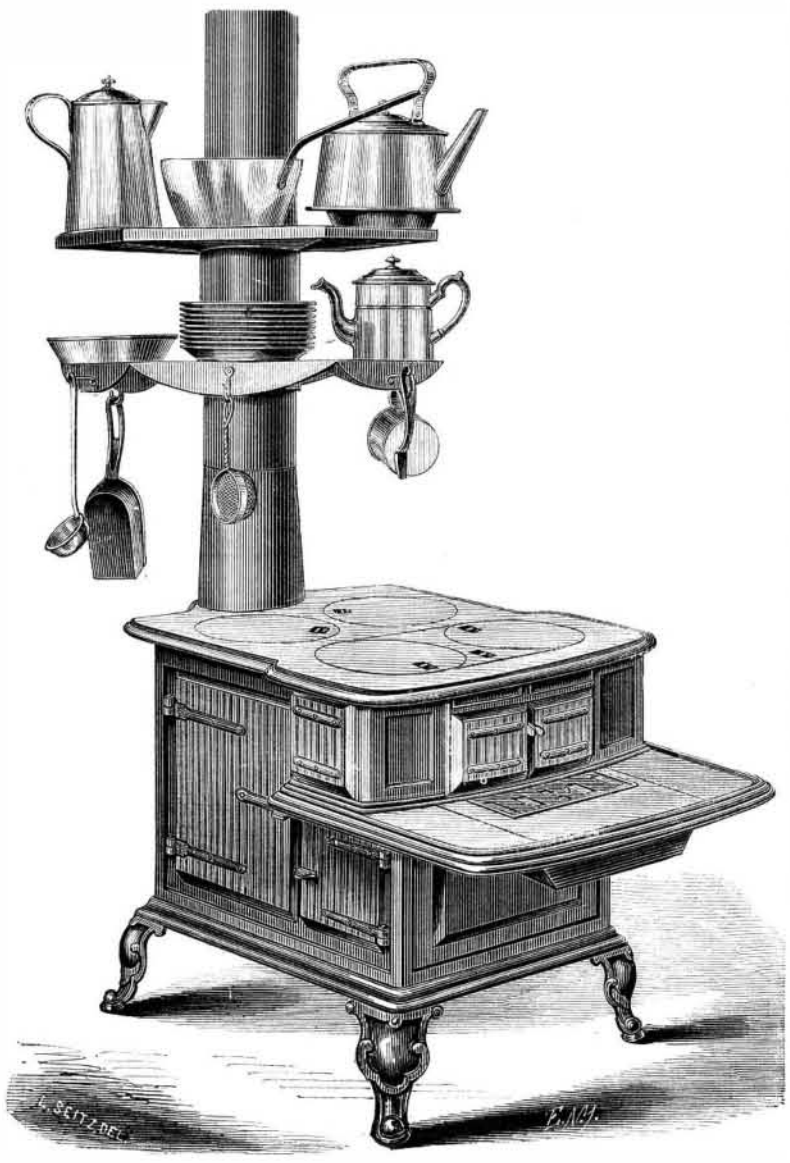
Convenient Appendage to the Cooking Stove.

The device represented in the engraving is intended for the convenience of the cook, and appears well adapted to save many unnecessary steps and much time now wasted. The engraving very plainly shows its construction and appearance when in use. It is simply a series of shelves arranged around the stove funnel within easy reach of the cook, and designed to hold cooking utensils, table ware, and stove implements. A cast-iron ring, either whole or in parts, is attached to the pipe by rivets or other means, and fastened and resting on it are several annular plates which can be rotated. To these the shelves are secured, which may be made sufficiently strong to support any weight it may be desirable to place upon them, although they may be further supported and strengthened by braces. The shelves may be circular, polygonal, or of any form desired, and may be furnished with hooks for suspending such articles as skimmers, shovels, etc. The advantages of this device are sufficiently obvious.

It was patented July 23, 1867, by John Turner, who may be addressed relative thereto at Marshalltown, Iowa.



TURNER'S STOVEPIPE SHELF.

The Lucimeter.

The various ways of measuring the quantity or intensity of light have always been a matter of paramount interest to philosophers. The earliest contrivance, and certainly an excellent one, due to Count Rumford, consisted in intercepting the light received from a given source, by means of a certain number of plates of dulled glass; the smaller the number required to make the light disappear, the smaller, of course, was its intensity. This was called a photometer. Others have since been constructed on various principles, but they are not generally applicable to one of the commonest problems that occurs in trade —viz., measuring the quality of burning oils by their illuminating power. This, *Galignani* informs us, has now been satisfactorily accomplished by M. Guérard Deslauriers, whose apparatus, which he calls a "lucimeter," consists of two constant-pressure lamps, and a photometer constructed on a new principle. Its shape is triangular; it is made of sheet iron painted black, and varnished, and is divided into two equal compartments. The latter are turned toward the lamps; the observer stands on the opposite side, which presents nothing but a flat vertical surface pierced with a hole bisected by the partition. Each of the two lamps is so placed as to transmit its light to one only of the two compartments, and exactly to the part where the hole is. The latter is covered with a piece of transparent paper on which, therefore, the rays of light from the two lamps are contiguously depicted. If their intensity is the same, the eye of the observer will perceive no difference; if there be any, on the contrary, one of the lamps must be brought nearer or removed further off, until the same intensity be obtained. The difference of distance will then mark the relative qualities of the two oils; which, combined with the quantity burnt in a certain time, is sufficient to determine their marketable value.—*Mechanics' Magazine.*

Improved Implement for Cleaning Boiler Tubes.

The brooms of corn, or wire frequently employed to remove the depositions in the interior of tubes or smoke flues in steam boilers soon wear, and refuse to support the weight of the head and its appendages. Something more rigid and self supporting seems to be needed. In the flues of a horizontal boiler the ordinary brush bears mainly on the lower interior surface of the flue; the upper surface, on which the unconsumed portions of the products of combustion are so readily deposited, are rarely thoroughly cleaned.

The implement shown in the engraving is composed of three or more segmental disks, the arms of which are springs. The blades, A, are in this case quarter circles, each with a projecting lip, B, curved on its outer edge to facilitate its entrance to the tube or flue. These blades are made of steel, spring tempered, and twisted as seen in the engraving, so as to yield readily in two directions. They are made of such a size as to overlap each other, their united edges thus forming an entire circle. It will be understood that the spring of the blades allows them to pass readily all irregularities, as rivet heads, and at the same time to bear against the entire surface of the interior.

Letters patent were obtained for this device, through the Scientific American Patent Agency, Dec. 18, 1866. Van Auken and Blanchard, manufacturers, Binghamton, N. Y., may be addressed for the article, or any further information desired.

VAN AUKEN'S DEVICE FOR CLEANING BOILER TUBES.

Turning the Bearings of Crank Shafts.

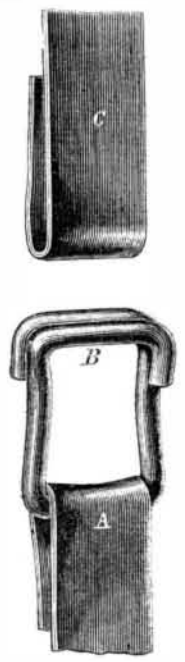
In an account in *Engineering*, of the Society of Engineers' late visit to the far-famed works of John Penn & Son, at Greenwich, occurs the following description of a machine for shaping heavy crank shafts, and turning the crank journals:

It consists of a massive bed—somewhat of a T form in plan —on which the heaviest crank shafts can be secured either transversely or longitudinally. This bed carries a large headstock, in which an annular casting revolves, being driven by suitable gearing. This casting, which is about 6 feet in diameter inside, is furnished with a pair of radial slides, to which tool-holders are fitted, these slides being arranged so that the tools can be set either radially or parallel to the axis of the revolving casting. The exterior of the revolving casting has a V formed on it, one side of this V fitting against a correspondingly shaped surface on the inner side of the headstock, and the other side bearing against a ring which can be adjusted to take up any looseness caused by wear. The headstock has a self-acting, traversing motion along the bedplate, in the direction of its axis, and the tool-holders have also a feed motion on the radial slides of the revolving casting. The manner in which a crank shaft is finished by this machine is as follows: The main body of the shaft is first turned in a lathe in the ordinary way, this being done to facilitate the setting of the work on the machine we have been describing. In this machine the throws of the crank are planed or shaped, and the openings of the cranks cut out, the crank journals or joint being also finished. For effecting the first of those operations, the shaft is placed on the bed of the machine transversely, so that one of the throws stands vertically opposite the headstock, the center line of the shaft being at right angles to the center line of the latter. This being done, the tools carried by the revolving ring or casting plane the surface of the throw by taking a series of circular cuts over it.

The cutting out of the cranks, and the finishing of the crank pins is effected by placing the shaft through the hollow headstock, and adjusting it so that its center line is parallel with, and on the same level as, the axis of the latter, and is distant from it horizontally by the amount of throw of the crank. At the same time, the headstock is brought so that it surrounds the crank to be cut, and the tools, carried by the casting revolving within the headstock, are thus enabled both to cut the opening in the crank, and, when this has been done, to finish the crank pin. One crank having been finished in this way, the work is shifted until the other crank is brought within the headstock. It will thus be seen that the process of cutting out the cranks and finishing the crank pin is just the reverse of turning, the work remaining stationary, and the tools traveling round it. When such heavy masses as large marine engine crank shafts have to be dealt with, it is much more convenient to treat them in this way than to chuck them in a lathe; and in fact, in the case of the largest shafts, it would be almost impossible to finish them by the ordinary process of turning. The consequence is, that these "hollow lathes," as they are sometimes called, are being gradually introduced in most large marine engine works, particularly on the Continent, where they are, probably, more generally known than they are in this country.

TRUMAN'S PATENT COTTON BALE TIE.

It having been shown that iron bands are greatly superior to rope for baling cotton, their use has become quite general, the main difficulty being to procure a handy, convenient, and inexpensive link or tie for securing the two ends of the iron band, and one which will allow the band to be doubled to the required length before insertion in the tie. It is inconvenient to pass the band through a solid ring or a tie punched from a plate and then bend it, the rigidity of the band often preventing it from being thoroughly tightened. If the bearings of the tie where the band passes through are edged or not round, the band under heavy strain may be cut. Furthermore the tie should be complete in itself with no loose parts to be lost or misplaced. Such seems to be the one illustrated in the engraving.



It is simply a bent iron rod and may be likened to a "sister hook" used on shipboard. The loop, A, of the band is passed through the space between the two ends of the hook, B, when it is turned and the loop, C, passed through in a similar manner. The rounding corners of the hook or tie facilitate this operation and when once fastened the square ends hold the band securely.

This tie is certainly cheap, can be easily and rapidly manufactured either by hand or machinery, is readily attached, and sufficiently strong to withstand any strain required. Patented through the Scientific American Patent Agency, Sept. 24, 1867.

All inquiries relative to the device should be addressed to to J. W. Truman, Key Box 21, Macon, Ga. See advertisement.

The Egyptian Lotus.

Mr. William Barr, of Bovina, Warren Co., Miss., says that the Egyptian lotus is to be found abundantly in the lakes of Louisiana and Mississippi. "A beautiful specimen was brought to me during the past summer from a lake on Big Black swamp in this county, the leaf of which was fully two-and-a-half feet in diameter, with a deep, cup-shaped cavity. It bears the largest flowers of any plant grown naturally in this country, with the exception of the *Magnolia Macrophylla.* Barlow, in his *Compendium Florœ*, Philadelphia, 1818, speaks of it as being within ten miles of Philadelphia."

In our issue of October 5th, we published a communication stating that the lotus was to be found in the waters of the Southern and Western States. An old tradition represents that eaters of the lotus forgot all that they had experienced —in fact that wakeful memory was annihilated—and on this Tennyson based one of his most beautiful poems, the *Lotos Eaters.* He uses, as *dramatis personæ*, a company of Greek warriors returning, as Ulysses in Homer's *Odyssey*, from the siege of Troy, cast on an island inhabited by the lotus eaters. He says these lotus eaters, finding the shipwrecked mariners, gave them the lotus to eat.

Branches they bore of that enchanted stem,
Laden with flower and fruit, whereof they gave
To each, but whoso did receive of them,
And taste, to him the gushing of the wave
Far, far away, did seem to mourn and rave
On alien shores; and if his fellow spake,
His voice was thin, as voices from the grave;
And deep asleep he seemed, yet all awake,
And music in his ears his beating heart did make.

They sat them down upon the yellow sand,
Between the sun and moon upon the shore;
And sweet it was to dream of Fatherland,
Of child, and wife, and slave; but evermore
Most weary seemed the sea, weary the oar,
Weary the wandering fields of barren foam.
Then some one said, "We will return no more;"
And all at once they sang, "Our island home
Is far beyond the wave; we will no longer roam."

We doubt the statement made by the imaginative poet, and that which tradition brings us; but there are so many varieties of this plant that it is difficult to determine which was meant in the *Odyssey*, or Tennyson's *Lotos Eaters*, as the statements seem to refer to some narcotic plant which may be only the poppy. A shrub in Africa bears berries which taste like dates, and is called the lotus. Another in Barbary bears a very rich fruit. In the interior of Africa, Mungo Park found a large tree called the lotus, which bore berries having a delicious taste, that, when pounded and exposed to the sun in cakes, made a delicious food. The *Nelumbium Speciosum*, or Egyptian lotus, is an aquatic plant, regarded sacred in the Egyptian theology, and also so regarded in India. What the uses may be of the variety found in this country we are unable to say.