barrels placed to receive it. Tar is a product, where charcoal is the chief object of the process, but is seldom obtained in quantities sufficient to render it an object to collect it, except in charring the resinous woods of the pine family. In Sweden, where the business is also an important one, some peculiar methods are adopted to increase the yield of tar in wood. Trees of no value for the saw-mill are partially peeled of their bark a fathom or two up from the ground, not enough to kill them, but only to check their growth. After five or six years, when cut down, the wood is found to be much richer in resinous matters which produce tar. It is noticed that the condition of the weather during the process of charring may make a difference of 15 or 20 per cent. in the yield of tar. In the United States tar is produced in almost all parts of the country where pitch pine and the pinus australis are found. Along the coast of the Southern States, especially of North Carolina, Virginia, and Georgia, the business has been carried on upon a large scale in connection with the manufacture of turpentine, rosin, and pitch. Old trees, which have ceased to produce turpentine, and dead wood which is rich in resincus matter, are selected for the coal pits. The process does not materially differ from that already described.-American Encyclopædia.

SHOT MAKING IN NEW YORK.

One of the most interesting manufactures which this busy city of ours presents to the inquiring mind is that of shot-making, of which most people have no other idea than an indistinct one of a huge and lofty tower through which melted lead falls into a water-pit at the bottom.

A visit to the establishment of the New York Lead Co. on Centre Street, will disclose all the details of this interesting process. The brick tower is something less than 200 feet in height and about 60 or 70 in circumference. At the bottom is a well of cold water, and the summit is entirely devoted to the melting machinery-the pan or sieve through which the shot falls being situated in the centre and quite small, say a foot and a half in diameter. The lead is conveyed to the summit in pigs or bars, and there melted. Before being poured into the pan it is slightly mixed with crude arsenic, to prevent oxidation. Much of the lead, in passing through the holes of the sieve, comes out in elongated drops, in the same way as the dripping of water, thus causing imperfect shot, which are increased by the soft shot touching each other in falling, and adhering together.

Standing on the ground floor of the tower, the shot can be seen and heard falling and hissing into the well beneath, the water of which is splashed up high as it receives the driving, seething rain.

From the well, the shot is transferred to a drying machine, lightly rolled by hot flannel rollers, and, after being thoroughly dry, it passes through the next process, which separates the imperfect from the perfect shot. This consists of a long, smooth, wooden inclined plane, divided into regular ledges, each one a little lower than its predecessor, with a slight break or open space of about half an inch between. The round, perfect shot, in rolling down this plane, leap the openings, while the imperfect, not having the same momentum, fall through, and are gathered up to be re-melted.

The next process is separating the different sizes. This is done by a sort of chest of drawers, the top of each drawer being covered by a sieve—the coarser at the top, and thence becoming finer toward the bottom. This cabinet is kept in a swinging motion to and fro by machinery, thus shaking the mixed shot, which is poured in at the top, from drawer to drawer, until all the different sizes are duly assorted into separate drawers.

The shot has now a dull, dusty color, the finer appearing more like sand or black meal than a mass of separate and uniform globules; and the next operation is to polish. This is performed by putting it into revolving cylinders, with black lead, and from which the shot is at length projected, bright and shining as beads of glass. It is next put in bags, and is ready for shipment.

The shot business is now very brisk. More is shipped at the present time than for a number of years past. During the war a large business was done in Minie balls, or slugs hollowed at the butt. The trade is now almost altogether in shot, not including the three sizes of buck-shot, which are molded like bullets.

There are four shot towers in New York and vicinity, viz. :--The New York Lead Co. Centre Street; Tatham & Brother, Beekman Street; T.O. Leroy, Water Street, and McCullough's Lead Co. Staten Island. The capacity of all these works is very nearly equal, that of the former being from ten to fifteen thousand pounds of shot per day—or a total of forty to fifty thousand pounds.--N. Y. Tribune.

HYDRAULIC LIFTS FOR WAREHOUSES.

In England water power is employed to a much greater extent for minor purposes than it is with We have published in former numbers of the 118. Scientific American many instances where small turbines have been applied to blowing organs and driving light machinery. Other applications of water power are common abroad which are unknown here-as in hydraulic cranes, water engines, "hydraulic lifts," and similar machines. The water-rate is much lower in England than in this country; that is, the rent for so much water, annually, is less; but that is no reason why water power should not be introduced for many purposes where steam is now used.

Our large importers and jobbing houses on Broadway and other streets, use steam power to a great extent. In their immense buildings are one or more hatchways, up and down which goods are continually sent from one story to another. To do the work, however, there must be a steam engine and boiler, which requires costly fuel, attendance, and supplies, and is, in dull seasons, an investment on which there is no return. By the use of water power for this purpose, these outlays would be unnecessary, and a comparatively simple system introduced in place of a complicated one. The saving to be made by this substitution lies not in an increase of power-for a pound of water, turned into steam, will do much more than the same quantity on a wheel-but in the conditions under which power is given out under the two plans there is a vast economy.