traction is indicated when the thermometer in the autumn the pulp presses; the ashes from under the boilers; the small months has, during several successive days, fallen as low as roots and rootlets from the root washer; and, finally, the dung A green corn company is erecting at Farmington, Me., a factory 100 feet 45 or 50 degrees of Fahrenheit's thermometer, and when con- of the animals fed upon the beet root pulp after the sugar sequently the first frosts may be anticipated. HARVESTING.-This is done with hand graips, or much bet-

ter with a mold-board or gridiron plow, the coulter of which has been removed.

The plants are taken up, well shaken, and laid in rows, with the roots pointed all one way. The tops, or collars, are been introduced into the Pennsylvania Legislature. It prothen cut off by means of a strong, heavy, sharp knife, which vides that within thirty days the Governor shall appoint one does the work by one stroke.

as to prevent vegetation or sprouting of new leaf buds during motive and low-pressure boilers, and shall keep a "lock-up" the winter months, which would develop themselves at the expense of the sugar. The roots must be cleaned, but without boilers ready for inspection when notified, and shall pay four excess, as a little dirt left on them will hurt them much less than rough handling and bruising.

The season for harvesting will vary from the beginning of September to the end of October, according to localities, seasons, and periods of sowing the seed. The later the harvest is gathered the more advantageous will it prove to be in the end to the manufacturer.

PRESERVATION.—The beginning of the beet root harvest and of sugar making for the campaign are simultaneous. The Pope says it is Heaven'd first law. But if he repairs the tool ! beets needed for immediate consumption, or for use within a soon as it is injured, whether wanted for use at the time or few days after the gathering, are laid in the open air in layers, not, he can be depended upon. A carpenter may be known which must not exceed three feet in thickness, and must be by his chips; but a workman at any business may be known frequently stirred if their sojourn is accidentally prolonged $\ensuremath{\mathsf{by}}$ the state of his tools. beyond this length of time.

The roots destined to be worked during the wintermonths must be preserved from frost, and are placed in long trenches dug in the ground near the factory buildings. These trenches are generally made about ten feet wide and seven and a six days in a year on the Nile delta. The viceroy, Mehemed half feet deep. Their bottoms have a gentle slope from each side toward the center, where longitudinal drains are dug out for the purpose of collecting any water which might percolate through the pile of beets. This water is carried off by a long, narrow ditch, dug at a lower level than the trench, and put into connection with it by means of drainage pipes.

The bottom of the trench is next covered with small poles or faggots, laid across so as to bridge the central drain, and the beet roots are carefully filled in, care being taken to leave air holes or chimneys (made by converging poles or boards) at distances of every twelve or fifteen feet. The beets are piled somewhat higher than the upper level of the trench.

As long as the weather remains fine, and no frost is apprehended, all that has to be done is to cover the upper surface of the beets with a few inches of straw, or dried leaves, in apt to induce heating and consequent fermentation and putrefaction.

As soon as the cold weather sets in, a portion of the earth dug up in making the trenches is placed in a layer of from this city, is the treasurer. 1 to 21 feet in thickness on the top of the covering of straw or dried leaves. This protection is only removed as the beets are needed for the supply of the works. One single thing has to be attended to during the winter, namely, to close the air holes or chimneys whenever the weather is frosty, and to open them on mild or rainy days.

PLACE IN ROTATION OF CROPS.-It is improvident, and bad farming to cultivate the beet root twice or more years in suc- than that needed for one of the old presses. cession on the same piece of land.

In Europe it is brought once only in a triennial or quadrennial system, this last being preferable as requiring the labor of only one manuring during a period of four years.

Here are examples of rotations such as we can conscientiously recommend :

	Í.
1st year	Beets, manured.
	Barley or oats.
3d "	Clover or sainfoin.
4th "	Wheat.
	Beets, manured.
	п
1st year	Beets. manured.
2d "	Wheat
3d "	Clover.
4th "	Rve or oats.
4th "	Beets, manured.
	111.
1st year	Potatoes, well manured.
24 "	Beets, not manured.
3d "	Wheat. [age crop.
4th "	Clover, hay, or some for-
5+1. ((D. I. I

Scientific American.

before maturation of seed, but the proper season for its ex- defecation; the pressed scums; the worn-out woolen sacks from has been manufactured therefrom.

Editorial Summary.

 $W{\ensuremath{\mbox{\scriptsize E}}}$ learn that a bill for the inspection of steam boilers has suitable person, to serve for three years, in each Congressional Care must be taken to "decapitate" the beet root fully, so district, as inspectors. They shall examine all except locoand now pressure bounds, and shall have their safety valve on each boiler. The owners shall have their solution of our readers, not for gratitious replies to questions of a purely boilers ready for inspection, and shall attach a low-water indicator, dollars for inspection, and shall attach a low-water indicator, and for as advertisemets at \$100 a time, under the head of "Business on Dersonal." connected with the steam whistle.

> WORKMEN AND THEIR TOOLS.—A good test of a good workman-one of the best apart from his workmanship-is his care of tools. If he leaves a worn out or dilapidated tool in its imperfect state until he gets time to put it into shape, he he lacks in the organ of order, which should be the shop's, as

EFFECT OF TREES ON CLIMATE .- The dryness of the Egyptian climate is such that rain is unknown in Upper Egypt, and in olden time it never rained oftener than five or Ali, caused twenty millions of trees to be planted on this delta; these have now attained their full size, and the number of rainy days has increased to forty annually. Such is the power which man can exert over nature in the matter of varying meteorological conditions.

A "New England Mechanics' and Art Association" has been organized at Boston, of which ex-Governor Bullock, of Worcester, Mass., is President. The circular before us, which we are requested to notice, does not give any information respecting the purposes of the association, but we should judge, from the number and character of the gentlemen who are its sponsors, that a good deal may be expected from it.

MONUMENT TO HUMBOLDT.—It is proposed by a number of our citizens to commemorate the centennial birthday of Humorder to protect them from the action of the sun, which is boldt by the erection of a monument to his memory, in the Central Park, at a cost of \$2,500. Subscriptions are solicited in behalf of this commendable undertaking by a committee of well-known gentlemen, of which Christian E. Detmold, of

> IMPROVED PRINTING MECHANISM.—One of Bullock's patent presses, at the Government printing office, Washington, attended by two persons, does the entire work which recently required for its execution no less than eighteen of the Adams presses, coupled with the labor of twenty persons. The steam power used to drive the Bullock press is not much greater

> INK FROM ELDER.-In a receipt for making ink from elder, on page 180, an incongruity has crept in. The sentence reading "add to 121 parts of the filtered juice one ounce of sulphate of iron," etc., should read, add to $12\frac{1}{2}$ ounces of the filtered juice one ounce of sulphate of iron, etc.

> A NEW chemical laboratory, just completed at the University of Leipsic, is the largest and most perfect, in regard to its internal arrangements, of any in Germany. The corner stone was laid in August, 1867, and the building was opened to students in last November.

> THERE are only seventy-five miles of rail remaining to be laid on the Pacific Railroad, and it is expected that a locomotive will run through to San Francisco early in the summer. The highest point on the road is 7,500 feet above the sea.

> WE are out of some of the back numbers of this volume. Subscribers who write for missing numbers will always be supplied when it is possible for us to do so. We make this statement to answer several applications.

WE are indebted to General H. A. Barnum, of Syracuse, N. Y., for a copy of Report of the Inspectors of State Prisons, for 1869, for which he will please accept our acknowledgments.

, Two millions of cattle are, upon the authority of Letheby, killed annually in South America for the fat skins and hones solely.

by 60 feet and three stories in hight.

There are 107 cabinet manufacturing establishments in New York city, employing in the aggregate 3,000 men.

The Philadelphia Water Works supply water to 959 manufacturing es tablishments.

Kansas has already600 miles of railroad in active operation.

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 in-formation from us; beside, as sometimes happens, we may prefer to ad-dress correspondents by mail.

All reference to back numbers should be by volume and page.

C. L. H., of Ohio.—An aqueous solution of gum-arabic is the best varnish for leaves and flowers.

W. S. S., of N. Y .- Your communication upon rat-proof buildings fails to explain how they should be constructed. In its present shape we cannot regard it in any other light than as an advertisement of a pat ent.

E. J. F. of Me.-An application of glycerin to the tubs will not injure the taste of butter, and the article is harmless. You can get it at the druggists.

L. O. B., of Ind., wishes to know a practical method of scouring wool oil containing petroleum, out of cloth or yarn. He says the yarn when this oil has been used, turns yellow afterstanding awhile, and nev er comes out as white as when pure lard oil has been used, and when he attempted to scour with lye or country soap, he could not get good re-Can anyof our correspondents give the desired information. sults.

33,000 lbs. raised one foot in one minute, is the work that average horses will perform steadily with suitable machinery. The best method of applying the power of a horse to propulsion of machinery is in our opinion, the endless chain horse power in common use if properly made and set with reference to the machinery to be driven.

J. Van O., of Pa.-We have practiced the following method for drying chlorine gas, with excellent results. Take of pumice stone a quantity of small fragments the size of a pea, soak them in strong sulphuric acid, then calcine them until acid fumes cease to be disengaged. These fragments are then re-saturated with sulphuric acid and inclosed in a tube through which the gas is passed in the ordinary manner of drying other gases. The sulphuric acid will seize the water contained in the gas the latter passing over in a dry state.

J. E. C., of Iowa.—When the same length of belt is to be used to give different speeds, the centers of the pulleys remaining equi-distant, the diameter of the driver must be increased as that of the driven is diminished, or *vice versa* and the speed of the circumference of both the driver and driven pulley will increase exactly as the diameter of the driver is increased. The number of revolutions made by the driven pulley will be to the number of revolutions made by the driver, as the diameter of the driven pulley is to that of the driver. Thus if the diameter of the driver be 4 and that of the driven 2, and the number of revolutions of the driver be 60, the proportion will be, 2:4::60:120 the number of revolutions made by the driven pulley.

- F. P. H., of Mass.-We know of no "water-proof glue" for uniting wood. Many recipes are published which assume to be waterproof, but we do not believe in any of them, as glues are dissolved in wa-ter, and of course water will re-dissolve them. India rubber (virgin) dissolved, 4 parts in 30 parts naphtha, or benzine, and 65 parts ground or powdered shellac melted in it make as near an approach to water-proof glue as anything we know. It will also nite metal and wood if the surfaces are clean. Moles worth, in his "Engineer's Pocket Book" gives the fol lowing: "For a glue to resist moisture, melt 1 lb. of glue in two quarts o skimmed milk. A strong glue, add powdered chalk to common glue. His marine glue is similar to that, the formula of which is given above. We cannot tell you where "machines for plaiting silk fishing lines" are to be obtained.
- J. S. C., of Pa.-We do not consider the question of the pre- cise instant when the gun receives the recoil of the explosion-whether at the time of ignition of the powder, or when the bullet leaves the bar rel, thus creating a vacuum-of sufficient value to occupy a space in our columns.
- H. A. S., of Me., says he saw in the SCIENTIFIC AMERICAN about two years ago a statement of the erection of a flour mill in New York, to hull the wheat before grinding. He asks "What became of it and why don't the owners advertise?
- S. W. H., and Bro., of Mo., say that they use an exhaust pipe of tin, four inches diameter, for leading their exhaust to a heater. It drops two feet from the engine cylinder, traverses ten feet horizontally, and then rises four feet to the heater. In starting the engine March 5th, the horizontal portion collapsed. "What" they ask "is the reason?" The only cause is the pressure of the atmosphere without. and a vacuum within the pipe. Probably an examination would show that the communication with the atmosphere was closed either by the action of the back pressure valve opening outward or by the water. Sheet tin is in any case a poor material for conducting steam.
- W. S. T., of N. H.-Number of feet traversed by minute of your little engine is 562; pressure, about 4 lbs.on piston, result less than one-sixteenth of one horse power.

Potat

MANURE AND FERTILIZERS .- In order to obtain a twentytun crop of beet root without impoverishing the soil on which it has been grown, we have to return to it the whole of the leaves which were cut off at the period of harvesting, and further, to add by means of farm-yard manure, and by other fertilizers, either natural or artificial, the following substances per acre in the quantities here given :

Nitrogen	747	pounds.
Sulphuric acid	45	- "
Phosphoric acid	166.5	6
Lime.		• 6
Potash1	,125	**

These figures, with a large allowance for waste and losses, will allow intelligent agriculturists to make their own cal. Pacific Railroad by the recent snow blockade. culations as regards the needed quantities of the manure they may choose to employ. Let us remark, in conclusion, that Michigan will be exhausted in 17 years. during the processes of making beet root sugar many very ing steam factory turning out 1,500 finished staves per day. valuable refuse, or so-called waste substances are produced,

MANUFACTURING, MINING, AND RAILROAD ITEMS.

The new American Print Works, at Fall River, Mass., are nearly finished, and are filling with machinery. The Mechanics' Mills, in the same town, are receiving machinery, and will commence running in about three months Theywill run 50,000 spindles, 1,200 looms, and will weave 13,000,000 yards of print cloths per annum.

A powerful steam saw mill on wheels is building at Worcester, Mass., It is to be moved about the country and used wherever wanted. The ma chine weighs twelve tuns.

Almost one thousand passengers were delayed along the line of the Unlor

It has been estimated that at present rates of cutting, the pine timber of

The Georgia White Oak Lumber Company have now in operation a float-

Part of a brewery at Morrisiana, N. Y., was crushedon Saturday by severall of which are of the highest value as fertilizers, and are althousand tuns of rock and earth falling upon itfrom a hill in the rear.

T.F.H., of Conn.-A good dark bronze dipis made by dissolving iron scales (scales from the forge) 1lb., arsenic 1 oz., zinc 1 oz. in 1 lb., muriatic acid; the zinc to be added to the solution just before using. The metal to receive it should be cleaned by diluted acid.

L. V. G., of Ohio.-For an ordinary foot lathe for wood or lightmetalwork, a wheel of iron from 30 to 36 inches diameter is suffi cient for a driver, weighing 150 to 175 lbs. The live spindle should run in brass composition or Babbitt metal.

APPLICATIONS FOR THE EXTENSION OF PATENTS.

BUOY FOR RAISING SUNKEN VESSELS .- Joseph C. Fuller, executor of the estate of Elisha Fitzgerald, deceased, has petitioned for the extension of the above patent. Day of hearing, May 31, 1869.

MACHINE FOR PEGGING BOOTS AND SHOES .- Alpheus C. Gallahue, of New York city, has petitioned for the extension of the above patent. Day of hearing, May 31, 1869.

MACHINE FOR MITERING PRINTERS' RULE-William McDonald, of Motris sania, N. Y., has applied for an extension of the above patent. Day of hearing, June 14.1869.

CARD EXHIBITOR .- Wright Duryea, of New York city, has applied for an extension of the above patent. Day of hearing May 31, 1869.

METHOD OF SECURING CUTTERS TO ROTARY DISKS .- Jonah Newton, of New York city, has applied for an extension of the above patent. Dayof hearing May 31, 1869

WATER METER.-Henry R. Worthington, of Greensburg, N. Y., has petitioned for an extension of the above patent. Day of hearing, June 28, 1869. MACHINE FOR PUNCHING METAL.-George Fowler, of Seymour, Conn., has 7, 1869.

Business and Lersonal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines. One Dollar and a Half per line will be charged.

India-rubber articles of every description for inventors and others, furnished by W. G. Vermilye, 6 Park Place, New York.

- W. Knight, M.D., of Demerara, British Guiana, wants to purchase paper-pulp machinery of the most approved construction. Address as above.
- and every way better than any others in the market. Address, for circulars, H. Moore, 41 Center st., New York, Manufacturer
- A Civil and Mechanical Engineer, having had 15 years experience, desires an engagement. Address Engineer, Crooks' Hotel, Chatham st., New York.

Manufacturers of stationary and portable engines please send circulars with lowest cash prices to S. Noyse, Lock Box 18, New Orleans.

Wanted-A small second-hand iron planer, either hand or power. AddressMelone & McCune, Mt. Gilead, Morrow county, Ohio.

The magnetic needle threader is sold by M. C. Munson, Washington, D. C., price 25 cents. It consists of a small horseshoe magnet, with grooves and perforations for the needle eye. An emery cushion and eye let point also attached.

For sale—The best propelling wheel for canal boats or boats of shallow or swift waters. Address H. T. Fenton, Waterst., Cleveland, O.

200 bars 1-in. octagon tool steel, best quality, for sale.-The lot at 14 cents per lb. Sweet, Barnes & Co., Syracuse, N. Y.

Rare chance for agents. D. L. Smith, Waterbury, Conn.

- The Tanite Emery Wheel.-For circulars of this superior wheel, address "Tanite Co.," Stroudsburgh, Pa.
- Money Plenty-To patent and introduce valuable inventions for an interest in them. National Patent Exchange, Buffalo, N.Y.
- H. C. Sandusky & Co., General Agents for the sale of patents. Rights, territory, and patented articles sold on commission, 12 Mill st. opposite Postoffice, Lexington, Ky.
- Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Ct.
- Mill-stone dressing diamond machine, simple, effective, and durable. Also, Glazier's diamonds. See advertisement.
- Keuffel & Esser's, 71 Nassau st., New York, the best place to get first-class drawing materials.
- Agency Wanted-by a responsible party, who has good store harness fastening. om. Best reference. C. E. Roberts, 138 Lincoln st., Boston, Mass.
- Saw Gummers, improved upsets, and other saw tools, manufactured by G. A. Prescott, Sandy Hill, N. Y. Send for a circular

Mechanical Draftsman Wanted-A thoroughly competent man, the cream. on iron-bridge work. Bring specimens and testimonials. Salary \$3 to \$4

- per day. J. H. Linville, 426 Walnut st., Philadelphia, Pa. Gear-cutting Engine for sale. A new machine with large in-
- dex table. Also, worm arrangement with full set change gear, accurately adjusted. Address Wm. M. Hawes & Co., Fall River, Mass.

One hundred horse power Corliss steam engine for sale in good order. Address W. B. Le Van, Machinist, 24th and Wood sts., Philadelphia.

- Etching on saw blades—A cheap and rapid process wanted, to cotton and other analogous matter for which it may be found applicable. take the place of stamping name, etc. Must be small and neat throughout, and duplicate of each other. Woodrough & McParlin, Cincinnati, Ohio
- "Broughton's" Oilers are the best. Manufactory 41 Center st.
- Inventors' and Manufacturers' Gazette-a journal of new inventions and manufactures. Profusely illustrated. March No. out. \$1 per year. Sample copies sent. Address Saltiel & Co., Postoffice box 448, or 37 Park Row, New York City.

The manufacture and introduction of sheet and cast metal small wares is made a specialty by J. H. White, Newark, N. J.

The Magic Comb will color gray hair a permanent black or brown. Sent by mail for \$125. Address Wm. Patton, Treasurer Magic Comb Co., Springfield, Mass.

For coppered iron castings address J. H. White, Newark, N. J.

by H. W. Johns, of this city, is the best substitute for tin or slate. It is cheap and easily applied.

Tempered steel spiral springs. John Chatillon, 91 and 93 Cliff st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Iron.-W. D. McGowan, iron broker, 73 Water st., Pittsburgh, Pa.

GIG SAW.-Isaiah B. Arthur, Sidonsburgh, Pa.-This invention has for its object a new and improved arrangement of the parts by which a gig saw is put in motion, whereby the machine is rendered easier of operation than heretotore.

Device for Converting Rotary into Receptocating Rectilinear MOTION.-Chas. F. Hadley, Chicopee, Mass.-The nature of this invention conpetitioned for the extension of the above patent. Day of hearing, June sists in the arrangement of means whereby a rotary may be converted into lates to improvements in grain-binding attachments for reaping machines, an even and continual reciprocating rectilinear motion, forming a substitute for the crank.

> MOP HEAD.-John Fahrney, Boonsboro, Md.-The object of this invention is to provide for public use a neat, simple, and durable mop head, to which the mop can be instantaneously attached without the necessity of stooping or touching it with the hands, even though the mop, at the time, be lying on the floor or in the wash tub.

> COMBINED WHIP SOCKET AND LINE HOLDER .- Joseph R. Finney, Youngs town, Ohio.-The object of this invention is to provide a neat, cheap, and and convenient device which shall serve both as a whip holder and rein holder, being attached, for that purpose, to any convenient part of the carriage.

FLEXIBLE HARROW .- Charles Lane and Jesse M. Healy, Jamestown, N. T.-This invention relates to a new harrow, which is composed of parallel bars, connected by means of jointed bolts so as to produce a flexible har-"Broughton's" Lubricators are more economical of oil, and row which will adapt itself to uneven ground much better than a solid or stiff harrow, and which will be easier handled, and occupy less room, when packed away, than the ordinary harrows now in use.

> TOILET MIRROR.-L. H. Rogers, Boston, Mass.-This invention relates to a new toilet mirror of that class, in which a portion can be swung out to reflect into the main mirror the reverse of the figure placed between the two and the invention consists in a novel manner of connecting the main with the reflecting mirror, whereby the latter can be swung any desired distance from the main mirror, and turned in any desired direction, or placed above the main mirror, as may be required.

> DOUBLE COOLER.-Judson Van Duzer, Otisville, N. T.-This invention re lates to a new cooler which can be used for two kinds of liquids at once, so that, for example, beer and water, or any other two kinds of liquor can, at the same time, be cooled therein. The invention consists in arranging around the main cylindrical ice and water receptacle, and within the outer shell, an annuler vessel, which is to contain the second kind of liquid, so as to keep it cool and fresh.

> POTATO MASHER.-William Zeiger, Elmore, Ohio.-This invention relates to a new device for mashing boiled potatoes, so that the same will be thoroughly and properly transformed into a pasty substance without any diffi-culty or inconvenience. The apparatus is a cylindrical shell, with a hoppershaped upper end; a grinder is arranged within the cylinder, carrying cutters in the hopper, stationary cutters being arranged in the latter. As the cylinder is turned, the potatoes will be cut into small pieces in the upper, and ground or mashed in the lower part of the vessel, so as to be discharged ugh a proper spout in the desired state. The stationary cutters are made removable, so that the whole apparatus can be taken apart for clean ing purposes.

> TEA-POT .- C. H. Reynolds and George Z. Clark, Croton Falls, N. Y .- The object of this invention is to provide means for removing the leaves of tea from the entrance to the spout of the teapot, and it consists in arranging a spring scraper in the inside of the pot.

> LIFTING JACK .- James Dampman, Lebanon, Pa.- This invention has for its object to furnish a simple convenient, and effective lifting jack, by means of which weights may be quickly and readily raised, and held till secured or made ready to be again lowered to their places.

> TRACE CARRIER .- James H. Harris, Vermont, Ill .- This invention relates to an attachment to harnesses for holding and carrying the traces or tugs when the team is detached from the wagon or carriage, and consists in a ring, which, in connection with a plate and hooks, forms a portion of the

> CHURN .- William M. Rumrill, Roanoke, Ind .- This invention has for its object to furnish an improved churn dasher, which shall be so constructed and arranged as to bring the butter quicker and in greater quantities than in ordinary churns, and at the same time gathering it as it is developed from

> THILL SHIFTER .-- S. Jennings, Patterson, N. Y .-- This invention has for its object to furnish an improved means of connecting the thills to the sleigh, which shall be strong, durable, and simple in construction, and at the same time so constructed that the thills may be shifted from a side to a central draft, or the contrary, with one hand, while the horse is attached or even while he is in motion.

> COTTON PRESS.-C. W. Millerd, Monticello, Ark.-The object of this inven tion is to provide a simple, effective, and easily operated press for baling

> FORMER FOR MAKING UPHOLSTERING CONE SPRINGS .- William A. Good ale, Colton, N. Y.—This invention has for its object to furnish an improved machine for forming orturning upholstering cone springs, which shall be simple in construction and effective in operation, forming the springs quickly and accurately.

> BUNG CUTTER .- Benjamin and Frederick Geyler, Cincinnati, Ohio .- This invention relates to improvements in cutter heads, whereby they may be readily adjusted to cut them of any desired size, and the cutting tools may be fed up to the work with facility.

> WELT KNIFE .- M. J. Ferren, Stoneham, Mass .- This invention relates to improvements in welt knives designed to provide an adjustable cutter which may be changed in its position, as may be required, and also be readily removed for sharpening or other purposes.

KNITTING MACHINE.-Wm. Franz and Wm. Pope, Christline, Ohio.-This invention relates to improvements in knitting machines, by which it is designed to provide a convenient and simple arrangement whereby a part of W. J. T.-We think the patent asbestos roofing manufactured the needles of a rotary knitting machine may be thrown out of action to admit of narrowing and widening for forming the heels and toes of stock-ings, or forknitting other flat fabrics or fabrics in strips, also an improved method of forming the heels and toes of stockings

> FASTENING FOR OPEN HORSE COLLARS .- Mr. John A.Meyer, Dutch Creek, Washington Co., Iowa, has invented a simple device for strengthing, keep ingin form and place, and fastening horse collars. It is a tempered steel spring encircling the collar, to be placed either inside the collar rim, or on the outside in the hames. The upper ends of the spring are formed into hooksforthereception of a strap or link when the collar is in use. The

PRINTERS' GALLEY.-Edwin Hutchins, Hartford, Conn.-This invention relates to improvements in printers' galleys, and consists in providing a rest for the same, whereby the bottom thereof will be presented to, and maintained in the same plane with the top of the table to receive the type.

GRAIN BINDING MACHINE.-G. B. Shafer, Delta, Ohio.-This invention rewhereby it is designed to provide an attachment, the moving parts of which may be operated from the driving gear of the reaper, to bind up the bundles of grain as they are delivered to it, and discharge them when so bound.

CORN PLANTER .- Daniel P. Leach, Franklin, Ind.-This invention has for its object to furnish a simple, cheap, effective, and accurate corn planter, which shall be so constructed and arranged that it may be easily adjusted to do its work, as the circumstances of the case may require.

NEW PUBLICATIONS.

PLANCHETTE; OR THE DESPAIR OF SCIENCE. Being a full Account of Modern Spiritualism, its Phenomena, and the various Theories regarding it. With a Survey of French Spiritualism. Boston: Roberts Brothers.

This, as its title tells, is a book devoted to the peculiar manifestations of present and past times, which have been called witchcraft, second sight, inspiration, possession, spirit manifestations, etc., etc. It contains an array of facts, the most inexplicable of any that have ever presented themselves to scientific investigation, with the opinions of various writers and thinkers upon the subject.

- HOW TO READ CHARACTER. A new Illustrated Hand-Book of Phrenology and Physiognomy, for Students and Exam-iners, with a Descriptive Chart. New York : S. R. Wells, publisher, 389 Broadway.
- TREATISE ON THE POWER OF WATER AS APPLIED TO DRIVE FLOUR MILLS, AND TO GIVE MOTION TO TURBINES AND OTHER HYDROSTALIC ENGINES. By Joseph Glynn, F.R.S., Member of the Institute of Civil Engineers of London, Third edition. Revised and Enlarged with numerous Il-lustrations. New York : D. Van Nostrand.

This is an eminently practical and useful little book to every one that needs any information upon the subject of which it treats

HANS BREITMANN'S PARTY. With other Ballads. By Chas. G. Leland.

A volume of these droll and sprightly laughter-provoking poems has been issued on heavy tinted paper, by T. B. Peterson & Brothers, Philadelphia. Price, seventy-flve cents.

Official List of Latents.

Issued by the United States Patent Office.

FOR THE WEEK ENDING MARCH 23, 1869.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT OFFICE FEES:
On each caveat
On filing each application for a Patent (seventeen years)
On issuing each original Patent due
On appeal to Commissioner of Patents
On application for Extension of Patent
On granting the Extension
On filing a Disclaimer
On an application for Design (three and a half years)
On an application for Design (seven years)\$15
On an application for design(fourteen years)
In addition to which there are some small revenue-stamp taxes. Residents
of Canada and Nova Scotia pay \$500 on application.

ing

A sketch from the model or drawing, relating to such portion of a machine as the Claim covers, from.....

upward, but usually at the price above named.

The full Specification of any patent issued since Nov. 20, 1866, at which time the Official Copies of Drawings of any patent issued since 1836, we can supply at

a reasonable cost, the price depending upon the amount of labor involved and the number of views. Full information, as to price of drawings, in each case, may be had by address

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88,002.—MANUFACTURE OF SHEET IRON.—George Atkins (as-signor to George W. Westerman, Robert Fox, and Robert May), Sharon Pa.

- ron, Pa. 3.—MANUFACTURE OF BREECH-PLATES FOR QUNS.—Wal-88.003.ter Baker, Ilion, N. Y. 88,004.—BREWING.—Edward Beanes, Cordwalles (near Maiden-
- head), Great Britain. 88,005.—AUTOMATIC BOILER FEEDER.—Julius Boden, Colum-
- a, Pa
- 88,006.—ELECTRO-HEATING APPARATUS.—W. Leigh Burton, Riehmond, Va. Antedated March 12, 1869. 88,007.—FIFTH-WHEEL FOR VEHICLES.—E. G. Cameron, Tif-Ohi
- fin, ohio. 008.—VALVE FOR BOTTOMS OF VESSELS.—Luther S. Chase and Zebina H. Chase, New Bedford, Mass.; said L. S. Chase assigns his right to Z. H. Chase. 88,008.
- 88,009.—HAY RAKER AND LOADER.—Robert Chestnut (as-signor to himself and George Kelley), Richmond, Ind. 88,010.—TRIPPING MECHANICAL DETENTS.—Stephen Chester,

New York city, and Charles T. Chester, Englewood, N. J. Antesated 88,011. Cooking Stove.—Orson E. Clark, Waterford, Mich.

- 88,012.—CONTRESTOVE.—OFSOT E. CIAR, Waterford, J. 88,012.—PROJECTILE.—Wm. A. Cobb, Orange, Mass.
 88,013.—ØAR.—Henry W. Connor, Troy, N. Y.
 88,014.—FLOUR SIFTER.—James Coyle, Boston, Mass.
 88,015.—LIFTING JACK.—James Dampman, Lebanon, Pa.
 89,016. Appendix Prop. Purpublic Methods and Prop. Purp 88,016.—APPARATUS FOR BUTTER MAKING.—Frederick P.
- Deuel, fecumseh, Mich. 88,017.—WRENCH.—L. R. Dexter, Whitefield, N. H.

BRANE .-- Stuart Gwynn, New York city.

88,018.-ROAD SCRAPER.-E. L. Dorsey, Winslow, Ind.

Mashininta hailan mahana tinu ana and manhana af ahaat matala	collarcan thus be fastened or unfastened instantly, without the use of strap	
Machinists, boiler makers, tinners, and workers of sheet metals read advertisement of Parker Brothers' Power Presses.	and buckle, and when the collar is removed the spring keeps it in shape, pre- venting the liability to break. It may be applied to collars now in use and	Wm. G. Douglas, Warrenton. Va. 88,020.—MOLD FOR CASTING PIPE.—Jacob Edson, Boston,
Diamond-pointed or edged tools for mining, working stone, or other hard substances. See advertisement, page 207.	can be made by any ordinaryblacksmith. Its cost is slight, but its advantages great. Those interested may address the patentee as above.	88,021.—BRIDLE BIT.—Alfred B. Ely, Newton, Mass. 88,022.—BOOK HOLDER.—Freeman Emmons, Danvers, Mass.
Winans' boiler powder, N. Y., removes and prevents incrustations without injury or foaming; 12 years in use. Beware of imitations.	has for its object to furnish a simple and convenient extension table which	88,023.—STRAW CUTTER.—Samuel F. Estell, Richmond, Ind. 88,024.—WELT KNIFE.—Myron J. Ferren, Stoneham, Mass. 88,025.—CULTIVATOR PLOW.—Simeon B. Forbes, Steuben-
The paper that meets the eye of all the leading manufacturers throughout the United States-The Boston Bulletin. \$4 a year	sired, and which will be firmly supported however much it maybe extended, and whether extended at one or both ends.	ville, Ohio. 88,026.—MACKEREL LATCH.—Charles S. H. Foster, Deer Isle, Me.
	GATEE.J. Wolfgang and J. W. Kenreigh, Salem, OhioThis invention	88,027.—KNITTING MACHINE.—William Franz and William
Becent Imerican and Soreign Latents.	has for its object to furnish a simple and convenient gate, which shall be o constructed and arranged that it may be easily and readily opened and	Pope, Crestline, Ohio. 88,028.—EXTENSION TABLE.—Lambert Freeman, New York
antents.	closed by those passing through, without being necessary for them to get out of the carriage.	88,029.—LAST MACHINE.—Roscoe R. Frohock, Boston, Mass. 88,030.—BUNG CUTTER.—Ben jamin Geyler and Frederick Gey-
Under this heading we shall publish weekly notes of some of the more prom- inent home and foreign patents.	REELS FOR HARVESTERS -J. R. Jones, Clarksville, IowaThis invention	ler, Cincinnati, Ohio. 88,031.—MAKING CONE SPRINGS.—William H. Goodale, Colton, V.
STOVEJohn H. Roelker, Evansville, IndThe object of this invention	ment whereby the beaters may be readily changed from one position to an- other for acting on the grain to straighten it or incline it to the right direc-	88,032.—FAUCET.—Daniel W. Green (assignor to William Brundage), Port Chester, N. Y.
is to improve the construction of cooking stoves in such a manner that when	tion, when it leans in any direction tending to make it cut disadvantag	88,033.—CIGAR AND CIGARETTE. — Thomas Griffin, Rox-
the "fire bottom" burns out and has to be thrown away, the whole of it	eously.	bury, Mass
need not be thus rendered useless, but the burnt portion can be removed	FLOUR SIFTER James Coyle, Boston, Mass This invention relates to	88,034.—CULTIVATOR. — Anthony Grohmann, South Sagi-
and another piece, of similar construction, substituted in its place, while	improvements in flour sifting apparatus, such as are used for sifting and	naw, Mich. 88.035.—MACHINE FOR CONSTRUCTING VEGETABLE MEM-
the hearth and other portions, not destroyed, remain undisturbed.	pulverizing the flour previous to cooking;	BRANEStuart Gwynn. New York city.