferry, and keep delving into the sand and mud banks continually. There can be no doubt but there is enough water in the driest seasons, in the Hudson at Albany, to float a seventy-four gun ship. No canal is wanted, as has been proposed, to make the ports of Albany and Troy navigable for vessels of a thousand tons burden. The chief engineers of the cities of Troy and Albany should be men of civil and mechanical qualifications, to engineer any work; and the condition of the Hudson in their respective districts, should be under their charge. If these two cities were to act upon this advice, we are confident it would tend greatly to their prosperity.

Presentation of a Plow.

We learn by the *Vincennes, Ind., Practical Farmer*, that a handsome plow was recently presented to the Hon. H. L. Ellsworth, ex-Commissioner of Patents, by T. E. Brinley, of Kentucky. From the speeches made on the occasion, we learn that this plow is quite a Don among the plows, having taken no less than thirty nine premiums.

Mr. Ellsworth in reply to W. Stringfield, who presented the plow, did not use any high-flown words on the occasion, but said it was a beautiful plow, and would afford him great pleasure to test it with a dynamometer, in order to determine its draught. The plow is made of steel, and has a polished mold-board, as cast and wrought-iron mold-boards are not suitable for plowing the soil of the Wabash Valley. It seems that Mr. Ellsworth has dispensed with the plowman so far as it relates to holding the stils. He said, "for years no one has held my plow, or dropped the corn. My plow beam obtains its steadiness by being attached to an axle, or two mole wheels; and a wheel of 18 inches diameter, made of 1½ inch board, having an artificial finger fastened at one side, that dips into a measure of corn at each revolution, deposits the seed, which is covered by the next furrow."

When he was in the Patent Office (he stated) he always advocated an Agricultural Department to protect and foster this important branch of national industry, "but politicians courted the farmers' votes during canvass, then forgot their promises as soon as they reached Washington." We agree with Mr. Ellsworth in this. There should be an Agricultural Department in Washington, and it should be sustained and supported liberally by our General Government, but our inventors should not be taxed to support it.

Consuming Smoke.

It would appear from a statement in the *London Illustrated News* that the new law in England to compel the consuming of smoke in furnaces, operates injuriously to the interests of many. The proprietors of the *News* state that the injection of jets of cold air above the coal, in their furnaces, involves a loss of 15 per cent, instead of being a saving, as had been predicted. They had tried a number of furnaces, all of which had failed to give satisfaction. We know that it is a mistaken notion, entertained by many, that very long boilers, and long tortuous flues save fuel, and it appears to us that the mixing of cold air with the hot gases, in order to

produce perfect combustion, is just as incorrect a notion. It cannot be denied, however, that all the fuel which passes off in a state of smoke is positive loss. "Can this be consumed to advantage?" is the grand question. We believe it can, but the air for mixing with it, should always be highly heated before hand. If the proprietors of the *Illustrated London News* would adopt means to heat the air before mixing it with the smoke of their furnaces, we have no doubt that, instead of a loss of 15 per cent. over the old methods, they will effect a saving equal to that amount.

Splendid Engines for the Cleveland Water Works.

On Thursday afternoon we experienced the pleasure of witnessing and examining the two new steam engines, pumps, boilers, &c., designed, and built by the Allaire Works, this city, for the City Water Works of Cleveland, Ohio. The engines—two in number—have cylinders 70 inches in diameter, and 10 feet stroke, with pumps 30 inches in diameter, and 8½ feet stroke. They are constructed on the Cornish plan, this being allowed to be the most economical for pumping engines in the world. They have received a very high finish, and taking them for all in all, we believe they are the best finished engines we have seen in our country. Each engine is a perfect duplicate of the other, in every part, to the smallest curve and the minutest line. The beams are huge masses of metal, each weighing about 30 tons. They do great credit to New York engineers, and especially those engaged in designing and constructing them. The city of Cleveland, in getting such engines, has exhibited a noble and enterprising spirit. They have far distanced the people of Chicago.

These engines are to be placed near the lake, from which they are to draw water and throw it to a considerable distance, into a reservoir, on an elevation of 170 feet, from which it will be led by gravitation across the river, and distributed to the city.

The boilers for these engines are six in number, on the Cornish plan—high pressure. They possess a large amount of heating surface. All the castings are very fine, and the greatest care, and the best of skill have been exercised to produce engines of which New York and Cleveland may well be proud.—The architecture of the machinery, and the drafting of all the details, deserve great praise.

The engine house will be constructed of brick work, with iron cornice window frames and sills, from designs of Mr. Snowden, the engineer of the Water Works.

The Steamship that was the "Ericson."

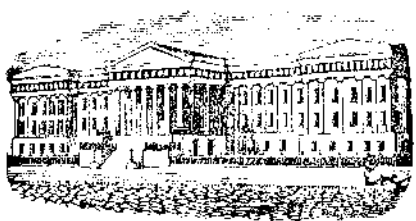
This ship—with her hot-air engines consigned to the tomb—made her first trial trip with her new steam engines, down the Bay, on Thursday afternoon last week. The *New York Times* says of it, "There was not so great or good time as when she made her hot-air trial trip." The *Tribune* says, "she returned to the city having made a very satisfactory trip."

And thus it is that those gentlemen who two years ago were so enthusiastic and eloquent respecting a project which proved an utter failure, and which sound scientific engineers very well knew would turn out so, have only a few words to say respecting the great invention which was, in their opinion, destined to revolutionize the world and to annihilate steam. Our Lieut. Governor Raymond, and Mr. Dana should certainly have been invited to make speeches on this occasion, in order to make public confession for the erroneous statements they made on their "hot air trip."

The hot-air engines being abandoned, we would think it creditable to those eminent men of science, who spoke so confidently of their success two years ago, to come out now before the public and confess their error.

Another Asteroid.

M. Le Verrier in a letter to Lieut. Maury, dated Paris, April 7th, announces the discovery of another asteroid, being the thirty-fourth of the system of small planets between Mars and Jupiter.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office,
FOR THE WEEK ENDING MAY 1, 1855.

PROJECTILES—W. J. Von Kammerhuber, of Washington City, D. C. : I claim the lens shape of the projectile, made of any desirable material or combination of materials, solid or hollow, as described, and which projectile is to be thrown by any exploding or expanding substance.

ARRANGING SHAFTS AND PULLEYS AT AN ANGLE—Abner Whiteley, of Springfield, Ohio : I do not claim communicating motion when the axes form an angle with each other by means of a cross-head or pin attached to one axis moving within grooves or slots attached to the parts of the other axis, or pulleys which are well known.

But I claim the described mode of arranging the bearings, consisting of the stud or projection from the bearing of one shaft, which stud is a bearing for the pulley, gear wheel, or coupling of the other revolving part, and through which the axis having the pin, passes, for the purpose of forming a secure and compact adjustment of the parts when the respective axes of motion have a fixed and invariable angle with each other.

LUBRICATOR—R. M. Wade, of Wadesville, Va. : I make no claim to the direct or indirect passage of the lubricator when opening the other, by arrangement of valve perforations, as set forth.

But I claim constructing the moving parts of a central sectional spindle, with disk valves at its extremities, susceptible of steam-tight adjustment, as described, and combining the same with the perforated diaphragm, a, the oil reservoir for preventing external leakage, and otherwise acting, as set forth.

Also the sectional rim, P, and spring, S, in combination with the arrangement of the valve apertures relative to the ends of said rim, so as to furnish three stopping points to the actuating lever, for feed, discharge, and the entire closing of the lubricator when operating, as set forth.

SELF-LOADING AND UNLOADING CARTS—J. Wilkinson, of Hopewell Cotton Works P. O., Pa. : I claim in self-loading and unloading carts, the combination arrangement in one vehicle of several series of small scoops or scrapers, and their respective carrying boxes, so that each of the series can be loaded in succession, independently of the others, while the vehicle is in motion, thus, owing to the slowness from front to rear of the scoops to be forced into the substance with which the cart is to be loaded, and the smallness of the quantity to be taken up by each, avoiding the necessity of employing a powerful team, or of hitching on an extra team, while the vehicle is being loaded, as is usually the case in taking up a sufficient load for an ordinary team in a cart having but one large scoop; and so that when the vehicle is removed to the place where the load is to be deposited, all the boxes in the series can be dumped or unloaded simultaneously without stopping the team, and leave the contents spread out in a layer of uniform or nearly uniform depth, the whole being constructed and operated in the manner and for the purposes set forth, or in any other manner substantially equivalent thereto.

I also claim the manner of operating the scoop and boxes, by means of levers connected to them by two rods, or their equivalents, to each lever, the one attached to the box being connected with the lever nearer its fulcrum than the one attached to the scoop, so that operating the lever will move the scoop through a greater space than it does the box, thus enabling the scoop to be depressed a sufficient distance to take up its portion of the load, and then elevated so as to constitute the front of the carrying box, while at the same time the box is elevated by the rod attached to the lever nearest its fulcrum a sufficient distance to be clear of the surface over which the vehicle is to be conveyed, substantially as set forth.

I also claim the manner of attaching the scoop boxes to the adjustable frame, and the adjustable frame to the fixed frame, by means of sliding bars or rods, or their mechanical equivalents, so constructed and arranged that the scoops and boxes are capable of a vertical, but not of a horizontal motion, except as the whole vehicle is moved, thus enabling the scoop, while being lowered to be held at any desired depth against the substance to be taken up by them, substantially as specified.

REGULATING THE DISCHARGE OF EXHAUST STEAM IN LOCOMOTIVES—John E. Croxon, of Philadelphia, Pa. : I claim the arrangement of the piston, E, within the cylinder, D, in communication with the steam or water space of the boiler, and with the exhaust chamber C in relation to the spring, n, rods, and levers, and beams, h, k, l, m, and valve, c, operating as and for the purposes set forth.

POLISHING LEATHER AND MOROCCO—Nathan Ames, of Saugus, Mass. (assignor to Samuel Green, of Lynn, Mass.) : I claim the described method of raising the figuring or polishing tool, R, while passing back over the table, T, I, e. e., by making the tool holding hand, in effect a fixed part of the connecting arm, F, constructed and combined substantially as described, so that the machine partaking of the nature both of a reciprocal and rotary motion, may operate without joint, noise, or friction, as easily and silently as a wheel revolving on its axle, and as rapidly as may be desired, and at the same time moving in a uniform elliptical orbit over the table without touching it.

FURNACE FOR BURNING BAGASSE—Elizabeth A. Stillman, of New York City, administratrix of Alfred Stillman, deceased : What is claimed as the invention of the said Alfred Stillman, is the described furnace for employing bagasse, without previous drying, as fuel for generating steam.

BORING FRANCE POSTS—James Temple, of Birmingham, Pa. (assignor to Israel Ward and James Temple) : I claim the supporting of the long pinion, and the auger shanks, in the adjustable pillar blocks, such as described, so that the augers may be set to bore holes at variable distances apart, whilst the spur wheels on their shanks shall still keep in gear with the long pinion, as described.

SAWING FIRE WOOD, ETC.—E. A. Tabbs, of Hampton, N. H. (assignor to E. A. Tabbs & H. T. Croxon, of Rochester, N. H.) : First, I claim the method substantially as described, of bringing the saw into operation by the pressure of the log upon the stop, Z, as set forth.

Second, I claim the method, substantially as described, of causing the weight of the saw, after it has passed through the log to bring into operation the mechanism which raises it out of the way preparatory to making another feed.

Third, I claim the method described, of operating the clamp, C, by means of the spring bar, D, whereby the clamp is rendered capable of holding logs of varying thicknesses, without constant re-adjustment, as set forth.

Fourth, I claim the device described, for the purpose of stopping and starting the feed at the required moment, consisting essentially of the combination of the shaft, O, the lever, F, the wheel, N, and the spring finger, Q, constructed and operating in the manner substantially as set forth.

TICKET REGISTER FOR RAILROAD CARS—William Apperly, of Louisville, Ky. : I claim, first, the described improvement for distributing and registering railroad and other tickets, consisting in the combination and arrangement of the slide, e, d, spring, D, and registering device, M I J K L M, or its equivalent, substantially as set forth.

Second, I claim providing the extension, E, and inclined way, E', substantially as and for the purpose set forth.

[This is a useful invention for railroad companies, and a description of it may be found on another page.]

FIRE ENGINE—John R. Adams, of Port Jervis, N. Y. : I claim having the cylinders, B, placed radially in a band or ring, A, and encompassing said band or ring, A, with a band or ring, I, and cam, J, the band or ring, I, and cam, J, being allowed to rotate around the band or ring, A, and cylinder, B, and operating the pistons of the cylinders, in consequence of their connection with the cam, as shown and described.

[A brief description of this improvement in fire engines may be found on another page.]

BULLET MOLD—William Ashton, of Middletown, Conn. :

I claim constructing the mold, as shown and described, viz., having a conical aperture, a, made in a piece of metal, and having a projection or cone, E and flanch, d, attached to a metal strip J, which is secured to the shank or handle, C, of the mold by a pivot, c, so that said projection or cone may be inserted in and withdrawn from the aperture, a, as shown and described.

[It is a singular fact that in time of war, inventions in ordnance—fire arms, projectiles, and even bullet molds, are multiplied to a wonderful extent. Our weekly list of patents bear testimony to this. See notice of this invention on another page.]

CLOTHES-PIN MACHINE—H. and M. Blake, of Hartland, Vt. : We do not claim the holding cylinder, D, irrespective of its construction and arrangement, and the manner in which it operates in connection with the saw, B, as shown. Neither do we claim the saw, B, separately, nor the cutters, K, K, for they have been used for analogous purposes.

But we claim, first, the employment or use of the holding cylinder, D, and circular saw, B, when both are hung on permanent shafts, and operating as shown, so that the cylinder rotates with a comparatively slow motion compared with the saw, and conveys by a continuous rotary motion the clothes-pins over against the saw, for the purpose of forming the grooves or slots therein.

Second, we claim securing the clothes-pins in the holders, E, of the cylinder, D, by means of the clamps, F, secured to the periphery of the cylinder, D, as shown, and operated by the rim or ledge, m, and flanch, as shown, so that the clothes-pins will be firmly clutched in the holders, E, while being operated upon by the saw, B, and cutters, K, K, and allowed to fall therefrom when the grooves or slots are finished.

Third, we claim the combination of the cylinder, D, saw, B, and cutters, K, K, constructed, arranged, and operating as shown and described.

[This novel invention we hope to illustrate in our columns in a few weeks. In the meantime our readers must be content with the brief description to be found on another page.]

WHEELRIGHTS' BORING AND TENONING MACHINE—Chauncey Cowdry, Orrin Tolls, and C. C. Tolls, of Ithaca, N. Y. : We claim, first, the combination and arrangement of the frame, R, with the scale of graduated and sliding tubes, T, and screw, U, as described.

Second, the combination of the hinged support, B2, with the sliding screw clamp, C3, substantially as described.

Third, we claim the combined arrangement of the several parts, substantially as described and set forth.

PROCESSES FOR PURIFYING AND CLEANSING WHEAT—Charles Campbell, of California : I do not claim the smut mill, or improvement thereon, or any new chemical quality of lime, but the preparation of lime for this particular purpose, and the application of it to wheat, when newly sown and warm, so that it will effectively cleanse the wheat from all impurities, than by any other process.

MACHINE FOR BUNDLING FLEECES OF WOOL—John How, of Beer Creek, Mich. : I claim, in combination with the packing box, B, a adjustable strap, k, with the drawing, s, the levers, g and p, for pressing the bale, and turning-bing in a convenient position for the operator, the strings or cords, by which the pressed fleeces are baled up, substantially as described.

APPLYING ECCENTRIC WHEEL TO WATER POWER—J. B. Hart, of Nottoway Co., Va. : I claim the water wheel without arms or main shaft, revolving on fulcrum wheels underneath, thereby lengthening out the lever power near the whole diameter of the wheel, the thin and thick interstices shouldered and bolted to each rim, the cast segments bolted to the middle rim, which gears into the cog of the wellower on the horizontal shaft extending across on the inside of the water wheel, also the two revolving fulcrum wheels with flanges on the outside of each wheel, to keep the water wheel in its true position.

SHUTTLES FOR LOOMS—Laroy Litchfield, of Southbridge, Mass. : I claim the backward extension of the heel, c, of the spindle, as described, combined with the application of the spring, d, above the said heel, and above and in rear of the spindle, b, on which the spindle moves in such a manner as to hold the spindle in its operative position, by throwing its heel upwards against a proper fixed bearing, substantially as described.

[A brief description of this invention may be found on another page.]

SHUTTLES FOR LOOMS—Ezra P. Marble, of New Worcester, Mass. : I claim attaching the catch, C, which confines the bobbin or cop on the spindle to a pin, e, which works perpendicularly through the spindle, and is acted upon for the purpose of throwing and holding the catch in operation, by a spiral spring, g, or its equivalent, and acted upon for the purpose of throwing the catch out of operation by coming in contact as the spindle is raised with a plate, D, or other fixed stop, the whole operating substantially as and for the purpose set forth.

[A short description of this shuttle may also be found in this week's Sci. Am.]

HORSE POWERS—Clement Russell, of Massillon, Ohio : I do not claim having the axis of the main driving wheel of double geared horse powers movable, as this is common.

But I claim providing a broad solid flanged box or center, C, for the axis, A, to rest in, when said box is made in two parts, D D', and fitted and confined by the axis itself, and flanges, a, a, in an oblique slot, E, formed in a bridge, F, as constructed and arranged in the manner and for the purpose set forth.

[The subject of horse powers interests a great number of our readers, and even small improvements in that line are of much consequence, so vast are the numbers used. A description of this improvement may be found on another page.]

CORN PLANTERS—Presley Raines, of London, Ohio : I claim the combination of elevator, sliding platform, and flaring plunger, substantially as described, operated simultaneously by the elevation and depression of the guiding handles.

ALARM ATTACHMENT FOR DOOR LOCKS—John Schneider, of Rochester, N. Y. : I claim the employment or use of the barrel, B, hammer, C, with plate, b, attached spring, D, and tumbler, E, when arranged as shown and for the purpose as set forth.

[This is a useful attachment for door locks, but cannot be properly explained without engravings.]

WINDOW SASH SUPPORTER—David Russell, of Drewersburg, Ind. : I do not claim operating the stop fasteners by means of spiral springs, as the same function might be performed either by elliptic springs, or weights and pulleys.

But I claim, first, the curved form of the stop fasteners constructed in the manner and for the purpose as described.

Second, I claim the off-set, f, in combination with the fasteners for accomplishment of the object, as described.

MAKING PAPER BAGS AND ENVELOPES—John A. Smith, of Clinton, Mass., and S. E. Pettie, of Foxborough, Mass. : We do not claim the exact form or arrangement of any of the parts, but only the following points.

First, we claim the bar, K, to relieve the end of the under sheet of the weight of the pile, partially or wholly.

Second, the friction bar, I, to separate the under sheet.

Third, the guide bar, L, in connection with bar I, to hold the sheet in place for the jaws.

Fourth, the lifter, M, to relieve the sheet from the weight of the pile.

Fifth, the feeding from the bottom of the pile.

Sixth, the combination of the weight bar, friction bar, guide bar, and lifter, constituting a feeding apparatus.

Seventh, the jaws to place the paper in position.

Eighth, the former, A, to fold the paper over or around.

Ninth, the pasters and folders.

Tenth, the combination of the table, the bar, B, the side folders, and pasters, all constructed as set forth, or any other substantially the same.

BENCH PLANE STOCK—G. E. Davis, of Lowell, Mass. : I claim the metal plane stock's having a formation of lip I, in the back part of its throat, so as to fill the recess which would otherwise be below the level of the cutting irons so as to present a continuous smooth surface to the plane, excepting the edge of the cutting irons, and throat forward of them, for the outward passage of the shavings, essentially in the manner and for the purposes set forth.

ALLOYS FOR JOURNAL BOXES—Thomas Firth, of Cincinnati, Ohio : I claim a composition of matter, of copper and zinc, in the proportions of seven and one half parts of copper, to ninety two and a half parts of zinc, or any other mixture substantially the same, and which will produce the intended effect.

SAWING OFF PILES UNDER WATER—James Fleming, of Portsmouth, Va. : I claim the combination of a circular saw and its shaft, carried in movable arms upon and around a stationary shaft, which sustains the driving pulleys, and which is fixed to an adjustable tongue or clamp, substantially

by as described, for the purpose of cutting or sawing off piles under water.

I also claim the method of fastening to the pile to be sawn by means of a clamp or adjustable tongue, with suitable jaws and teeth, as described.

I further claim the method of feeding a circular saw from points of resistance fixed upon a stationary shaft, by means of arms, curved racks, and pinions, as set forth.

FARM GATES—C. L. Harsen and M. R. Bralley, of Norwalk, Ohio : We claim the construction of farm gates with their several parts loosely connected, combined with the bent lever, L, and diagonal rod, R, arranged and operating so as to elevate the gate in opening, for the passage of obstructions, substantially as set forth.

GANG PLOWS—T. J. Hall, of Tawakana Hills Texas : I do not claim a gang of plows; nor do I claim the hanging of the plows to hinged or pivoted beams, these being well known.

But I claim the arrangement of the plows and pivoted beams, with the adjustable cross beams, so that the plows have a convenient permanent adjustment, in connection with their self-adjusting property in the plow beam, as set forth and described.

SPRING ROLLERS FOR CURTAINS—John and Jacob Hartshorn, of Boston, Mass. : We claim attaching one end of the springs to the sliding block, K, for the purpose of enabling them to increase and diminish in length as they are wound up or expanded, in the manner and for the purpose set forth.

BOOT AND SHOE STRETCHERS—Warren Holden, of Philadelphia, Pa. : I claim dividing the last, A, into a number of parts, a, b, c, c, connected by rods, e, e, f, f, and a link, d, and forcing said parts outwards, so as to stretch the boot or shoe at the desired part, or at all parts, by means of the device composed of the jointed levers, j, j, nuts, k, k, and rod, l, as shown and described.

[For boot and shoemakers and fitters, this seems to be an important improvement; it is far superior to any of the stretchers for a like purpose we have seen. A brief description of its peculiarities may be found in this week's paper, on another page.]

BOOT CRIMPING MACHINES—H. B. Horton, of Northville, Mich. : I claim the employment of inclined surfaces, upon screws, d, d, on the face of the jaws, B, B, arranged substantially in the manner and for the purpose set forth.

PROJECTILE FOR FIRE ARMS—Eben Hoyt, of Chelsea, Mass. : I claim the employment of inclined surfaces, upon the rear end of the ball, operating in the manner and for the purpose substantially as set forth.

MITER BOX—Matthew Spear, of Bowdoinham, Maine : I claim the additional improvement made by me, viz., the sliding index arch, A, as combined with the lumber bearers or supporters, a, a', and the saw guide, and made to operate therewith, essentially as specified.

I also claim the combination of the extra grooves, f2, with the lumber supporters, the same being for the purpose as set forth.

I also claim the combination of the grooves, e2, and said lumber supporters, such being for the purpose as set forth.

I also claim the combination of the adjustable gauge with the edge supporter, the same being to determine the length of the stuff to be operated upon.

I claim also the described mode of constructing the head, h2, of the adjustable gauge so that it may serve to increase the bearing for the stuff during the operation of mitering the supplement of an angle, as specified.

I also claim the movable edge pieces, K, K, in combination with the lumber bearers.

I also claim combining with the curved arc, A, the inner index scale, for the purpose of enabling a person to adjust the machine for the purpose of mitering to the supplement of any angle required, as specified.

And I also claim combining with the movable pieces, K, K, the projecting lips, a4 a4' the same being for the purpose specified.

CLAMPING SASH, &c.—S. P. Smith, of Half Moon, N. Y. : I do not claim separately the adjustable heads, B, B. Neither do I claim operating the clamps, B, by a toggle joint, irrespective of their connection with the adjustable head and the arrangement shown.

But I claim the employment or use of the clamps, D D D, operated by levers, e' e', connected to a head, F, and forming what is commonly termed a toggle joint, in combination with the adjustable heads, B, B, the above parts being arranged and operating in the manner and for the purpose, as shown and described.

[This invention was beautifully illustrated in No. 7, present Vol. of the Sci. Am.]

SEWING MACHINES—G. W. Stedman, of Vienna, N. J. : I claim feeding the cloth or other material, along by means of a pin, a, or its equivalent, playing in a revolving shaft, B, which at the proper moment in each revolution brings it in contact with a stationary cam, M, or its equivalent, whereby the pin is pressed into the cloth, but again recedes therefrom, as soon as freed from the cam, substantially as set forth.

I also claim the cam, M, constructed substantially as described, when arranged upon a movable arm or its equivalent, so that by simply adjusting its position, the length of stitch can be varied at the will of the operator.

MACHINES FOR BURNISHING METALS—Eremiah Stever, of Bristol, Conn. : I claim the arrangement of the connecting rod, I, of the burnishing slider, B, the rocker shaft, E, the slider, H, the rod, G, and the bow or stirrup, F, whereby the movement of the burnishers may not only be entirely arrested, while the rocker shaft is in motion, but may have given to it such an extent of reciprocating movement as occasion may require.

FURNACES FOR HEATING WROUGHT-IRON WHEELS FOR FORGING—W. R. Thompson, of Cleveland, Ohio : I claim the arrangement of the furnace, A, with double fire places or chambers, B, B', furnished with flues, G, G', and dampers, F, F', in combination with the wind pipe, I, and valves, J, J', for the purpose of alternately heating both sides of the hubs of wrought iron wheels or other articles, between the nozzles, h, h, in the manner specified.

[NOTE.—Of the above brief list of patents issued last week FOURTEEN of them—more than one-third,—were secured through the Scientific American Patent Agency. We believe there was never a greater demand for good patents than there is at the present time, and parties who are contemplating securing their inventions, should not delay to take the necessary steps. It is our opinion that a better time for taking patents in this country will never arrive, and that a greater demand will never be made for good improvements than now exists. Circulars of information concerning the proper steps to be taken to secure patents, furnished gratis upon application to this office. They are also sent by mail when requested.]

Singular Phenomenon.

Just above the locks on Green River, Indiana, when there is a low stage of water, the steamboats shut down their furnace doors for fear of "setting fire to the river," the bottom of which is covered to a great depth with decomposed vegetable matter, which, when stirred up by the paddles, emits an inflammable gas, instantly igniting in contact with flame. By stopping the boat the flame ceases, and is seldom dangerous.—[Exchange.]

Horticultural Novelty.

The agricultural branch of the Patent Office has taken steps to procure seeds of the bunya-bunya, a tree of the fir genus, which grows in Australia, and bears a cone nearly two feet in diameter, filled with seed of the size of an olive, and of flavor more rich and delicate than that of the pine apple.

There have recently been imported from France the cuttings of several varieties of the prune, which have been distributed by the Department in Maine, New Hampshire, Vermont, Northern New York, Michigan, Wisconsin, Minnesota, and several points on the Allegheny mountains, to be engrafted on the common plum tree.

The Patent Eight-wheeled Car Case

A very important patent case, which had occupied the U. S. Circuit Court in this City, Judge Betts presiding, from the 5th of last March, (no less than sixty days,) was concluded on Friday the 4th inst.

It was a trial for infringement of the patent of Ross Winans, of Baltimore, by the Harlem Railroad Company. The patent was obtained in 1834, for the employment of eight-wheeled cars on railroads, and the present suit for damages was instituted in 1849. The defendants pleaded the general issue, viz., that the invention was not new, that eight-wheeled cars had been employed for similar purposes before Ross Winans' application of them, and even if he were the original inventor, he had allowed them to go into public use, with his consent, before his patent was granted, and that under the act of 1793 (now abolished by the act of 1836, subsequent to the granting of his patent,) it constituted abandonment of the invention. It was also contended that the patent drawings substituted by him for those burned in the Patent Office, in 1836, were not true copies.

Judge Betts charged the Jury, that the drawings substituted for those burned must be like the originals, and they were to judge of this from the evidence. Also whether the cars used for the transporting of lumber, and those patented in England, before 1834, presented as proof by the defence, were similar to those of the complainant; also, whether he constructed cars, and allowed them to be publicly used, for the benefit of other parties before he obtained his patent. If the invention of Mr. Winans were new, unlike those used before 1834; if he did not dedicate it to public use; and if his drawings, were true copies of the originals, and correct, then he was entitled to the verdict.

The Jury were out all night, and came in on the Friday morning requesting further instructions from the Judge; these were given, and they again retired for a few hours, when they came in and declared they were unable to agree. They were then discharged.

Such were the inconclusive results of this long trial, said to cost \$40,000. A deep interest was manifested respecting what the decision of the Jury would be. It may be said that many millions of dollars vibrated on the issue, claims having been set up against a number of other railroads for infringement of the same patent.

Ketchum's Patent Case.

Howard & Co., of Buffalo, have published in the Buffalo Advertiser of the 24th ult., the decree and injunction granted by Judges Nelson and Hall, in Utica, on the 18th ult., against E. Forbush and W. Mercer. They assert that all those who are using the machines made by the American Mowing Machine Co.—Forbush's patent—is liable to them for damages.

Reaper Patent Case.

In this city on the 28th ult., before Justice Nelson, U. S. Circuit Court, three cases for infringement of McCormick's reaper patent were decided. One of the defendants—Wood—agreed to take license from McCormick; but other two, Marcellus and Jerome.

When we went to press, another case of McCormick, against Seymour, for infringement of his reaper patent, on a motion for injunction, was being argued before Judge Nelson.

A suit between Woodworth and Norcross, respecting Woodworth's planing machine, is also set down for trial. The results we will present to our readers in due season.

The Ohio Cultivator gives accounts from several counties of that State respecting the promising appearance of the young wheat crop.