



[Reported Officially for the Scientific American.]

### LIST OF PATENT CLAIMS

Issued from the United States Patent Office,  
FOR THE WEEK ENDING APRIL 25, 1855.

**PLATFORMS OF GRAIN HARVESTERS**—Jearum Atkins, of Chicago, Ill.: I claim the bars or ribs, or their equivalents, on the platform of reapers in rear of the knife, in combination with a rake actuated by hand or by machinery and moving above the platform; the ribs being either straight or curved, but parallel or nearly so to the travel of the teeth of the rake.

**SPRING CONNECTING RODS FOR WASHING MACHINES**—J. W. Corey, of Crawfordsville, Ind.: I claim the coiled spring, C, combined with the eccentric, E, or its equivalent for the purposes specified.

**STOVES, &c.**—Jonathan Johnson & Joel E. Crane, of Lowell, Mass.: We do not claim the central air-heating passage, L, separately, for that has been previously used. But we claim the employment of the valves, H, in combination with the bridge, J, arranged in the manner described and for the purpose specified.

**MANUFACTURE OF SLATE PENCILS**—Norman C. Harris, of Poughkeepsie, N. Y.: I claim cutting the pencils, completely formed from slabs of slate, by means of a cutter or series of cutters, grooved so as to half form the pencils on one side of each slab, and then reversing the slab and forming the other halves of the pencils, substantially as set forth.

**IMPLEMENT FOR SHEARING SHEEP**—Palmer Lancaster, of Barre, Vt.: I claim the construction of the implement, as shown and described, viz., having a series of cutters, F, work over a series of stationary cutters, H, the cutters, F, having a vibratory movement given them by means of the reciprocating frame, B, rack, D, D', pinions, F', F', with pawls, d, d', attached to them and spur wheel, G, pinion, H, and crank, pulley, I, the pinions, F', F', being placed loosely on the shaft, E, of the spur wheel, G. The above parts being arranged as shown and operating in the manner and for the purpose set forth.

[This novel piece of mechanism for sheep shearing is described on another page.]

**FEEDING PAPER TO PRINTING PRESSES**—Isaac B. Livingston & Miles Waterhouse, of Barnet, Vt.: We claim the use of the angular guide ways, in combination with the cross bar, or its equivalent.

We claim the use of crank or its equivalent working between the arms of levers as described, in combination with lever and cross bar, as described.

We claim the raising table in combination with the cams, shafting, and gearing, for moving said table, or their equivalents, as described.

We do not claim the raising of paper by atmospheric pressure, as that has been used for that purpose.

We claim the combination of machinery, as described, for carrying forward the paper, a sheet at a time, and feeding it to printing presses.

**LOOMS**—J. G. Melville and Wm. Brayshaw, of Wetheredville, Md.: We are fully aware that a forked bar through a series of cog gearing and ratchets has been used for operating the shuttle boxes of looms. This we do not claim.

We claim, in combination with vibrating bar or lever, one or more segments, whose perimeters are partially provided with cog and partially with ratchet teeth, for the purpose of operating the shuttle boxes of figuring looms through the intervention of a straight rack, so that we dispense with several of the pieces heretofore used, and thus cheapen and simplify the mechanism, as set forth, while the same ends are attained as by the more complicated machinery at present used for this purpose.

**PIANOFORTE ACTION**—William Munroe, of Boston, Mass.: I claim, first, the combination of the escapement jack and check co-operating to sustain the hammer in position to repeat and to prevent its rebound, substantially in the manner set forth.

Second, the inclined escapement, as applied to pianoforte and other similar actions, substantially in the manner set forth.

Third, the application of the toggle joint to pianoforte and other actions, in combination with the jack and hammer for the purpose set forth.

**CARRIAGE SPRINGS**—Thos. Murgatroyd, Jr., of Smithville, Canada West. Patented in Canada, July 21, 1854: I claim the ends of the springs, A, A', attached to the arms, a, of the axles, B, B, by links, b, b, the links, b, being above and the links, b, below the arms of the axle, the two springs, A, A', being connected by stays or rods, C; the springs being also braced to prevent a forward and backward motion of the same, and the axles, B, being supported or braced by the rod or brace, D, as shown and described.

[This improvement in springs is briefly described on another page.]

**COMBINED TABLE AND WRITING DESK**—Lucius Page, of Caveadish, Vt.: I claim the combination of the desk recess, B, and the hinged box or case, C, with the table, so as to operate therewith, as specified.

I also claim the combination of a reversible paper rack with the hinged box or case, provided with two sets of doors on its opposite sides, as specified and adapted to a table so as to fold into and out of the same, in the manner described.

**MACHINES FOR POLISHING STONE**—L. S. Robbins, of New York City: I do not claim the use of a revolving self-adjusting polish or grinder, or the manipulating apparatus separately considered.

But I claim the manipulating apparatus, consisting of the shaft, A, crane, C, radial arm, G, and wheel, E, as described, in combination with the revolving and self-adjusting rubber or polisher, constructed and arranged substantially in the manner set forth and for the purposes specified.

**MACHINES FOR PLANING METAL**—J. H. Thompson, of Paterson, N. J.: I claim, first, planing the sides of nuts of prismatic bars, by means of a series of cutters, c, attached to the periphery of a disk, C, of scroll form, so that each cutter will project a trifle further from the center or shaft, B, of said disk, and thereby allow the whole number of cutters to pass over and plane the whole surface of each side of the nuts or bar at one revolution of the disk, as shown and described.

Second, I claim the employment or use of the disk, C, with cutters, c, attached to its periphery, as shown, in combination with the intermittingly rotating mandrel, E, for the purpose as set forth.

Third, I claim rotating the mandrel, E, intermittingly by means of the lever, H, projection, j, attached to the disk, C, and the ratchet, E, and drum, G, operated by a weight, h, or its equivalent.

Fourth, I claim operating the clutch, U, by means of the radial arms, P, lever, V, and spring, S, attached to the sliding bar, R, the arms, P, being acted upon by the arm, W, on the shaft, B, as shown and described.

[This is a very valuable invention, which will be illustrated in our columns at some future time. Foreign patents are being secured upon it, which precludes the propriety of publishing a description of it at this time.]

**ATTACHING WHEELS TO HARVESTERS, &c.**—Abner Whiteley, of Springfield, Ohio: I claim the simultaneous attachment of the wheel, a, to or on the axle, b, and the axle, b, to the plate, f, by means of the bolt, g, in combination respectively with the stud, e, and washer, c, as described.

**HARVESTERS**—Abner Whiteley, of Springfield, Ohio: I am aware that grain has been reeled down, cut, conveyed over the platform, and discharged in a continuously straight line, parallel to the line of draft; and I am aware that curved and bent platforms, and platforms oblique not only to the line of draft, but also to the reel and finger bar, have been used to discharge the grain behind the master wheel, or otherwise remove it from the standing grain.

But I claim, first, the above described arrangement of reel, cutting apparatus and platform all oblique to the line of draft or reel acting obliquely over any platform, or any other substantially equivalent device, whereby the grain is at once reeled down, cut, and conveyed over the platform in

a continuously straight line, and at the same time delivered at a sufficient distance from the standing grain to permit the passage of the horses between it and the cut grain, when cutting the next swath.

Second, I claim also so placing the reel, as described, that the reel rods will strike the grain, when they enter it, outside of the line passing through the point of the divider and parallel to the line of draft.

Third, I claim placing the grain wheel in a plane intersecting the line of draft, so that it may relieve or counteract the side draft, as set forth.

Fourth, I claim placing the axis of the grain wheel (when so located in a plane intersecting the line of draft) in a plane which passes vertically through the center of the master wheel, so that it may, at the same time, give ease in turning at the corners, as set forth.

Fifth, I claim the combination of the metal groove, U, and the sickle, h, the length of which is that of the cut of the machine, for the purpose of enabling me to place the grain wheel opposite the end of the sickle, and at the same time with its point of bearing on the ground, within the space covered by the divider, as set forth and described.

Sixth, I claim the longer and divergent finger next to the divider substantially as and for the purposes set forth and described.

Seventh, I claim the sickle tooth, d, serrated on the smooth side and beveled on the other, substantially as and for the purposes set forth and described.

Eighth, I claim the alternate spaces in the rear of the sickle bar and teeth, combined with the shoulders on the fingers, against which the sickle bar works, for the purpose of alternating the bearings as and for the purposes set forth and described.

Ninth, I claim the cone, t, on the knee lever, o, substantially as described and for the purposes set forth.

Tenth, disclaiming the broad device of guides to return the rake in a different path from that in which it advanced.

I claim the combination of the rake, K, swinging from one arm of the reel, with the spring plate guides, R, R, by which, when the rake has delivered the grain at the end of the platform it is prevented from swinging back and coming in contact with the falling grain, as described.

**FORGE HAMMERS**—John Comstock, of New London, Ct. (assignor to Peter Naylor, of New York City): I do not claim a tightening pulley, as this is well known, but I am not aware that a tightening pulley and brake have ever before been used, as set forth, by which the speed of the blow is regulated by the tightness of the belt, or the same is stopped entirely by the brake, while the motive power still propels the belt.

And I am well aware that a hammer has been so set as to be drawn down to give the blow, and then raised again by a spring, therefore I do not claim the same in itself.

And I am also well aware that different sized cams have been used for raising a forging hammer, therefore I do not claim the different lengths of cams in themselves; but I am not aware that two or more cams of varying lengths have ever before been combined with or attached to the ends of a screw shackle to pull down a hammer and give the blow, whereby I am enabled to use a definite amount of motion given by a cam to forge articles of various sizes, the screw shackles giving the facility for regulating the point to which the hammer is pulled.

First, I claim the method described and shown, for regulating the speed of the blows given by a forging hammer by the use of a tightening pulley combined with the brake applied to the fly wheel, substantially as specified.

Second, I claim the method described and shown, of regulating the amount which a hammer is drawn down to give the blow, by rotating cams, by combining with said cams and hammer the adjustable screw shackle, 20 and lever, u, the whole constructed and combined, substantially as specified.

**MACHINES FOR DRESSING LAWS**—R. L. Hawes, of Worcester, Mass. (assignor to Robert Remie, of Lond. N. J.): I do not claim finishing laws by causing the selvages to advance alternately as the goods pass through the dressing machine, as this is done upon the machines described in Newton's London Journal, co-joined series, Vol. 32, page 77.

I claim the stationary heating cylinder, in combination with the hoods, D, having an alternate intermittent motion, in the manner described and for the purpose set forth.

I claim the sectional roll, I, in combination with the rollers, k, k', operating substantially as described, for the purpose of drawing the selvages alternately from the machine, as set forth.

#### RE-ISSUE

**HINGES OF ROLLING IRON SHUTTERS**—A. L. Johnson, of Baltimore, Md. Originally patented June 25, 1850: I claim constructing shutters of slats of sheet metal with joints formed by curving the edges of the slats, as described, and securing them in place, in the manner specified, viz., either by turning down projections or attachments to the ends of the slats, and thus forming an even edge to the shutters, or by means of wires inserted in the curves and bent and headed at the ends, the shutters sliding up and down in the grooves of the window frame in which it is placed, the whole being constructed substantially as specified.

[What is the matter at the Patent Office, now? What means this short list of issues for last week? The days are long enough at this season, and surely there is examining force sufficient to have turned out a larger batch of patents, in an entire week, than is given above. Don't let the spring fever get hold of you to relax your energies, Messrs. Examiners, but keep your tables as clear as they were on the first of January last, and you shall have the universal thanks of the inventors throughout the land.]

#### On Writing Inks.

**PAPER RECENTLY READ IN THE SOCIETY OF ARTS, Edinburgh, by Dr. J. Stark.**—The author stated that in 1842 he commenced a series of experiments on writing inks, and up to this date had manufactured 229 different inks, and tested the durability of writings made with these on all kinds of paper. As the result of his experiments, he showed that the browning and fading of inks resulted from many causes, but in ordinary inks chiefly from the iron becoming peroxygenated and separating as a heavy precipitate. Many inks, therefore, when fresh made, yielded durable writings; but when the ink became old, the tannogallate of iron separated, and the durability of the ink was destroyed. From a numerous set of experiments, the author showed that no salt of iron and no preparation of iron equalled the common sulphate of iron—that is, the commercial copperas—for the purpose of ink making; and that even the addition of any persalt, such as the nitrate or chloride of iron, though it improved the present color of the ink, deteriorated its durability. The author failed to procure a persistent black ink from manganese, or other metal or metallic salt. The author exhibited a series of eighteen inks which had either been made with metallic iron or with which metallic iron had been immersed, and directed attention to the fact that though the depth and body of color seemed to be deepened, yet in every case the durability of writings made with such inks was so impaired that they became brown and faded in a few months. The most per-

manent ordinary inks were shown to be composed of the best blue gall nuts with copperas and gum, and the proportions found on experiment to yield the most persistent black were six parts of best blue galls to four parts of copperas. Writings made with such an ink stood exposure to sun and air for twelve months without exhibiting any change of color; while those made with inks of every other proportion or composition had more or less of their color discharged when similarly tested. This ink, therefore, if kept from moldering and from depositing its tannogallate of iron, would afford writings perfectly durable. It was shown that no gall and logwood ink was equal to the pure gall ink in so far as durability in the writings was concerned. All such inks lost their color and faded sooner than pure gall inks, and several inks were exhibited which, though durable before the addition of logwood, faded rapidly after logwood was added to them. Sugar was shown to have an especially hurtful action on the durability of inks containing logwood—indeed, on all inks. Many other plain inks were exhibited, and their properties described—as gallosumach ink, myrobalans ink, Range's ink—inks in which the tannogallate of iron was kept in solution by nitric, muriatic, sulphuric, and other acids, or by oxalate of potash, chloride of lime, &c. The myrobalans ink was recommended as an ink of some promise for durability, and as the cheapest ink it was possible to manufacture. All ordinary inks however, were shown to have certain drawbacks, and the author endeavored to ascertain by experiment whether other dark substances could be added to inks to impart greater durability to writings made with them, and at the same time prevent those chemical changes which were the cause of ordinary inks fading. After experimenting with various substances, and among others, with Prussian blue and indigo dissolved in various ways, he found the sulphate of indigo to fulfill all the required conditions, and, when added in the proper proportion to a tannogallate ink, it yielded an ink which is agreeable to write with, which flows freely from the pen, and does not clog it; which never molds, and when it dries on the paper, becomes of an intense pure black, and which does not fade or change its color, however long kept. The author pointed out the proper proportions for securing these properties, and showed that the smallest quantity of the sulphate of indigo which could be used for this purpose was eight ounces for every gallon of ink. The author stated that the ink he preferred for his own use was composed of twelve ounces of gall, eight ounces of sulphate of indigo, eight ounces of copperas, a few cloves, and four or six ounces of gum arabic, for a gallon of ink. It was shown that immersing iron wire or filings in these inks destroyed their durability as much as similar treatment destroyed ordinary inks. He therefore recommended that all legal deeds or documents should be written with quill pens, as the contact of steel invariably destroys more or less the durability of every ink. The author concluded his paper with a few remarks on copying inks and indelible inks, showing that a good copying ink has yet to be sought for, and that indelible inks, which will resist the pencillings and washings of the chemist and the forger, need never be looked for.—[London Artizan.]

#### Our Inventors.

The *Day Book* has an article devoted to our Patent Laws. It says:—

"The Courts have at last learned to view patentees, not as greedy monopolists, but as public benefactors. The current of decisions is now strongly turned to protect, as far as possible, their rights, and everything which can be, is interpreted in their favor. But more is wanting than this. We admit that this is a change that augurs well, for the time was when everything was taken most strongly against the patentee by the Judges. They have learned better the value of the labors of the discoverer to the public, and decide accordingly. It is not now the

prejudices of the Judges that are to be reformed."

[There is much solid truth in what our contemporary says. One of the greatest boons, we think, that could now be conferred on patentees, would be a reform respecting the great expenses attending the defence of patents in the U. S. Courts. Some inventors have said to us that it was well the law expenses were so great, for that was the very reason why patentees dreaded to enter into law suits, and why there existed a dread of infringing patents by others. We confess this is a very good argument in favor of high legal expenses, but we hold to the doctrine that the means of obtaining the protection of law should always be simple and cheap.]

#### Hopkins' Patent Self-Operating Car Coupling.

On Friday of last week we were present at an exhibition of the operation of this improvement, on the premises of the N. Y. and E. Railroad, Jersey City, opposite New York. A train of some four or five passenger cars on which the improvement is used, was put in requisition, the various cars being repeatedly uncoupled, and all again simultaneously connected by the mere backing up of the locomotive. The improvement is one of a very simple nature, consisting in the placing of a headed spring (costing five cents) within the common draw heads. By another improvement in the manufacture, these self-coupling draw heads are produced at a less cost than the present heads. The common heads may also be altered to receive the improvement at a trifling expense. This invention is now being adopted on all the cars of the Erie Railroad, and we presume will come into general use, since no alteration or depreciation in existing fixtures is required. When we consider the large loss of life and maiming of limb which must unavoidably occur under the present dangerous method of coupling cars by stationing a man between each, the introduction of such improvements as the one we have described, becomes a matter of commendable humanity, to say nothing of economics. Engravings of this invention will be published in a few weeks.

#### Frost and Iron Rails.

During the past winter, it was found on the New York Central Railroad that the lightest rails were far less injured by the severe frost than the heavy ones. There were three kinds in use upon which strict observation was maintained—those weighing 56 lbs. to the yard, those weighing 65 lbs., and those weighing 75 lbs. to the yard. The heaviest rails were worn the worst, the next heaviest less, and the lightest the least of all; and the heaviest were injured more in proportion than either of the other. The 56 lb. rail stood the frost and percussion of the passing trains, as compared with the 65 lb. one, better than the latter did as compared with the 75 lb. rail. It was also observed that wheels and rails were more apt to break the day after intense cold, than on that day itself.

#### The Street Sweeping Machines.

Contrary to the statements of Street-Commissioner Ebling—which we noticed last week—we have been informed that the sweeping machines have done their work better and cheaper than ever it has been done by hand. The streets on which these machines operated, never were kept so clean before. The whole fault of the machines consists in this, "they have no vote."

#### Arsenic Smokers.

In North China, the people smoke arsenic mixed in small quantities with their tobacco. These people are said to be strong, healthy, and ruddy. Dr. Londe, of Paris, asserts that its use in this manner—smoking—is a remedy for tubercular consumption.

#### Curious Phenomenon.

The Geneva (N. Y.) *Gazette* states, that during the 18th and 19th inst., the waters of Seneca lake rose and fell from five inches to two feet, perpendicularly, in spaces of time varying from ten minutes to half an hour, continuously throughout that period.