## THE FAIRMOUNT PARK BEAR PITS

The bears cooped up in the dirty and narrow cages, in the temporary quarters provided for the animals in our Central Park, have good cause to envy their brothers of the Philadelphia Zëological Society's collection. The unfortunate brutes in the first mentioned menagerie, are dependent upon public enterprize, and doubtless will die as they have lived, in their confined bozes, unless some unwonted celeri ly in our city officials results in the establishment of the proposed zöological grounds, at a much earlier date than now seems probable. The Philadelphia bears are, however, the happy property of a society of private individuals, who rapidly pushed forward their undertaking from its be ginning, until, in July last, it assumed a nearly completed shape, and the public were admitted to examine a collection of animals, which, in course of time, it is hoped will rival that of the renowned Zëological Gardens of London.
Our illustration, extracted from the pages of the Fancier's Journal, published in Philadelphia, represents the bear pits in the grounds of the Philadelphia society; and between such commodious quarters as are here depicted and the ordinary menagerie cage, the difference need hardly be pointed out. The structure is strongly built of pointed stone work, iron, and cement floors; and in the center of each pit is erected a very strong cedar pole, on the summit of which the bears perch as if enjoging the view of the surrounding scenery.

The pit nearest the foreground of our engraving contains a fine grizzly, purchased in Omaha. Pit No. 2 serves as a dwelling for three brown, one black, and one, cinnamon bears, al young and notyet full grown. A pair of black bears, male and female, inhabit the third pit. The entire building was planned with much skil by Mr. C. P. Chandler, and serves greatly to add to the comfort of the animals, as well as to main tain them in healthy condition. The beauty of the surroundings, as well'as the artistic appear ance of the structure itself, is well represented in the picture.

## | Quick Telegraphing.

Several instances ef quick telegraphing have been brought under our notice of late, but the following shows the perfection to which the cable telegraph service has been brought. A message was sent from New York to London, and in thir ty minutes, actual time, the answer was received in New York. Another dispatch was sent to London, to which a repls was received in thirty. five minutes, actual time. In neither of these instances was any special effort made to hurry the answers, but the party addressed sent the reply to the London office by the messenger delivering the original message.
To fully appreciate this wonderful achievement, we must consider that the distance from New York to the cable station at Heart's Content, N.F., is about 1,300 miles, that of tue cru..- from Valentia to London about 300 more. Each message, therefore, was transmitted about 3,600 miles, and passed through the hands of eighteen persons, all told; consequently, the message and reply, in each case, passed through the hands of thirty-six persons and traveled over 7,000 miles in thirty to thirty-five minutes.-The Telegraphic Jour. nal.

## MILK COOLING CAN.

This is an ingenious device for cooling milk during transportation. The car is provided with an ice chamber, which

a suitably covered with non-conducting material, and the oottom of which is slightly inclined so as to keep the ice which is placed therein in contact with the main vessel. Recesses in this bottom conduct the water through a perforation to an annular receptacle, A, formed by soldering a sheet metal strip of suitable shape around the can. One end of this channel is closed so that the water is obliged to pass zround the entire circumference to be drawn off bya faucet
at a point opposite that of its entrance. In this manner the full cooling capacity of the ice water is utilized without increasing to any large degree the bulk or cost of the cans. Patented through the Scientific American Patent Agency, June 23, 1874 , by Mr George W Fluke, of Mount Pleasant Henry county, Iowa.

Stuttering.
Stuttering frequently disappears for the time in whisper-

Engineering Two Thousand Years Ago.
Perhaps some of the most remarkable remains of ancient ngineering are those which were discovered by excavations made some ten or twelve years since, a short distance from Rome, and near the ruins of the ancient city of Alatri. This city was surrounded by massive walls, and located on a mountain, or elevated point, and ill provided with water About 150 years before Christ, as we learn from a Roman inscription, an immense aqueduct was built to bring water from a neighboring mountain better supplied with that element. We are furthermore told that this aqueduct was 340 feet high, supported upon arches and provided with strong pipes. The topography of the country, moreover, as sures us that the water supply could not have been conducted into the city, even over such high supports, except by pipes-an inverted aiphon-the lowest point of which must have been some 340 feet below the point of delivery or under a pressure of at least ten atmospheres, 150 lbs. per square inch.
The excavations already alluded to show that the aqueduct must have been of large size, as the piers of the arches are not less than 5 fee 9 inches in breadth, while the total length of the siphon must have been between four and five miles. The question naturally arises: How, and of what material, was this syphon built? As iron pipes of large dimensions, if of any di mensions at all, were not known at that era, w can look only to masonry or woodwork for the material of such construction. Possibly a clue has been found to the mode of their construc tion by a subsequent discovery, near the same locality, of a field, supposed to have been the site of an ancient parade ground near this onc walled city of Alatri. A complete system of underground drainage has been revealed at a depth of about 7 feet below the surface of the field, effected by a well constructed system of pipes made of fire clay, each about 18 inches in diameter. It is possible that such a pipe, of larger dimensions, and strengthened on its ex terior by a strong and massive bulwark of ma sonry, may have been the means of conveying the water into the city. But however that end might have been attained, the work was cer tainly a most wonderful feat of engineering considering the condition of the mechanic arts of that early day. The excavations and dis coveries thus brought to light, and so fully con firming the truth of the ancient inscription were conducted by order of the present Pope and under the immediate supervision of the well known Italian scientist, Father Secchi.Iron.

## LIGHTS FOR GREENHOUSES

J. L. N. publishes, in the English Mechanic, an account of a novel mode of fitting lights in greenhouses and forcing frames, which facilitates the transmission, removal, and putting together of horticultural buildings. It consists in ma king the lights in two or more rows for the roof of a greenhouse, each light being capable of being raised, and, if ne cessary, turned over or removed, by means of a hinge joint, one part of which is fixed to the framing of the roof or the one part of which is fixed to the framing of the roof or the
garden frame, and the other to the light, the connection begarden frame, and the other to the light, the connection be-
ing made by a removable pin. Iron "set-opens" are ating made by a removable pin. Iron "set-opens" are attached to each light, to keep it open to any required degree
and these being connected by suitable gearing, all the lights n a house can be opened simultaneously.


Fig. 1 is a section of a well known and very useful horticultural appliance, showing the light partly open, and also, by the dotted lines, how it may be thrown completely over when required. Figs. 2 and 3 represent top and side views of the hinge, as applied to greenhouse roofs, by which it will be seen that the lights may be thrown over completely, removed altogether, or partially opened, with the minimum

