

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 outside 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

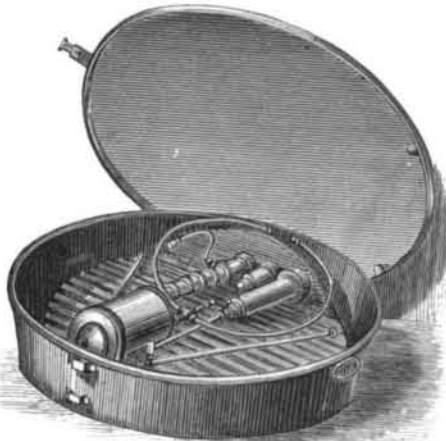


Fig. 2.—HYDRO-THERAPEUTIC APPARATUS PACKED.

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 girder 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*:

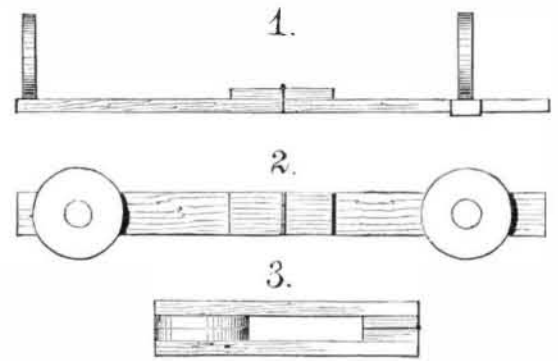
The bicycle, as now made, is a practical, and, to many, a valuable invention. Now, whoever will bring out a three-wheeled machine, that shall not weigh over two hundred pounds, that is driven by a neat, safe, and light motor, will not only realize a fortune, but confer a benefit on the race. We need 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.]