

Mr. Benjamin F. Sherman, of Ballston Spa, N. Y., has patented an improved hydrocarbon furnace, having the bottom of its combustion chamber made with a series of longitudinal pockets containing asbestos or analogous absorbent material, with perforated oil pipes embedded therein, and with alternating air chambers rising between said pockets and communicating below with the portion of the furnace corresponding to the ash pit, the said air chambers being perforated at the top and surmounted by inclined hoods or sheds which deflect the currents of air down upon the surface of the saturated asbestos.

Mr. Louis Graf, of Van Buren, Ark., has patented a process for producing colored photographs on linen or analogous material, which consists in the employment of a collodion mixture consisting, essentially, of distilled water, nitrate of silver, absolute alcohol, chloride of calcium, citric acid, and ordinary collodion.

An improved strap for baby chairs has been patented by Mrs. Mary W. Blacker, of Brentwood, N. Y. The invention consists in a waist belt having a forked strap attached to the front, which strap is connected with the belt by two side straps, which form loops for passing the baby's legs through, the belt being passed around the baby's waist and one of the rear rounds of the chair back, and then buckled, whereas the forked ends are fastened to the front legs of the chair. Further information may be obtained by addressing Mr. Frank E. Blacker, Brentwood, Suffolk Co., N. Y.

Mr. Frederic A. Weise, of Brooklyn, N. Y., has patented a glass mould designed more especially for making "fountain bottles" and the like, in which the glass may be more evenly or suitably distributed than in the present style of mould, and from which the bottle may be more easily and quickly removed.

An improvement in the class of planters having reciprocating seed slides, with which auxiliary devices are combined to assist in regulating the discharge of seed, has been patented by Mr. Leonhard Grieser, of Minonk, Ill. The invention consists, mainly, in the employment of a curved reciprocating block or bar, which is located in the hopper and attached to the seed slide, with which it reciprocates simultaneously, so as to alternately open and close one of its two adjacent openings, and thereby alternately permit and prevent the escape of seed through the openings.

Mr. W. I. Wooster, of Harvard, Ill., has patented an improved blind fastener and slat operator, which consists of a slotted strip of wood or metal fixed vertically on a side of the blind and connected with each blind slat, said strip of wood or metal being moved vertically to open or close the slats and to bolt the blind by means of a rod that passes through the window frame.

CONCRETE FENCE POST AND SILL.

The engraving represents a novel fence post, also a sill for plank walks and plank roads, recently patented by Mr. Andrew Climie, of Ann Arbor, Mich. These articles are made of concrete strengthened by iron rods. The process of manufacture is exceedingly simple, and may be successfully conducted by any ordinary laborer. The moulds in which the posts and sills are formed are made of wood and arranged to hold the iron parts in position until the concrete sets. In the post the iron rod extends lengthwise through the center, and is provided with branches which project laterally through the concrete and beyond the surface of the post to receive nuts for holding the fence boards or rails, the ends of the branches being screw-threaded for receiving nuts for this purpose. The posts are planted in the ground like ordinary fence posts. If desired, a top rail or cap may be secured to the top of the post by a nut on the end of the central rod.

The sills or ties for plank walks and roads are moulded in the same way, and are provided with screws or spikes for securing the planks in place. These posts and sills are practically indestructible, and afford a means of building good and durable fences and walks where timber is scarce. This combination of iron and concrete insures great strength and rigidity, and when the question of durability is considered this will undoubtedly be found much cheaper than other kinds of posts.

A Well that Needed Cleaning.

The following articles were taken from a well recently at Pollock, Missouri: Four wash pans, eleven half pint cups, two hats, four tin dippers, one brass tablespoon, one boot and one shoe, and one basket, one teacup and one saucer, two half gallon buckets, one piece of lightning rod. Evidently the family which had used that well was not lacking in small boys as well as general unthrift. Such a rubbish pit, however, might be a much less dangerous source of water

supply than many seemingly clean wells with cess pool connections.

NOVEL FOLDING STAND.

The folding stand shown in the annexed engraving was recently patented by Messrs. Freeborn & Chase, and is being largely manufactured by Mr. T. W. Freeborn, of Newport,



FREEBORN' FOLDING STAND.

R. I. It has been well introduced, and has received the indorsement of prominent hotel men and others who have adopted it. It is very simple and practical, consisting of cross legs pivoted to each other, the jointed arms hinged to the upper part of these legs, and a two-part top attached to the jointed arm so as to elevate the stand in the center when folded, and is provided with handles formed by openings on opposite sides of the line between the two parts of the top, so that one motion of the arm of the person using it can be closed or opened instantaneously. It is made into various articles of which the butler's stand is one of the most important. Perhaps the leading feature of the patent is the cutting board, which is appreciated not only by dressmakers and milliners, but by every woman who has her family sewing to do. It has a great advantage over the ordinary lap

NEW INVENTIONS.

Mr. Claude I. Wallis, of Memphis, Ala., has patented a simple and convenient pocket pen and brush for marking boxes, packages, etc. It consists of a tube or hollow handle containing an ink reservoir, a brush at one end of the handle inclosed in an elastic thimble, and in communication with the ink reservoir, and of a double-nibbed pen fixed in the opposite end of the handle from the brush.

A frog for timber chutes has been patented by Mr. Henry L. Day, of Truckee, Cal. The invention consists in attaching to the chute, at any convenient point, a frog, which consists of a long timber mortised obliquely into a timber of the chute, and of two or more shorter timbers, whose pointed ends may be entered into the ground, and whose larger ends rest on a cross piece that is set close against the chute in the angle made by the timber and the chute. It is stated that when other conditions are equal, this frog enables one to deliver in a given time one-third more logs than can be delivered by the old method of rolling them into the chute. Timber chutes are sometimes three or four miles long.

Simon J. Freeman, of New York City, has patented a fastener for meeting rails of sashes, so constructed as to fasten the sashes automatically as the sash is closed, which cannot be unfastened from the outer side of the window.

An apparatus for the manufacture of ice has been patented by Mr. Andrew J. Zilker, of Austin, Texas. The object of this invention is to provide means by which artificial ice may be detached from the moulds in unbroken blocks.

Mr. John R. Pafford, of Cuero, Texas, has patented a light, cheap, portable, and durable bed bottom, which can be fitted to any bedstead.

Mr. Horatio N. Bill, of Willimantic, Conn., has patented an improvement in fire kindlings and machine for manufacturing the same. The object of the invention is to make a cheap and readily-ignited kindling block.

Mr. Patrick W. Groom, of St. Louis, Mo., has patented an improved handle socket strap for shovels, spades, and scoops. The invention consists in combining a flanged socket with a recessed blade.

An improved gate has been patented by Mr. William H. Tobey, of Livonia, Mo. The invention consists in a gate having one or more of its lower rails made in two parts, correspondingly beveled where they meet between the braces, and one of them secured at its unbeveled end by a detachable pin.

An improvement in hame tugs has been patented by Mr. Jacob E. Moeller, of Centralia, Ill. This invention relates to that portion of carriage harness which is used for adjustably connecting the forward end of the trace with the hook or cockeye of the hames.

An improved seat lock has been patented by Mr. John L. Dolson, of Charlotte, Mich. The object of this invention is to furnish fasteners for the seats of spring wagons and other vehicles, so constructed as to hold the seats securely and allow them to be readily removed and adjusted.

Mr. Richard Ray, of Lake City, Fla., has patented an improved umbrella or sunshade, so constructed in the top or cover as to more effectually protect the person from the rays of the sun or from rain.

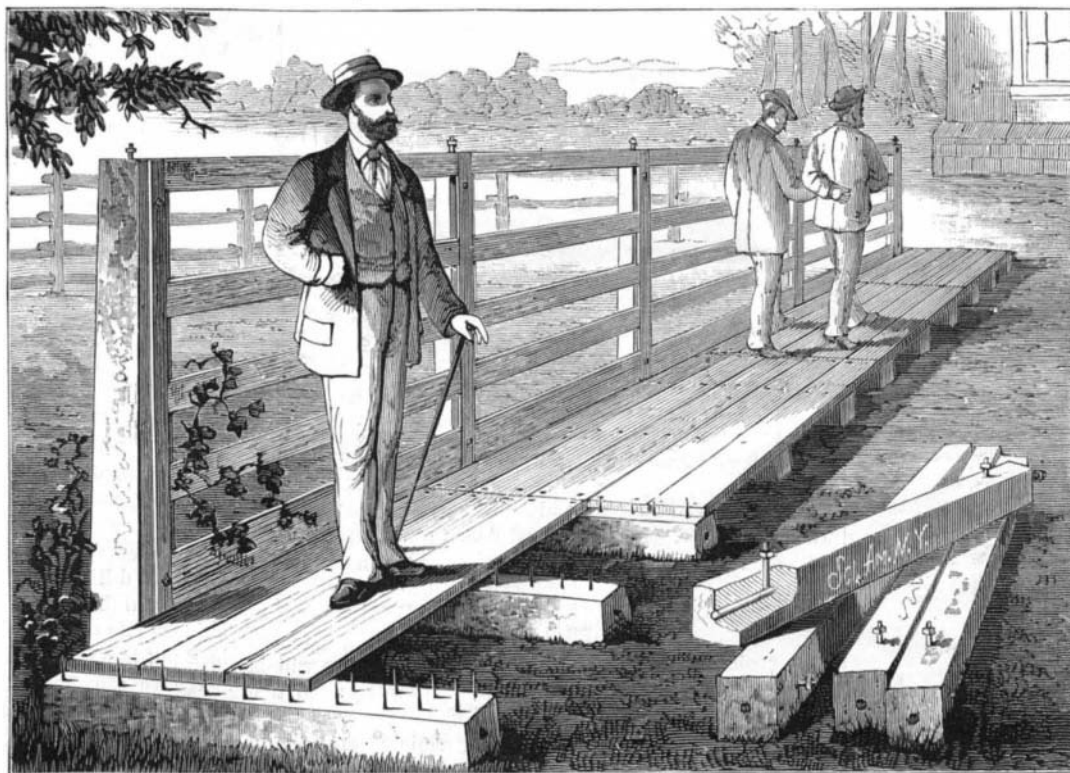
An improvement in umbrellas of that form in which some of the ribs are longer than the others, or in which the staff is connected eccentrically to the cover, to allow the person to occupy the center of shelter and be better protected from rain or the sun's rays, has been patented by Mr. Alexander H. Ege, of Mechanicsburg, Pa.

A compound rotary and reciprocating churn in which is employed a rotary dasher to whip the milk, in combination with a reciprocating dash to displace the liquid, so that the entire liquid contents of the churn may be quickly and continuously presented to the action of the rotary paddle or dash by the movement of the reciprocating dash, has been patented by Mr. Andrew Mearns, of Tolesborough, Ky.

Mr. Rhodes Arnold, of Walham, Mass., has patented a novel arrangement of the bridle rein, whereby the rider is enabled to exercise control over the animal without exerting great power and without extraordinary strain upon the rein itself.

An improvement in horse collar fastenings has been patented by Messrs. Ebenezer Fisher and John Watson, of Kincardine, Ontario, Canada. This invention relates to an improved fastening for metallic horse collars, more particularly for that for which the same inventors have received letters patent of the United States No. 224,671.

An improved form of mail bag for horseback routes, designed to facilitate the packing of mail matter therein and its removal therefrom, has been patented by Mr. Thomas J. Mayo, of Paintsville, Ky.



CLIMIE'S CONCRETE FENCE POST AND SILL.

board, as it can be left with the work on it without disarranging it. It also relieves the operator of all weight, and consequently entails no injury. It can be folded quickly when not desired for use. These stands are made up as chessboards and writing desks; they are also made in the form of a saddle rack, which is appreciated by those who have occasion to clean and dry harnesses.

The dotted lines in the engraving show the movement of the parts in folding. It is not often that a simple invention like this can be applied conveniently to so many useful purposes.

Further information may be obtained by addressing Mr. T. W. Freeborn, P. O. box 108, Newport, R. I.

Mr. Goldsborough Robinson, of Louisville, Ky., has patented a novel process and apparatus designed especially for drying leaf tobacco after saturation with alcohol for improving its color and quality, but applicable generally to the recovery of any volatile liquid which has been used in the treatment of another substance to which it adheres.

Mr. Ambrose Giraudat, of Neury, N. J., has patented a machine for cutting lace from paper to be used for ornamenting paper boxes, cigar boxes, and for other purposes.

Mr. Otis E. Drown, of Pawtucket, R. I., has patented an improved machine for breaking, rubbing, and stretching raw hide in the manufacture of leather for belting and lacing. This work has heretofore been done by winding the hides on shafts or drums while tension was applied by fixed bars between which the hides were stretched. The object of this invention is to facilitate the operation and permit regulation of the tension.

A cheap and simple device, especially designed for railroad cars, to be affixed to the outsides thereof for holding and protecting cards of address, etc., has been patented by Mr. Frederick G. Hunter, of Moncton, New Brunswick.

An improved gate has been patented by Mr. Arza B. Minton, of Philomath, Oregon. The invention relates to that class of farm gates which are operated by means of cords suspended from posts, and has for its object to furnish an improved mechanism for opening and closing the gates.

Mr. Joseph C. Fowler, of Arcola, Texas, has patented an improvement in running gear for wagons. The improvement relates to king bolts and coupling devices for connecting the forward axle of wagons, carriages, and other vehicles, and it consists in a king pin or bolt which passes from a socket in the bolster through braces and enters a socket in the top bar of the axle, where it is held by a cross pin, the bolt and braces thereby sustaining the weight. The lower end of the bolt is formed as a rounded bearing in a direction transversely of the vehicle, so that the forward wheels and axle may conform to the ground without effect on the wagon body.

Mr. Edward Seyfarth, of Lanark, Ill., has patented an improved ear piercer, so constructed that the puncture can be made exactly in the desired spot and so quickly as to be painless.

Mr. John B. Haskell, of Staunton, Va., has patented an improvement in the class of pails and cans which are constructed with hollow walls or in part of some material which is a bad conductor of heat for the purpose of preserving food for a considerable time at a temperature which is either above or below that of the surrounding atmosphere.

An improvement in pipe couplings has been patented by Messrs David B. Hand and Ephraim H. Reitzel, of Columbia, Pa. This invention particularly relates to a means for connecting the heating pipes between the cars of a railway train, but is also applicable to other purposes. It consists in a novel construction and arrangement of coupling devices, whereby provision is made for affording a universal motion to the pipes

Native American Minerals.

Professor R. Pumpelly, Special Census Agent, Newport, R. I., wishes to obtain information, for use in the forthcoming census report, in regard to the occurrence in the United States of the raw material from which the substances named in the appended list are obtained.

Any aid which our readers can give us, either by a list of the localities where the raw material of one or more of the substances named is found, or by a list of the persons or firms from whom we can obtain such information, will be thankfully received by Professor Pumpelly, at the above address. The substances referred to are:

Apatite,	Iron pyrites (for sulphuric acid),
Asbestos,	Kaolin,
Asphaltum (albertite),	Lithium,
Arsenic,	Manganese,
Antimony,	Molybdenum,
Bismuth,	Magnesia,
Borax,	Mica,
Chrome,	Nickel,
Cobalt,	Niter,
Corundum and Emery,	Serpentine,
Hydraulic cement,	Slate pencils,
Fluorspar,	Soda,
Feldspar (for potash),	Soapstone,
Grahamite,	Talc,
Graphite,	Tin,
Gypsum,	Wheatstone or novaculite,
Glass sand,	Wolfram or tungsten,
Infusorial earths,	Zinc.

Legal Recognition of the Nature of the Small Boy.

A Western railroad company was sued for damages on account of injuries to a small boy who was surreptitiously playing on a turn-table. The case was brought before the Kansas Supreme Court, which decided in favor of the plaintiff. The court said:

"Everybody knows that by nature and by instinct boys love to ride, and love to move by other means than their own locomotion. They will cling to the hind ends of moving wagons, ride upon swings and swinging gates, slide upon cellar doors and the rails of staircases, pull sleds up hill in order to ride down upon them on the snow, and even pay to ride upon imitation horse and imitation chariots swung around in a circle by means of steam or horse power. This last is very much like riding around in a circle upon a turn table. Now, everybody, knowing the nature and the instincts common to all boys, must act accordingly. No person has a right to leave, even on his own land, dangerous

machinery calculated to attract and entice boys to it, there to be injured, unless he first takes proper steps to guard against all danger; and any person who thus does leave dangerous machinery exposed, without first providing against all danger, is guilty of negligence."

CONVENIENT PORTABLE BATHING APPARATUS.

The annexed cuts, which we take from *La Nature*, represent a simple, practical, and compact shower bath, or hydro-



Fig. 1.—HYDRO-THERAPEUTIC APPARATUS IN OPERATION.

therapeutic apparatus, as the inventor, Mr. Gaston Bozérian, of Paris, names it. In Fig. 1 the apparatus is shown in operation, and in Fig. 2 is shown folded and packed for storage or transportation. A description of this operation is scarcely necessary, as the engraving fully illustrates it.

A traveler can take such a bathing apparatus with him and enjoy all the comforts afforded him at home or in city hotels. The apparatus can be adjusted to deliver water from above or from below, or from above and below at the same time, as shown. The ring can be adjusted according to the height of the person, for adults or children, and in the latter case a grown person can do the pumping. As can be seen, the apparatus can be taken apart and packed to occupy the



Fig. 2.—HYDRO-THERAPEUTIC APPARATUS PACKED.

space of a large tin pan, and can be readily stored away when not in use. It has a slatted floor to which the pumps, etc., are fastened. This floor is removed when the pan is cleaned.

ROPE JUMPING.

As cooler weather approaches the jumping rope will be more and more in the hands of girls. Properly used it is not an objectionable plaything. But children can not be too frequently cautioned against jumping against time or competing to see who can jump the greatest number of times without stopping. In an essay on popular customs on public health in the recently published annual report of the Department of Statistics of Indiana, Dr. J. W. Hervey, of Indianapolis, lays great stress on the danger of this practice. None, he says, is more injurious; and in illustration of its evil effects he mentions a case of real occurrence in that city. The patient, a girl of twelve years, was dead when he reached the house. He says: "On inquiry I learned that she had jumped the rope at school, a few days before, five hundred times. Think of five hundred rushes of blood upon the little heart in quick succession! No wonder I had to make the certificate of death, 'Emboli, or clot in the heart, caused by overheat and jumping straight up five hundred times.'"

Not only does this practice throw a great and sometimes killing strain upon the heart, but it often causes serious in-

jury to the joints of the knees and hips and to the spine. The muscular and nervous exhaustion, due to long continued jumping, must also be injurious.

To Tie the Cotton Crop.

About seventy-five thousand miles of hoop iron—enough for a three-fold girde around the earth—will be needed to bind the forthcoming cotton crop, if it reaches the number of bales predicted by statisticians, or 6,000,000 bales. The number of bands required is six to a bale, or 36,000,000 in all. They are of uniform size, 11 feet in length, and 1,200 weigh a ton. Hence there will be required 30,000 tons of hoop iron, with a total length of 396,000,000 feet. The cost of ties will be about \$3,000,000.

Correspondence.

A Light Road Locomotive Wanted.

To the Editor of the *Scientific American*:

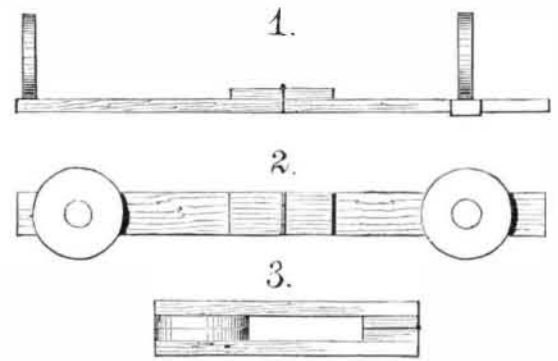
The bicycle, as now made, is a practical, and, to many, a valuable invention. Now, whoever will bring out a three-wheeled machine, that shall not weigh over two hundred pounds, that is driven by a neat, safe, and light motor, will not only realize a fortune, but confer a benefit on the race. We need a machine that can be started under full headway in five minutes or less from the time a match is ignited, that can run over our country roads as fast as ten miles per hour.

D. H. S.

Folding Telescope.

To the Editor of the *Scientific American*:

It is rather singular that the spy-glass described in your paper (No. 5, Vol. XLIII.) should not long since have come into general use, and that it should so long have been considered necessary to have the lenses inclosed in a case and with so small an aperture in the eye-piece as is generally used. I have made spy-glasses with but two lenses, by fitting the lenses into flat wooden disks and hinging them to a flat bar a little wider than the lenses, the bar being made of two pieces connected together by a hinge, so that they could be folded together with the lenses between them, thus:



But no good effect can be produced with lenses of short focus, as the greater the length of focus the greater will be the magnifying power; convex lenses of not less than forty inches focus producing the best effect, with concave lenses anywhere between nine and fourteen inches, and with an aperture of sufficient size to allow of being held at a short distance from the eye.

JAMES A. BAZIN.

Canton, Mass., July 27, 1880.

The Accident at the Hudson River Tunnel.

To the Editor of the *Scientific American*:

1. In your excellent paper of August 7, I find a diagram of the tunnel disaster (page 80) which differs some from other sketches, in that the break occurred at the commencement of the tunnel, while in other representations it occurred at the end of the air lock. Which is correct?

2. Why was the bottom of the air lock placed on a level with the top of the tunnel?

3. Why was the tunnel commenced thirty feet from the shaft?

Doubtless some good reason exists for the plan, and I, for one, would like to know what it is.

4. Could the accident have occurred if the tunnel had been built square out from the bottom of the shaft, and the air lock put in on the floor of the tunnel?

I have conversed with many practical Colorado miners, and none can give a reason for the peculiar manner in which the tunnel is started.

E. W.

Boulder, Col.

[ANSWER.—1. At the time of the accident it was not known exactly where the break first started; it was given to us, by Col. Haskins himself, as starting at the place shown in our diagram. 2. The location of the air lock was arbitrary; in the haste, after legal interferences, to test the compressed air system, it was placed where it now is—simply for convenience at the time. 3. The tunnel was commenced at the distance it now is for the reason that the limit of tests was reached; then the practical portion commenced. Col. Haskins says the New York end will be started as they are now arranging the New Jersey end—from a caisson with air locks from the top. 4. It is impossible to say if the accident could have occurred with the tunnel projected directly from the shaft, with the air lock at the bottom of the tunnel; but it is reasonable to suppose it would have been the strongest possible method.]