LEAK DETECTOR FOR PIPES.—Andrew H. Brown, New York City. This invention relates to an improvement on a former patented invention of the same inventor, by which the accumulating water actuates a valve so that an annunciator is sounded, the improvement providing for the continuous sounding of the alarm until the leak is repaired.

HEATING AND VENTILATING BUILDINGS.—Donald Andrews, Lockport, N. Y. Air passages are, by this invention, arranged in the walls of the building and connected at their lower ends with a fresh air passage led over coils of incased heating pipes, foul air discharge pipes being also arranged in the walls, and both passages being broken up by numerous small registers, to constantly remove vitiated air and supply pure heated air.

BAIL LOCK.—William Boyrer, New York City. This is a device designed for use on pots, kettles, etc., to hold the handle off the hot body part, and consists of a clamp adapted to clamp on one of the ears and a swinging arm pivoted on the clamp and adapted to engage the bail or handle.

BUCKLE CONNECTION.—Anthony Biesen, Merrill, Iowa. For connecting a buckle and strap this invention provides a plate having its two ends adapted to be bent parallel and clinched together, there being formed integral with the plate a loop or keeper for the free end of the strap, making a strong and cheap way for connecting a buckle and strap without doubling the strap and sewing or riveting it.

HORSESHOE.—Thomas L. Tipton, Jerusalem, Ohio. This invention relates to what are styled "rolling horseshoes," used on the front feet of fast horses, and is made to turn both down and up at the heel, with a slight bevel outward on top from the heel nails back to the point or ends of the heel, to provide for the widening of the hoof's heel ends.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

SCIENTIFIC AMERICAN

BUILDING EDITION.

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3. Plans and perspective view of a carriage house erected at South Orange, N. J., at a cost of $2,700 complete. H. H. Holly, Esq., architect, New York.
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Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will oear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

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Minerals sent for examination should be distinctly marked or labeled.

(2827) Amateur asks: 1. What tools or instruments are needed in the finding or searching for minerals of any kind? A. The daimond drill is used for prospecting on the large scale. A mineralogist for field work needs a hammer and chisel. See our SUPPLEMENT, Nos. 200 and 453. 2. Where is the nearest place to look for minerals, in this vicinity? That is for specimens for a collection. A. Bergen Hill: where any blasting is in progress is a good place. You will find most minerals in the metamorphic and primitive rocks. On Staten Island in the serpentine localities, good specimens are often found. See SUPPLEMENT, Nos. 344, 349, and 363. 3. What are the names and properties of the inclosed minerals? A. No. 1 is slag from some furnace or crucible. No. 2 is gypsum. No. 3 is agate. The U. S. Geological Survey may be addressed on the subject of mineral localities. Good works on mineralogy always give localities. Dana's "Mineralogy" is the *sine qua non* for American collectors. We can supply it for $10. Dana's "Manual" and "Text Book" are $2 and $3.50 respectively.

(2828) W. A. M. asks: At what height must I cut a tree off, the height of which is 58 feet, so that the stump will form the perpendicular and the top the hypotenuse of a right-angled triangle, the base of which is 30 feet? A. Let x=altitude and y= hypotenuse of triangle. Then by the conditions of the problem we have: $x+y=58$ (1) $y^2-x^2=30^2$ (2) $\therefore x=58-y$. Substituting this value of x in equation (2) we have $y^2-(58-y)^2=900$.

Reducing, $116y=4264$
$y=36{\cdot}76$ feet
$x=21{\cdot}24$ "

Or the tree must be cut 21·24 feet from the ground.

(2829) J. G. asks: 1. Please say how many cables there are laid from Great Britain to America? A. See for full account of transatlantic cables our SUPPLEMENT, No. 747. 2. How long is it supposed to take after you telegraph the first word of a message before it is received, from the nearest point of this side of the Atlantic to the other? A. About three seconds is given as the time of transmission of an electric impulse.

(2830) J. F. F. asks how horn comb manufacturers flatten or straighten cow horns, so that dampness will not curl them. A. All manipulation of horn in the way of bending is done by heat and pressure. When bent or straightened hot and kept in shape until cool, dampness will have little or no effect on it. Hot water may be used as the heating agent.

(2831) J. E. R. asks for the manufacture of what is known as celluloid collars and cuffs. A. Celluloid collars and cuffs are rolled, stamped or pressed into shape while warm. The exact details of the process are not published. A muslin backing may be used to give grain. The rolls, etc., are kept hot by steam, gas flame, or otherwise. The main portion is a sheet of celluloid charged with zinc oxide.

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