

RAKES FOR HARVESTERS—Isaac Van Doren, of Somerville, N. J. : I claim the arrangement or combination of the geared wheel, D, having spur and face gears, as described, and shaft, H, with its pinions, F, G, J, in connection with the supporting roller, B, and expanding levers, M, substantially as described, for the purpose of operating the rake, N, by the roller, E.

I also claim, in connection with the rake, N, when operated as described by means of expanding levers, M, the trips, K, K, for the purpose of throwing the teeth in a vertical position to carry the grain from the platform.

MANUFACTURE OF SCYTHES—Harvey Waters, of Northbridge, Mass. : I wish it to be distinctly understood that I do not make any claim to such mode of procedure, or to the arrangement of dies specified under the present application.

Nor do I wish to be understood as limiting my claim of invention to the said new manufacture of cutting instruments known under the term scythes, as the peculiar edge thus produced is applicable to other cutting instruments.

What I claim is the new manufacture of cutting instruments, substantially such as described, having the metal forming the cutting edge in the condition resulting from the previous crinkling or corrugating of the metal at right angles, or nearly so, with the line of the intended cutting edge, and then flattening it by a swaging operation in such manner that the crinkles or corrugations shall not be straightened out by simply bending, as described.

LIME KILNS—Abner B. Weeks, of Rockland, Me. : I do not claim any of the devices shown in the patent of Aaron Jeffries, dated April 21, 1857; nor any of those shown in the patent of Isaac Richardson, dated February 21, 1840.

Nor do I claim a single stack, having at its top a single mouth of discharge, and at its bottom or lower part a wall to extend above such bottom, about one-third the height of the stack, the same being as shown in Hebert's Cyclopaedia, Vol. 2, page 16.

But I claim my improved arrangement of a single hopper with respect to two separate stacks, such being placed at or over their upper ends, and so as to flare and increase in width from them upward, and communicate with them as represented and described.

I also claim arranging air or cooling passages horizontally, or with the inclinations as described, under broad flat hearths of any suitable material, in the manner and for the purpose as set forth, and in combination and connection with the furnace of a lime kiln, by means of pipes or passages constructed and relatively arranged as specified.

HORSE SHOES—Elbridge Wheeler, of Marlborough, Mass. : I claim the described horse shoe, the calks and shoe being of one piece of metal, formed by drawing down the shoe, and without welding or turning up.

BURGLAR'S ALARM—William D. Wright, of Baltimore, Md. : I claim combining a torpedo within a chamber or box, between weights, so that when said box drops, and strikes against anything, the force or rebound of the weights shall cause the torpedo to explode, and thus cause an alarm, as set forth.

HORSE SHOE MACHINE—Harry A. Wills, of Keeseville, N. Y. : The rollers, B, C, mold, E, guide rollers, G, and segments, F, have been previously used, and were employed in the machine of Young & Fisher, previously alluded to; I therefore do not claim such parts.

But I claim, first, The peculiar arrangement of the shears, M, N, in the relation to the upper roller, B, H, and the feeding bar, P, so that the cutter shall be brought into action, and the cutting-off of the blank effected in the revolution of the upper roller, B, by means of the projection, h, on the same, and the blank, when cut off, left in a position to be certainly fed between the rollers, substantially as set forth.

I further claim, in combination with the guide rollers C, attached to the bars, H, H, the auxiliary spring guides E, attached to the bars, J, J, and arranged to operate conjointly with the guide rollers, C, as shown and described.

I also claim loosening or shoving back the blank, F, on the mold, E, just previous to its entering the female die, G, by means of the vibrating or loosening bar, J, for the purpose set forth.

[This is described on another page.]

PIANO LOCK—Nathaniel Wilton, of Boston, Mass. : I claim the construction of the bolt plate, B, with the slots, 1 and 2, of the form shown, whereby said plate is guided in its two positive motions, as described, and actuating said bolt directly by the key in its motions, as set forth.

MACHINES FOR REGULATING THE SUPPLY OF ROVING TO SPINNING MACHINES—John B. Winslow, of New Bedford, Mass. : I claim the combination of the secondary clutch and the main clutch made to operate together upon one shaft, Y, and to be operated by the fibrous material acting in the draw-rollers, substantially as specified, the same causing the shaft, Y, and the bevel gear U, and, of course, the delivering belt, to have their speed varied as circumstances may require, as before specified.

SEWING MACHINE—Josina Gray, of Medford, Mass. (assignor to herself and George O. Brastow, of Somerville, Mass.) : I claim the described device for distending the loop, consisting essentially of the sliding bar, B, and the vibrating arms, A, and C, operating in the manner substantially as set forth.

LOCKS—John M. Perkins, (assignor to Robert M. Patrick,) of New York City : I claim, in combination with a set of tumblers, arranged and operating in the manner described, a set of stationary bars at one end, and a set of washers at the other end, and interposed between, said tumblers, for the purposes specified.

I also claim the yoke embracing the whole set of tumblers, in combination with a pin, or its equivalent, projecting out and through the case, for the purpose of enabling the tumblers to be shoved together so as to cover each other, whereby the slots of the tumblers are caused not to coincide, thus preventing the bolt from being withdrawn.

METHOD OF OPERATING SCROLL SAWS—Henry F. Shaw, (assignor to himself and Moses H. Gragg,) of Boston, Mass. : I claim the use of the two sets of double arms, C, C', and D, D', constructed substantially as described, and attaching the two ends of the saw to the centers of the strips, E and H, which unite the extremities of said arms, substantially as set forth and for the objects specified.

SEWING MACHINE—Amos W. Sangster, (assignor to Victor M. Rice, James Sangster and Eliza Remington,) of Buffalo, N. Y. : I do not claim imparting a feeding or forward motion to the cloth, or other material, while being sewed, by means of a wheel which moves the cloth while revolving, as that has been done before.

But I claim the specific mechanism described, consisting of the frame-work, slide and toggle-joint designated by the letters, H, I, J, K, L, M, N, O, and R, arranged and operating in the manner and for the purpose specified.

RE-ISSUES

MACHINE FOR MAKING BARRELS AND OTHER CASKS—Isaac Crossett, of Bennington, Vt. Patented July 1, 1844. I claim the vibratory block or bed, D, adjustable gage, C, and knife or cutter, E, arranged relatively with each other, so as to operate as and for the purpose set forth.

RUNNING GEAR FOR LOCOMOTIVE ENGINES—Septimus Norris, of Philadelphia, Pa. Patented September 26, 1854. I claim so arranging the running gear of a locomotive engine as to make the driver support its entire weight, in combination with a pivot truck vibrating freely to guide the engine, substantially as described.

LIFE-PRESERVING RAFTS—Lorenzo Taggart, of Philadelphia, Pa. Patented January 26, 1853. I claim a life-preserving raft formed by the ordinary water casks or tanks of ships having eyes secured thereto, so as to be afloat, and connected by spring stay rods, substantially as described, in combination with a rope net-work and canvas sheet, operating as and for the purpose set forth.

Silver and its Uses.

This metal possesses great interest. Its frequent mention in the Scriptures—the shekels of silver, and the talents of silver—indicates its ancient use and application as money. It is one of those metals which the alchemists of old termed “noble” metals, because they found that it could not be rusted; moreover, they could not dissolve it in any menstruum they possessed. Fire only made it brighter. Allusion is made to this fact in the Book of Job, to illustrate the triumph of a good heart over misfortune. Silver is found in all parts of the world, and England yields its share. Bishop Watson, one of our early chemical writers, says that the silver which was procured from the mines in Cardiganshire by Sir Hugh Middleton, amounting to £2,000 value per month, enabled him to construct that valuable work which we call the New River, for the purpose of supplying a portion of London with water. The bishop also mentions that a mint was established at Aberystwith for coining silver. In the English mines this metal is found mixed with lead, from which it is separated by a very simple process invented by Mr. Pattison, of Newcastle. The mixed metal is melted in an iron pot, and is then allowed to cool. The silver “sets” before the lead, and is then separated by simply straining it through a colander. Silver can be beaten out into leaves so thin that one grain of it can be made to cover a surface of more than fifty square inches. Wire also can be drawn from it finer than a human hair. In these respects it has a nearer resemblance to gold than any other metal. With the mechanical qualities of silver most readers are pretty well acquainted; but as very little is known of its chemical qualities, it may be well to mention them. Silver has, as it were, a determination to exist in no other form than in the metallic state in which we generally see it; and although the chemist may dissolve it, and overcome its “nobility,” yet it is so prone to assume its natural state, that even daylight will restore it to its pristine beauty. It is here that chemistry shows its great power in adapting a peculiar property of a material to some use in the arts and manufactures. So we see that silver is the main instrument in the photographic art. Silver is dissolved, some salt is added, you look at it, and the result is that your shadow is their indelibly printed. The poets may well liken soft-flowing rivers to “silver threads covering the green velvet of the earth;” but such types are prosy when we compare them with the painting after life produced by a sunbeam on a fabric imbued with silver. Again, how carefully the good housewife marks her linen! She well knows how it is thus preserved for her own use, but perhaps is not aware of the fact that the indelible ink is nothing more than the solution of a five-cent piece, for which she willingly pays ten cents. Sometimes a little fungus takes up its abode on the human skin; it grows very fast, but does not cause much pain; nevertheless, it is so insidious that if not carefully watched it would destroy life. The doctor comes, he rubs it over with a little caustic, and health is restored. If you ask what this caustic is called, the answer is “nitrate of silver.” SEPTIMUS PIESSE.

Screw-mouthed Bottles.

MESSRS. EDITORS—In No. 23 of the present volume of the SCIENTIFIC AMERICAN will be found an account of an ostensibly new invention, recently patented in Great Britain, by which glass bottles are made with female screws in their noses, necks or mouths. If you will refer to the List of Claims published in No. 49 of Vol. X of the SCIENTIFIC AMERICAN, (August 18, 1855,) you will see that Amasa Stone, of Philadelphia, Pa., patented a tool for forming a screw in the nose or neck of a bottle; and this must be the same thing as the English device described in the *Illustrated Inventor*. Mr. Stone's tool has been in use in this country ever since the date of the patent; and I will warrant that all bottles made thereby will tightly hold

their corks. If any of your readers want bottles made in that fashion, or a tool for making them, I can tell them where they may obtain either on very reasonable terms. I send you this merely to assure you that “Old England” is by no means ahead of “Young America” in respect to bottle-noses.

A SUBSCRIBER.

Philadelphia, Pa., March, 1858.

[For the Scientific American.]

Independent Engines and Pumps in Locomotives.

The able superintendent (Mr. Gregg) at Rome, N. Y., of the Watertown and Rome Railroad, who is always on the *qui vive* in respect to beneficial improvements in the machinery under his charge, has procured one of “Gatley's engines and pump,” and placed them on the locomotive *R. B. Doxtaler*, where they occupy a space of only two and a half by one foot each way, just without the “driver's cab,” on a line with the engineer's bench, consequently they are always under his eye. The locomotive is of Taunton make. These auxiliaries require no alteration, and the pipe connections appear to be most readily adapted to them.

I am not informed as to the expense, but so far as I am able to estimate, the advantages of them will afford full compensation for any extra outlay. If the ordinary pumps are dispensed with, the additional cost of the engine and pumps will be but trifling. The removal of the present pump fixtures, thereby leaving the other machinery more accessible, is, in my opinion, a very great advantage. To be able to transfer water from the tender to the boiler (which cannot be done by the present pump arrangement in use) while the locomotive is waiting at a station, or when detained in a snow-drift, is an advantage obtained by the independent small engine and pump, too obvious to require further remarks in their favor. X. X. W.

Glucose and Sirup.

MESSRS. EDITORS—I have seen it stated in some papers that glucose or grape sugar never crystallized. This is a mistake. Glucose is made in large quantities from potatoes, in France and England, and has as fine and crystalline an appearance as any sugar. For a long time only sirup could be produced; but it was found at last that if the purified sirup was rapidly evaporated to a density of 45° Baume, and then left to cool slowly in a warm place, it all crystallized in a solid mass, but if stirred occasionally, granular crystals were obtained. This sugar is much used to adulterate other sugar, but its sweetening properties are greatly inferior to cane sugar, the ratio being variously estimated at from two or three to five. Honey is a mixture of grape sugar and fruit sugar. The grape sugar in it is mostly capable of crystallization; it often separates from the fluid portion, and is then said to be candied. This sugar is often found in raisins in the form of small gritty crystals, hence its name. As to the value of the Sorgho Saccharum sirup as a marketable article, I am not prepared to speak, but I do not think it can be sold here. People buy some of it from curiosity, but seldom more than once. I have been assured by those who have the most of it, that they can find no market for it, and they intend to distil it, for which purpose it is very well suited. As many as 225 gallons of moderately concentrated sirup have been produced here from an acre of ground planted with the cane.

Interesting reports on the optical and other relations of crystalline and amorphous grape sugar, and on the other varieties, have been made during the past year by Dubrunfaut, Biot, and Bechamp, in France, and by Erdman and Kobill, in Germany.

J. CAMPBELL.

Dayton, Ohio, March, 1858.

Operation on an Elephant.

During the late visit to Hull, England, of Wombwell's menagerie, the elephant “Chubby” underwent an operation which, from its novelty and success, deserves a place among

surgical records. For twelve or fifteen months previously, a tumor had been gathering on Chubby's off-side thigh. It grew, and grew, and grew, till at last men began to doubt whether the elephant was an appendage of the tumor, or the tumor an appendage of the elephant; for the larger grew the one, the smaller grew the other. Chubby sickened, lost his appetite, pined away; his skin became “a world too wide.” The sobriquet of Chubby, which his once fair proportions merited, grew to be a mockery, and it became evident that unless the tumor and Chubby dissolved partnership, the former would soon be sole representative of the firm. Change of air was tried, but the tumor only derived advantage. Medical advice was called in; but alas it proved another nut which the faculty could not crack. Nine famous “leeches,” at nine various stations, tried their juleps and catholicons, but in vain; no one daring to have recourse to the knife with such a patient. Such was the state of matters when Chubby paid his farewell visit, as it was supposed, last Hull fair. His friends, as a last resource, applied to one of their townsmen, a veterinary surgeon, Mr. Tom B. H. Hyde, Jun. Mr. Hyde went, saw, and boldly resolved to use the lancet. The operation was performed a few days after the fair, and lasted two hours; Chubby undergoing it with such fortitude and good sense as could only be derived from a consciousness of its object. The tumor, when removed, weighed five pounds, and one of the fangs had to be searched out with the knife for a foot down the thigh. The operation proved eminently successful. Every fresh bulletin announced his improving health till the latter end of November, when Mr. Hyde pronounced his patient thoroughly restored, and capable of returning to business. Chubby at once took the train to join his friends, Messrs. Wombwell & Co., and when last heard of, his appetite and good looks were the theme of general admiration.

Recent Patented Improvements.

The following inventions have been patented this week, as will be found by referring to our List of Claims on another page:—

GRAPPLING IMPLEMENT—Thomas Sheehan, of Dunkirk, N. Y., has invented an improvement in implements which are employed for grasping submerged articles at the bottom of rivers, wells, &c., and raising them to the surface. The object of the invention is to produce an implement over which the operator may have perfect control, the jaws being allowed to distend to a greater or less degree as may be desired, and also permitted to close forcibly or gradually at any depth at which the implement is capable of being used.

CALENDAR CLOCK—H. Skinner, of Huron, Ohio, has invented a new clock for telling the day of the month, the month itself, and hour. It does this by a simple arrangement of mechanism that accommodates itself to the varying lengths of the months, and gives February only twenty-eight days in leap year. It is less complicated than those usually made to effect the same purpose, and does great credit to the ingenuity of the inventor.

MACHINE FOR MAKING HORSE SHOES.—This is an improvement on a machine for the same purpose patented July 29, 1857, by B. Young and S. Titus. The invention consists in the employment of cutting shears and a feeding device, auxiliary guides, and a vibrating bar or loosening rod, arranged and applied to the above machine so as to facilitate its operation, and ensure the perfection of its work, as well as increase the quantity turned out. It is the invention of H. A. Wills, of Keeseville, N. Y.

THE mold on decayed fruit, stale bread, moist wood, &c., is shown by the microscope to be plants, bearing leaves, flowers, and seeds, and increasing with incredible rapidity, for in a few hours the seeds spring up, arrive at maturity, and bring forth seeds themselves, so that many generations are perfected in a day.