

Scientific American.

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY

At No. 37 Park-row (Park Building), New York.

O. D. MUNN, S. H. WALES, A. E. BEACH.

TERMS—Two Dollars per annum.—One Dollar in advance, and the remainder in six months.

Single copies of the paper are on sale at the office of publication, and at all the periodical stores in the United States and Canada. Sampson Low, Son & Co., the American Booksellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the SCIENTIFIC AMERICAN. See Prospectus on last page. No Traveling Agents employed.

VOL. II., No. 24.....[NEW SERIES.]....Fifteenth Year.

NEW YORK, SATURDAY, JUNE 9, 1860.

LIBERAL PRIZES OFFERED FOR LAMP IMPROVEMENTS.



WE present, herewith, the design of an antique lamp, which resembles the modern gravy dish now so common on our tables. We have no account of any mechanical

contrivance of more ancient date than this for burning oil; and even as concerns this, the facts as to who was its original inventor, and what country had the honor of his birth, are mysteries which probably no Layard or Rawlinson will ever bring to light. That it did good service in its day and generation, no one can doubt; and its inventor—could his name be known—would be entitled to an honorable association with those who have won distinction in the fields of invention. The ancients were accustomed to ornament this species of lamp with a great variety of artistic designs; apart from this, it possesses no merit (except that of age) above the lamp now used by the Esquimaux to light his snow hut. The old English kitchen-lamp was the next improvement upon the antique. The beak was removed from the body of the lamp, and a tube was attached, extending some distance from it, in order to prevent the shadow cast by the flame from interfering with its illuminating power.

No great advance was made towards improving the oil lamp till 1789, when a Frenchman—Aimé Argand—took a step in the right direction and made an improvement which bears his name. He employed two metallic cylinders, one within the other; the space between them containing a cylindrical wick and a quantity of oil. The oil vessels surrounds the burner at some distance, and supplies this annular space by a tube. He also employed a chimney for exciting an artificial draft. This lamp is now so well known that a more minute description is not necessary. There is an immense variety of lamps now in use, and great ingenuity has been displayed in the application to them of physical and chemical laws. Since the improvement of Argand a great many inventions have been made for burning fish and lard oils; but of late years, or since the introduction of camphene and other burning fluids, and especially coal and cotton seed oils, inventive genius has been turned to the best contrivances for burning the latter class of oils, and the number of patents is legion. Several of these patents have been a source of great profit to their projectors. It seems, however, that the current of invention is about to be turned once more to whale oil, as will be seen by reference to an advertisement published in another column. A committee headed by Hon. Joseph Grinnell, and composed of the most respectable merchants of New Bedford (Mass.)—a place famous for the extent of its whale fisheries—are resolved not to yield to the rapid encroachments made upon their cherished interests by the introduction of new illuminating agents. There are whales enough in the sea, and there are ships and men enough to go out and capture them; but something more is wanted to give importance to the business, viz., the inventor; for with all our boasted natural advantages, no one is more necessary to their proper development; and the pecuniary inducement held forth in the advertisement alluded to is one step taken on the right road to success. It will be seen that the offered prizes amount to \$4,500, and should (as we doubt not they will) attract the attention and stimulate the inventive genius of many of our readers. The time for receiving the improvements which will be offered in competition for the prizes

is set down for August 30th; and it is one of the conditions of the award, that the improvements be secured by Letters Patent. In this connection we volunteer a single word of advice to those who enter this "ring," to contend for the "champion's belt" in bloodless strife. Keep a careful record of your experiments by sketches and descriptions; and make oath to the date of your inventions; so that, in case conflicting questions about the right of priority should arise, you will be able to prove your date without the need of an attorney's services to worm out the facts in the case. Inventors are oftentimes—indeed they are generally—quite careless in this respect, and sometimes lose valuable patents for want of evidence to support their claims, which could have readily been prepared at the very time when the invention was first made.

A WORD TO OUR FRIENDS

The reader of the daily or weekly newspaper seldom takes into consideration the vast expenditure of time money and mental labor required to render it a success—indeed, these things can only be fully known to those upon whom falls the responsibility of their management. The sheet of paper which you now hold in your hand, before receiving the printed impression, costs only a trifle; but the aggregate cost of the paper for one edition of this journal, issued weekly, during one year, is nearly \$30,000. The reader may infer from this that, when we undertook the enlargement of the SCIENTIFIC AMERICAN, one year ago, we did not enter upon it without considerable hesitation and anxiety for the future. The enlargement once made, there was no retreat; all we had to do then, as the soldier would say, was to "face the music." At that time we saw the certainty of a large increase in our expenditure, with no positive knowledge that our subscription list would increase in a ratio corresponding to the outlay.

We have now had a fair trial of our project throughout one year; our readers also, have had a chance to judge of the value of our exertions in their behalf; and hence, it is to them that we now address a few words. We are glad to say that, although our expenses during the past year have exceeded (by several thousands of dollars) the amount that we had anticipated, yet we consider ourselves well paid for this vastly increased outlay. We never worked harder in our lives to please our readers, and have never before expended so much time and money upon the paper as during the year past. These facts are fully evidenced by the greatly increased amount of original matter which we have published since the enlarged series commenced. The Editor-in-chief has had the constant aid of able assistants; and since the 1st of January, Judge Mason has frequently contributed able and valuable articles upon patents and patent law questions, in which our readers are more or less interested. Not only this, but we have had special reports of such transactions of scientific and mechanical societies as have transpired during the year, and which we believed would interest our readers.

On the first of July next we shall begin a new volume (the third of the "New Series") with unabated zeal. We feel our personal responsibility to our readers, and although a little relaxation from our heavy cares is very grateful, yet the "chair editorial" is seldom vacant. We cannot without doing injustice to our readers, transfer the responsibility of this position to other hands. Whether upon the rail-car or the steamboat, or at our post of duty, the interests of the SCIENTIFIC AMERICAN are never far from us. We have committed ourselves to the work of developing and pushing forward the prosperity of our common country—north, south, east, and west; and we intend to "keep on the harness," believing in the sound maxim that "it is better to wear out than to rust out." Our labors are not unappreciated; and we are grateful to our readers for it. We also owe many thanks to our courteous cotemporaries, all over the Union, for many friendly notices which have helped our circulation very materially, we doubt not.

The SCIENTIFIC AMERICAN has now a solid, influential circulation of about thirty thousand copies per week; besides a very large exchange list. In addition to this, the proprietors of this journal have under their charge the most extensive Patent Agency in the world. The advantages of this department to the journal are apparent—it draws from all sources the fruits of American and European genius, which are weekly illustrated in its

columns; thus enabling us to spread out before our readers a complete original summary of the progress of invention and discovery. In direct connection with the paper and the Patent Department, 25 persons are employed in the capacity of editors, specification-writers and draughtsmen; while the printing and clerical force of the office numbers 22 persons. With this large and efficient force we shall enter upon the sixteenth year of our labors in connection with this journal; and we rely confidently upon our friends to sustain us. We commend to them the perusal of our new prospectus, published in another column, and we hope they will all endeavor, as heretofore, to enlarge the list of our subscribers.

OBJECTS OF INTEREST IN THE CENTRAL PARK.

One of the best places in the world to study geology is among the rocks of the Central Park in this city. One leaf in the record of the unmeasured ages is there laid open for the perusal of all who have learned the language in which it is written. The rocks which are in process of formation at the present time are of various kinds—lava which is being thrown out from volcanoes, deltas which are being formed at the mouths of rivers, salts which are being thrown-up by boiling springs, and sediment which is being deposited at the bottoms of lakes and seas. The last is in progress on by far the most extensive scale, and it constitutes the principal portion of all modern rocks, and indeed of all rocks, old and new. The modern formations occur in beds of very various extent, from the sediment which lines the bottom of a duck pond to the telegraphic plateau which stretches from the coast of Newfoundland to that of Ireland, and this is the case with the formations of all ages.

In all cases the rocks upon which the modern formations rest (and which of course must have been formed previously) are of somewhat different character from those which are now being deposited. In some of these the strata are horizontal, and in others they are bent and inclined at all angles by the tremendous power of the internal fires of the earth which heaved up the mountains from the bottom of the sea. In some cases the modern formations lie flat upon the sides of the earlier rocks, and in others they rest upon their upturned edges, and of course it is easy, by observing their positions in relation to each other, to determine the relative periods of their deposit.

The modern alluvial rocks are full of organic remains; and as we go down in the series we find the species, both of plants and animals, becoming less and less numerous, and less like the plants and animals now living upon the earth. The lowest rocks of all—such as granite—contain no organic remains, nor are they stratified, but they have a homogeneous crystalline structure. First above these primary rocks is a class of rocks the structure of which is both stratified and crystalline; and it is the general opinion of geologists that they were first deposited beneath the water, and then crystallized by the action of the heat. This change in their form has given them the name of metamorphic rocks. It is to this class of rocks that the very coarse gneiss (or stratified granite) of the Central Park belongs; therefore it is one of the earliest pages in the geological record, and it would weary the imagination to attempt to conceive of the immense period which has passed away since this formation was slowly deposited in successive layers on the bottom of the sea.

The mineralogist, too, will find the Central Park a fine field for exploration. The crystals of the gneiss are so large that fine specimens of mica, quartz and feldspar may be obtained, and some portions of the rock are almost filled with garnets.

We learn that the old arsenal in the park is to be appropriated to the use of the Lyceum of Natural History; and when these naturalists get their cabinet opened, the student will find it easy to turn from his shelves and books, and apply his lessons directly to the interpretation of nature. In this connection we have much pleasure in stating that a zoological society, composed of the most active men of our city, has been formed for the purpose of gathering at the great Central Park a superb collection of living animals and birds. This project ought not to fail, as its success will insure the existence of one of the most attractive features appertaining to this gigantic enterprise.

A few months ago the municipal authorities of Hamburg, in Germany, offered to forward a number of swans