

THE LONDON EXHIBITION.

On another page will be found a letter from our special correspondent, Mr. J. E. Holmes, about the London Exhibition. The following courteous and candid extracts are from the *London Mechanics' Magazine*. They corroborate the modest but conscientious views of our special correspondent on the utilitarian character of the articles in

THE AMERICAN DEPARTMENT.

The display of American products at the great Exhibition would, no doubt, have been greater but for the present unhappy conflict in that country. As it is, the American court is well worth a visit, and deserves a careful study. Scientific men will recognize in the varied and useful inventions which are there exhibited simplicity of construction and beauty of workmanship, and the unscientific will see much to admire in the appliances by which labor is made easy and toil pleasant. American "notions" are intensely utilitarian. Increased production at the smallest expense of labor is their maxim. Many of the machines here exhibited are adapted to field and farm labor, and it is no disparagement of our eminent agricultural engineers to say, that in regard to these implements the Americans have been able to hold their own, and maintain their position against all competitors.

On entering the court, which is at the southeast corner of the building, Wood's mowing and reaping machines occupy a prominent position. These are exhibited by Mr. Cranston, of King William street, and have attained a large sale in England as well as in America. During the last eight years 30,000 of them have been manufactured, 2,500 of which have been sold in England. It is at present set up as a reaper, but can be easily changed to a mower by removing the reel and platform. A self-acting rake can be adjusted to the reaper, which will deliver the cut grain in bundles at the side.

Here is also the mowing machine which gained the first prize at the Royal Agricultural Society's show at Leeds, last year. Apart from the ingenious construction of this machine, it really merits inspection for the beautiful style and finish of its workmanship. Notwithstanding the sneers of some finical and fastidious critics about this Exhibition being a huge puff and a vast advertising mart, we rather take it to be a school where all may learn much from each other. Our artisans and mechanics will get many a useful hint by comparing the workmanship of the various articles exhibited, and may emulate the excellence displayed by others without anything derogatory to themselves. These and other kindred machines are producing a wondrous change on the slow, rude forms of agricultural labor. The application of science to farming is making the land more productive.

Let the visitor walk straight across from these machines and inspect some hay and manure forks manufactured by Batcheller and Sons, and exhibited by Messrs. Smith, of Doncaster. These forks look more like elegant toys than implements for laborious work. They are made of the best American cast-steel, with two, three and four oval prongs, and are remarkable for lightness, strength and elasticity. They are about half the weight of an ordinary English fork, maintain their perfect shape till worn out, and enable the laborer to do his work with ease and rapidity. They are the most perfect agricultural instruments we ever saw.

In a case adjoining these are exhibited coopers' axes, chopping axes, and adzes, from the Douglas Axe Company, Massachusetts. These tools are of beautiful shape and finish; the steel is of the finest temper, and as specimens of American cutlery will, we think, be unsurpassed by anything of the kind in the Exhibition.

Drake's boring and spacing machine is exhibited by Mr. Wemple, of Albany, N. Y., and is a novel and very useful invention for boring blind stiles, or any other wood-work where a series of holes are required at equal distances apart, doing the work with great accuracy, and saving the labor of spacing and laying it out. The machine, though having the appearance of being complicated, is really very simple and effective, doing its work, which otherwise would be tedious, with great rapidity and precision.

On passing Ward's ocean marine telegraph we found him in the midst of a circle of inquiring visitors who were taking a lively interest in his invention.

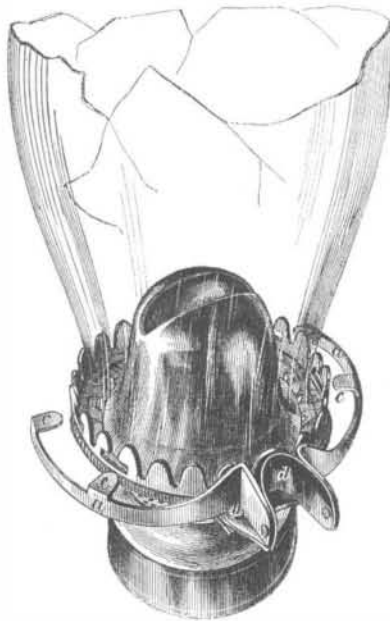
Mr. Beardsley, of Otsego county, N. Y., exhibits two machines of a very American-like appearance, which have attracted considerable attention in that country. The hay elevator is intended for unloading hay into the barn or on to the stack. The two arms move on a pivot, and are made to clutch the hay by tightening the chain. A trip hook is put into the ring of the chain, or to unload by horse power, a sheaved block is attached to the ridge and another on to the floor where the horses are hitched, and as they walk off on to the ground, up goes the fork with one-third of a wagon-load at once.

The earth elevator, by the same inventor, is on a similar principle. It is meant chiefly for drain cutting and ditching, and has the same object in view, rapid working and the saving of hard labor. For making embankments or draining on a large scale we think the machine merits attention.

We shall return again to this court, and would recommend those to visit it who are looking for the useful more than for the showy. There are some things here which will yet make themselves known in the old world as well as the new.

JACOBS'S MODE OF SECURING CHIMNEYS TO LAMPS.

The immense production of coal and rock oils has



so reduced the price as to lead to their extensive use in place of other substances for generating light, and as they are burned entirely in lamps, an enormous demand for these has sprung up; leading manufacturers and others to put forth great efforts to improve the article. Already many patents have been taken, and some of the inventions have proved exceedingly profitable. The most profitable of any that has come to our knowledge is a plan for holding the chimney in place by a spring, which not only facilitated the taking off and putting on of the chimney, but by the yielding of the spring prevented the chimney from being broken as it expands by the heat. One of the officers of a lamp manufacturing company told us that their company were paying the inventor \$300 per month for the right to use this little improvement. The plan which we here illustrate holds the chimney by a spring, but by peculiar, novel and convenient arrangements, which enable the chimney to be removed or replaced with great facility. It will be readily understood by a glance at the engravings almost without a description.

Two fingers, *a a*, are secured to the lamp top by pivots, *b*, which enter ears formed for the purpose upon the lamp top. The fingers, *a a*, have projections, *c c*, formed upon their inner edges, to pass through slots in the lamp top and catch over the rim upon the lower edge of the chimney. The short arms of the fingers, *a a*, which extend outward from the pivots are flattened so as to be readily grasped by the thumb and finger, and they are pressed apart by a curved spring, *d*, which forces the fingers inward, carrying the projections, *c c*, through their slots and securing the chimney in its place. When it is desired to remove the chimney, the outer arms of the fingers,

a a, are grasped by the thumb and finger of the operator and with the other hand the chimney is taken off. The chimney can thus be kept in a vertical position, preventing it from being soiled by the smoke or broken by the heat of the flame.

The patent for this invention was granted May 13, 1862, and further information in relation to it may be obtained by addressing the inventor, Thomas T. Jacobs, at Mount Carroll, Ill.

ADAMAS—SOAPSTONE.

We have had several inquiries recently in relation to the supposed new material which has received the name of Adamas, and respecting which we published some information, taken from the *London Artizan*, on page 340 of our present volume. This substance is simply soapstone under a new name. The *Artizan* states that it has lately come into very general use for gas burners. On page 124, Vol. XIII, SCIENTIFIC AMERICAN (old series), we gave a full description of the mode of making such gas burners. The *Artizan*, however, does describe a new application of it, namely, for journal boxes of machinery as a substitute for Babbitt metal. As very many of our present readers have not access to the former volume containing the description of the mode of treating soapstone and making it into gas burners and taps, we republish it because the information is very useful.

The soapstone is first cut into small slabs of such a size as will accord with the articles that are to be made of it. These small slabs are now put into iron boxes hermetically sealed, and placed in a low fire where they are heated very gently at first and then gradually raised to a red heat. They are now cooled very slowly by withdrawing the iron boxes from the fire and covering them with dry warm sand or ashes from the fire. (An annealing oven will answer the same purpose.) When perfectly cool these annealed soapstone slabs can easily be turned into the desired form in a lathe, after which they are boiled in oil until they acquire a deep brown color. When taken out of the oil and dried they take a beautiful polish by simply rubbing them with a woolen rag. The inventor of these gas burners is Mr. Schwartz, of Neuremberg, Germany. They were recommended by Prof. Liebig, and by the SCIENTIFIC AMERICAN, five years ago.

The *London Artizan* states that Mr. Leoni makes his gas burners, &c., of soapstone dust, molded into the desired form, then annealed. No description of the method of giving the dust cohesion has been published. Soapstone dust has been used to some extent for twenty years as an anti-friction agent in journal boxes, and soapstone rollers are used in the dressing frames of New England cotton factories.

A SAFE GUNPOWDER.

G. B. Wiesling, Esq., a civil engineer, at present residing at Van Nest Gap, in New Jersey, has invented a gunpowder of novel composition, which possesses some extraordinary and valuable properties. If ignited in an unconfined mass or in an open keg, it burns without an explosion, while if thoroughly secured by tamping, it explodes with as much force as ordinary gunpowder.

Mr. Wiesling has used this powder extensively in his large operations in the Van Nest Gap tunnel on the Warren Railroad—he being one of the contractors for this work, and having had the practical direction of it during the eight years in which it has been prosecuted.

A patent for the powder has been applied for through the Scientific American Patent Agency, and has been allowed by the Department, though the papers are not yet issued. By varying the proportions of the ingredients a powder is produced which is explosive under all circumstances, and this property may be varied to any extent desired. Besides its safety, the inventor says that this powder may be sold for half a dollar a keg less than ordinary blasting powder.

KNOWLEDGE is power, saith the familiar adage. Let him who would possess both knowledge and power become a constant, faithful reader of the SCIENTIFIC AMERICAN. This will infallibly enlighten the intellect, quicken the perceptions, and inspire a new interest in all that is good and useful. Remember, that a new volume commences next week, and do not fail to send in your name as a subscriber.