ADJUSTABLE MITER.—Peter A. Snyder, Jersey City, N. J.—The object of is invention is to construct a miter, which may be readily adjusted to any angle, and one which will correctly divide each angle into two equal parts, so that the moldings may be marked by it ready for cutting.

STEAM TRAP.—Thomas N. Davey, Jeffersonville, Ind.—The object of this invention is to automatically relieve steam cylinders, steam pipes, and all her apparatus where steam is used from condensed steam or water of consation; also to give the engineer or operator a full and easy control of the rap valve under all circumstances whether under the pressure of steam r not.

SASH FASTENING.—Benj. S. Hyers, Pekin, Ill.—The nature of this invention onsists in the peculiar construction of a friction wheel which is made to ear upon the side of a sash so as to hold it in any desired position.

HAME FASTENING.—W. J. Alexander, Manchester, Iowa.—This device is for fastening the hames upon the collar, and consists of two portions attached to the respective hames, one slipping into the other and fastening therein by the ngagement of a spring catch with recesses in the socket. The catch piece is detached from the socket by a peculiar motion, and the whole is metallic and intended to prevent the fastening from being gnawed and destroyed as is frequently the case with mule harness.

SAW MILL.—E. H. Stearns, Erie, Pa.—This invention consists in several novel devices and arrangements of machinery by which the construction of ircular saw mills is much simplified and the operation rendered more effective; and the improvements refer especially to the feeding and gigging apparatus which are made to work with great facility and exactness.

SHEEP RACK.—Byron D. Tabor, Wilson, N. Y.—This invention consists in an improved sheep rack, for the purpose of furnishing a simple and efficient feed rack, and one easily set up, and taken down for transportation or storage.

TACKLE BLOCK.—John Briggs, Louisville, Ky.—This invention consists in a novel construction of the shell of the block and in an improvement on the pin of the sheave and hook, whereby a very cheap and durable tackle block is obtained.

SAFETY CLIP.—J. Irving, New York City.—This invention consists in the arrangement of a safety clip in combination with the fifth wheel of a carriage or vehicle in such a manner that by said clip the strength of the connection is increased, and the fifth wheel is prevented from rattling.

MALT EXTRACT.—Leopold Hoff, New York City.—This invention relates to a new beverage which is derived from an extract of barley malt produced by a peculiar process and mixed with certain hygienic ingredients, whereby a compound is obtained which on account of its invigorating and heating qualities, particularly in cases of general debility and consumptive attacks may properly be termed beer of health.

REVERBERATORY FURNACE.—J. M. Whiteside, San Francisco, Cal.—This invention consists in the arrangement of a revolving stirrer to which motion is imparted by mechanical power in combination with the hearth of a reverberatory, in such a manner that the operation of stirring and moving a mass of pulverized ores while roasting or chloridizing in the reverberatory furnace is materially facilitated. The furnace in which the ore is roasted, is covered up and arranged so that all but superheated air is excluded therefrom while the same is in operation, and furthermore jets of superheated steam are injected over the ore on the hearth to facilitate the disintegration and chloridization of the same.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters, must, in all cases, sign their names. We have a right to know those who seek information from us: besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

R., N. Y. asks if there is any material, whether metal or fluid, which is expanded or contracted by the daily changes of light and darkness.

W. L., of Wis.—For reply to your question on the pressure on slide valves we refer you to "Watson's Modern Practice" published by H. C. Baird, 406 Walnut street, Philadelphia. The reply would occupy too much room in our columns, and we have published it several times.

F. S. B., of N. Y.—To make a lacquer for tin to resemble brass, make a varnish by dissolving shellac in alcohol and color it with turmeric to suit your eye. Make the tin clean and apply with a brush.

S. C. D., of Tenn.—The knives of a wood-planing machine can be ground true and regular on an even grindstone, by resting the backs against a cleat secured across the frame at a proper distance from the stone to form the right bevel. Machines are, however, built at a small cost which do the work automatically better than it can be done by hand.

J. W. M., of N. Y., asks if a man could jump from the platform of one locomotive to that of another, the two engines running on parallel tracks, eight feet apart, at the equal rate of sixty miles per hour. We reply: Relative to each other and the man jumping the engines are at rest. Except for the current of wind, sixty miles per hour, a man could jump across with no more effort than from point to point at rest.

W. H. S., of Ill.—We do not think that either the caloric or the gas engine, as manufactured, is adapted to propel carriages over rails or on common roads. The manufacturers of these machines will give you the facts.

H. R., of N. Y.—The benefits or disadvantages of jacketing engine cylinders with steam is still a disputed question. Hopkinson says that where the steam is admitted from the boiler to the jacket, thence to the cylinder proper, an increased amount of cooling surface is exposed, lowering the force of the active steam and occasioning loss. He prefers lagging the cylinder with felt and wood. Bourne, on the contrary, believes there is a saving of steam and fuel by this style of steam jacketing. Our own opinion is that to really effect a saving by a steam jacket, the jacket should be connected with the boiler by an independent pipe and the steam thus used not admitted to the working cylinder. The steam in the outer case would then be higher than that in the cylinder, as it would not lose, as that in the cylinder, by expansion. In this case, the jacket must be strong enough to sustain the full boiler pressure. Jacketing with the exhaust steam we believe to be the sheerest folly.

C. A. G., of N. Y.—If you are successful in completing an engine without any exhaust, as you propose, it is not probable any patent will interfere with you. But what will you do with your steam when you have used it? Condense it and you have a low pressure engine.

M., of Pa.—Our reply to the question of the relative power of engines with different lengths of stroke, or crank, was correct. The *power* exerted is the same in either case. *Power* in this connection being made up of force or pressure exerted, time occupied and steam expended. Only the first condition, or element, seems to have entered into your calculations. In that reply, you will see that we said, "the reason for using different lengths of stroke for cylinders of a common diameter is adaptability to the kind of work to be performed." It may be that your locomotive engineers believe that less power is exerted in starting a train with an engine having long cranks than with one having short cranks. This is apparently, but not really, true. It requires more steam and more time to push a piston three feet than it does to push one eighteen inches, the diameter of cylinders being equal. You cannot get velocity, i. e. expend time, without expending force. Test it on your grindstone with weights.

D. A., of Pa.—One of the minerals you send is a good sample of umber; it is worth a chemical examination. The other specimens are indicative of a coal region; one of them resembles plumbago but is a species of coal.

H. A. S., of Me.—Petrifying wood for razor hones is a new art to us. Silicious matter may be introduced into the body of wood by soaking it first in a weak solution of soluble glass, and then in an acid.

E. F. M., of Ct.—France is the only country that requires a patented invention to be manufactured within its dominions under forfeiture of the right.

J. F. M., of ——.—You have no right to retain the patterns delivered to you by parties who employed you to make castings for them.

D. F. A., of Pa.—The composition of the Zopissa cement has not been made public, and we are not aware that any samples of the article have been brought to the United States. As soon as we procure further information on the subject we shall hasten to give it to the public.

H. O. P., of Mass., desires us to publish "the best methods of finding and recognizing the standard qualities of whale, lard and coal oils." It is not convenient for us just now to prepare a suitable article on the subject. Perhaps some of our readers will furnish the information.

C. A. B., of ——.—To magnetize a steel bar by means of an electro-magnet:—bring one of the poles of the electro-magnet on the center of the bar, and then pressing the two in contact, slide the electro-magnet to one extremity of the bar; perform the same manipulation with the other pole of the electro-magnet on the other half of the bar. The process is to be repeated until the bar becomes fully saturated. The most powerful magnets are obtained by combining thin bars which have previously been magnetized. Magnets should be made of high steel of the best quality, and highly tempered.

SUNDRY ANSWERS.—B. N.—Study our book for Inventors and Mechanics, 25 cts., to know how to calculate horse-power of an engine.—Young Mechanic is informed that minors can obtain patents. See same book.—J. H.—You need not sig new papers.—F. H. M.—You will find a method for attaching rubber o leather in back numbers SCIENTIFIC AMERICAN.—E. S. C.—As to vinegar manufacture, write to H. C. Baird, Philadelphia, Pa., for book. C. P.—ditto. We do not know the parties.—G. H. W.—Rubber can be made snow white. There is a patent for the process. The Goodyear patent for the idea of vulcanizing rubber has expired.—H. B.—No person can use a patented article without the consent of the patentee. It is not new to cement the ends of slates for the purpose you propose. It is doubtful whether the use of the slats would entitle you to a patent. But you can try.—A. P. P. will probably find that the patented jack is slightly different from the one in use. The patent doubtless rests upon the difference.—F. S. C.—Your strap arrangement for coaches can probably be patented.—J. H.—Consult Bourne's book on the steam engine for rule as to lever for safety valve.—D. H. H.—There are ice machines in operation at New Orleans, we believe.—E. G. B.—The "Northern Lights" are supposed to be due to electrical currents.—G. L.—We are not acquainted with the merits of the tanning extract to which you allude nor the company.—D. H. H.—You and your friend will find the nature of the late showering meteors described in recent numbers of SCIENTIFIC AMERICAN.—A. T. The merits of both engines have been discussed in our paper.—J. H. D.—We do not know of any work on boat building.—G. Nearly all the best barrel machines have the toothed cylinder.—W. A. M.—Steam wagons can be successfully used on good roads.—J. A. E.—For best saws and engines see advertisements.—M. B. wants somebody to tell him how to make rings from gold dollars. He has been making one by punching the dollar and hammering the exterior; but he says this leaves a rough hard crease in the middle, and how to soften it he does not know.—J. K. D.—The joint owners of a patent are not partners, and each has the right to make, use, and sell, without accounting to the other.—J. K.—Rebs are now only required to swear that they are citizens of the United States. The oath is the same that all persons are required to take on applying for a patent. To swear that you are a citizen of the Confederate States wont do. The holder of the assignment enjoys the rights of the patentee.

Business and Personal

The charge for insertion under this head is 50 cents a line.

S. Kalfus, 170 Bleecker, N. Y., has for sale ($60), SCIENTIFIC AMERICAN from 1848 up.

J. B. Wilbur, of Johnstown, Pa., desires to know how to remove the scale from new rolled wrought iron. Acid does not answer.

Geo. Francis, Box. No. 4658, New York City, wishes to know where machinery for plaiting or folding shirt bosoms can be purchased.

Jos. C. Haines Lancaster, Pa., wishes to correspond with an author capable of writing on the following subject, "The necessity of every person to be able to hold his horse."

Makers of Ross' Patent Portable Flouring Mill, please address American Tablet Co., Boston, Mass.

J. T. Middleton, New London, Conn., boxes, wishes to purchase a first class treadmill horse-power machine.

The best hay-packing and baling press, for field use, is asked for, with prices, by R. Tattershall, Beloit, Wis.

Parkestein.—H. W. Ladd, Philadelphia, asks where it is manufactured.

Small printing press suitable for druggists, with type, etc. wanted by H. Kroon & Son, North Bennington, Vt.

A. Krauss, Tarr Farm, Pa., wants to know where he can get one of them whistles that sounds like the squeak of a pig, warbles like a canary bird, etc.

A. Tavarts, Kingston, Jamaica, W. I., desires to obtain a machine for making paper boxes for matches (to hold 50 matches). Also wishes for improved machinery for matches, and a small, economical, easily-managed steam engine.

G. Wolf Holste, Neshannock Falls, Pa., wishes to know whether Dale's Patent Loom will weave fancy goods. Also whether the motion is simple and substantial.

Information is wanted concerning the best kinds of work suited for execution by convicts in a penitentiary, where coal, wood, iron, leather, etc., are abundant. Also wanted one or more foremen fully competent to direct such labor. Communicate with H. J. Phares, Selma, Ala.

Jno. Selick, Lewistown, Pa., wishes the address of parties who will manufacture an improved cast-iron apple parer, corer and quarterer.

Horse Hay-Fork Pullies, D. M. Garrett, Shelly, Ohio.

Henry Johnston, Gloucester, Mass., desires to know how to make a cement that will stand a sudden heat and that will set as hard as stone. Wants it for molds, to be repeatedly used.

J. M. Goff, Ionia, Ill., desires information where he can obtain flat, untempered, steel wire, three-eighths inch wide, one-sixteenth thick, price per 100 lbs.

Any one having on hand or who will make rivet machines of approved patterns can find a cash purchaser, by addressing with description, price, etc. "Rivets" P. O., Buffalo, N. Y.

N. Spencer Thomas, of Painted Post, N. Y. writes—"We now have a club for SCIENTIFIC AMERICAN in this village, already numbering eleven or twelve against two heretofore sent to this P. O." Similarly encouraging letters are pouring in from all directions.

E. C. R. of Va., writes wishing the cost of an engraving of a new invention he has just patented, and adds, "I proposed taking my patent out through your office, but was advised to make my application direct to the Patent Office. How much trouble I have had, you may well know. I assure you I am heartily sick of *direct* applications, and shall in future do my business through your house." Mr. R.'s experience is the same as that of nearly all others who attempt to obtain patents on home-made papers, as our large business in re-preparing papers and prosecuting cases which have been refused by the Patent Office, bears testimony.

☞ Manufacturers of improved machinery of every kind, Steam, Mining, Agricultural, Wood Working, Manufacturing, will find it a great advantage to keep a short permanent advertisement in the SCIENTIFIC AMERICAN. This paper circulates extensively in all of the States, and doubtless is more thoroughly read by mechanical people than any other publication. Advertisements published in the SCIENTIFIC AMERICAN, costing only a small sum, have been known, in many instances, to bring back orders amounting to thousands of dollars.

EXTENSION NOTICES.

William Coleman and Stephen G. Coleman, of Providence, R. I., having petitioned for the extension of a patent granted to them the 15th day of March, 1853, for an improvement in supporting the topping-lift and peak-halyard block of sail vessels, for seven years from the expiration of said patent, which takes place on the 15th day of March, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 25th day of February next.

Robert Waddell, of Liverpool, Kingdom of Great Britain, having petitioned for the extension of a patent granted to him the 6th day of June, 1854, antedated to April 27th, 1853, and dated in England, the 2nd of March, 1853, for an improvement in balancing slide valves of steam engines, for seven years from the expiration of said patent, which takes place on the 27th day of April, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 18th day of February next.

James E. A. Gibbs, of "Steel's Tavern," Virginia, having petitioned for the extension of a patent granted to him the 21st day of February, 1860, for an improvement in design for a sewing machine, for seven years from the expiration of said patent, which takes place on the 21st day of February, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 11th day of February next.

Moses Marshall, of Lowell, Mass., having petitioned for the extension of a patent granted to him the 15th day of March, 1853, for an improvement in knitting machines, for seven years from the expiration of said patent, which take place on the 15th day of March, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 25th day of February next.

IMPORTANT LAW CASE—FIRE-PROOF SAFES.

WM. A. SANBORN vs. SILAS C. HERRING, ET. AL.

N. Y. Supreme Court—Before Judge Barnard and a Jury.

The facts in this case are briefly as follows.

The plaintiff in 1862, was an express and collecting agent and coal dealer in Sterling, Illinois, and in 1865 became a banker.

In March 1862 he bought of defendant's agent in Chicago one of their fire proof safes with a Banker's box inside at an entire cost of $300. The price of the box if sold separate would have been $35. The safe and box were sent to plaintiff at Sterling, and placed in his office, situated in a warehouse about one hundred feet from an inhabited dwelling, and by the side of a R. R. track. The warehouse was built of wood, and had a common wooden door, with glass windows without shutters.

On the night of August 27, 1865 the ware house was entered by burglars and the safe robbed, as plaintiff claims, of $26,405.

The inside box was about 1½ inches thick, made of three different kinds of metal, and secured by Hall's lock. The testimony of one of the burglars was taken, who swore that the safe and box were opened by the use of chisels, a hammer, a pick axe, a crow bar and sledge, as cars passed by. The sledge seems to have done the final work by driving in the spindle of the lock, thus giving access to the revolving tumblers.

The plaintiff brings this suit for the value of the contents, on the alleged ground, 1st, that the safe was warranted to him to be perfectly burglar-proof, and 2d, that as he made known his business, and that he wanted a secure safe, it was not as strong a safe as he ought to have had, and therefore that he had an implied as well as actual warranty and should recover his loss.

The defendants claim on their side that they never warrant safes perfectly burglar-proof, or that when exposed in warehouses or remote buildings where burglars can undisturbed use any tools or force they please, they will be secure, and that there was no direct or implied warranty in this case.

They also claim that the safe in question was one of their cheapest make and had on their cheapest lock—that plaintiff selected it from a stock of about 100 safes and took the lower priced and less secure safe after being shown the higher priced and more secure ones, on the ground that he did not wish to pay more than $300.

Further that he ought to have had one of their best safes and kept it in a more secure place, for the amount of money he had in it, and thereby he was negligent, not using ordinary care. Such in brief are the leading facts and claims of the parties, and each side made out a very good case.

The case has occupied the Court and Jury for a week, and the judge in an able charge, among other things submitted the question of warranty substantially as follows.

If there was a warranty it must have been one of these three kinds.

1st. That the safe was absolutely burglar-proof, so that no amount of force could under any circumstances open it. If you find this, there will be no damage for its breach, for there is no data to fix the damage. No safe can be made but what can be opened, and in this view you will find for defendants.

2nd. That the safe was the best one made by defendants, and if not, then you will find for plaintiff the difference in price between this safe and their best safe.

3rd. That the safe was as well made, and of as good material, and as capable of resisting burglars as safes of the class and price to which it belongs usually are; and if the safe in question did not come up to this, you will find for the plaintiff the difference in value between the two safes.

4th. You will find for the plaintiff the amount claimed by him in case you find that defendants falsely and fraudulently represented the safe to be their best when it was not; and that it would resist any and all attacks of burglars, knowing it would not, and that plaintiff believed such statements and was thereby induced to purchase the safe.

5th. The authority of the agent to sell the safe, carries with it the authority to warrant.

The jury being unable to agree were discharged.

For plaintiff, Judge Edmonds & Barlow & Hyatt.

For defendants, S. P. Nash & H. M. Needham.

The only case ever tried of a similar kind was brought by Walker, one of the principal jewelers of London, against Milner, the principal safe manufacturer. Walker's safe was robbed of some £5000 in jewels, and he brought the suit before the Queen's bench against Milner for their value, alleging a warranty. The case was tried about a year since, and found for the defendant.

The final result of this trial is looked for with interest, for in the language of the Judge "it involves millions of money, and the labor of thousands of men."

No man will buy safes if they furnish no security, and no man will make them if made liable for the contents.

Rights of Partial Assignee of a Patent to a Reissue.

IN May, 1863, Andrew Whitely, assignee of a sectional interest in a patent granted to Jonathan Haines, on the 4th September, 1855, applied to the Commissioner of Patents for a reissue of said patent, which was denied examination on the ground that the law did not authorize the Commissioner to grant a reissue to an assignee, unless said assignee held the entire right to the patent. Upon the application of Whitely the Supreme Court of the District of Columbia granted a peremptory mandamus, commanding the Commissioner to refer the case to the proper examiner; whereupon the case was appealed by the Commissioner to the United States Supreme Court, which will soon settle an important question, viz.: whether the assignee of a portion of a patent can surrender said patent and obtain a reissue.

Inventions Patented in England by Americans.

[Condensed from the "Journal of the Commissioners of Patents."]

PROVISIONAL PROTECTION FOR SIX MONTHS.

2,578.—HOISTING APPARATUS AND CARS FOR MINING PURPOSES.—George Williams Sterling, Colorado. Oct. 6th, 1866.

2,590.—ATMOSPHERIC ENGINES.—David Dick, Meadville, Pa. Oct. 8th, 1866.

2,594.—BRICK-MAKING MACHINES.—Antoine McNair, New York City. Oct. 8th, 1866.

2,626.—APPARATUS FOR OPENING AND CLEANING WOOL AND OTHER FIBROUS MATERIALS.—Charles G. Sargent, Graniteville, Mass. Oct. 11th, 1866.

2,630.—SEWING MACHINES.—Elias Howe, Jr., New York City. Oct. 11th, 1866.

2,666.—APPARATUS FOR TAPPING BEER CASKS AND OTHER LIKE VESSELS CONTAINING LIQUIDS UNDER PRESSURE.—Thomas Marsh, Central Falls, R. I. Oct. 16th, 1866.

2,674.—MANUFACTURE OF REFLECTORS.—William H. Winder, New York City. Oct. 16th, 1866.

2,704. TYPE SETTING MACHINE.—Augustus Corey and John McM. Harper, both of Philadelphia, Pa. Oct. 19th, 1866.

2,710.—POWER LOOMS.—Erastus B. Bigelon, Boston, Mass. Oct. 19th, 1866.

2,714.—MACHINERY FOR MAKING PINS AND NEEDLES.—Orin L. Hopson and Heman P. Brooks, Waterbury Ct. Oct. 20th, 1866.

2,720.—CONSTRUCTION AND ARRANGEMENT OF STEAM BOILERS, AND MEANS FOR COLLECTING SEDIMENT OR DEPOSIT THEREIN.—Joseph A. Miller, New York City. Oct. 22nd, 1866.

2,726.—FASTENING FOR BALING BANDS.—Robert Dillon, New York City. Oct. 22nd, 1866.

2,728.—PAPER MACHINE.—Richard Smith of Sherbrooke, C. E., and Oliver Ellsworth of Boston. Oct. 23rd, 1866.

2,754.—MANUFACTURE OF PLOUGHS.—Collins Company of Hartford Ct. Oct. 25th, 1866.

2,805.—CONSTRUCTION OF STEAM BOILERS.—Robert Bailey, Idaho City, Idaho. Oct. 30th, 1866.

2,898.—BRAKE FOR RAILWAY CARRIAGES.—Aaron Hickey, Joseph B. Birdsell and Varium O. Birdsell, all of South Bend, Indiana. Nov. 7th 1866.

2,900.—PROCESS FOR PRODUCING PICTURES, ORNAMENTAL DESIGNS, LETTERS, CHARACTERS OR FIGURES ON MARBLE AND OTHER CALCAREOUS STONES.—Asa Hill, Norwalk, Ct. Nov. 7th, 1866.

2,932.—INSTRUMENTS FOR TRANSMITTING TELEGRAMS BETWEEN REMOTE PLACES, ESPECIALLY ADAPTED FOR SUBMARINE AND SUBTERRANEAN LINES OF COMMUNICATION.—George Little, New York City. Nov. 10th, 1866.

2,974.—APPLICATION OF BEDSTEADS TO APARTMENTS.—Julia P. Brown Mass. Nov. 13th, 1866.