wool and the like are spread upon beds formed by Covering with netting enclosed boxes into which the hot air is discharged and from which it can only escape through the material above. The materials now dried by hot blast are legion . asbestos, blood, bricks and clay, clothespins, eggs, leather, malt, milk and gun powder, hair, soap, stove linings, sweet corn, yarns and a thousand other products of our industries depend upon the process for their successful produc-

What Not to Do.

WITH A GASOLINE ENGINE.

1.-Don't forget to turn on the cooling water.

2.—Don't forget to open the switch when engine is not running.

3.-Don't forget to oil the engine before starting.

4.-Don't try to wipe the engine while it is running.

5.-Don't use too much gasoline. This causes loss of power, too much soot and deposit. A black smoke out of the exhaust means too much gasoline.

gasoline.

engine don't start; it's no use. The engine will start the first or second turn if everything is right. If it don't look for trouble; see num under Mr. Hall's patents, and works what you have forgotten to do.

S .- Don't fail to carefully look over your engine when it is in first class running order. Learn to know your engine; it will help you to fix it when something goes wrong.

9.-Don't forget to drain the water out of the cylinder in cold weather. Should the water freeze, it will burst your cylinder.

10.-Don't turn the water on the cyl inder if it has been heated up without any water in it. If you have forgotten to turn on the water before starting, stop the engine and allow it to cool somewhat before turning Massena, St. Lawrence county, New York, on the water. If you turn on the water when the cylinder is hot, you will ruin your engine.

11 .- Don't forget to see that all battery connections are tight, and don't forget that your battery should be renewed if it does not give a good snappy spark.

12 .- Don't use your engine battery for bells, ctc., or you will surely have trouble.

13 .- Don't allow any rubbish, wires, nails, cans, to accumulate around your batteries; a short circuit may result and your batteries will be run down.

14 .-- Don't think your engine needs no attention or care, and don't think it will not wear out.

15 .- Don't be afraid to fix your engine. Learn to know your engine and you will be able to fix it.

16.-Don't forget to turn the switch on before starting.

17 .- Don't forget to strain your gasoline: any dirt will cause much trouble with your pump, check valves and needle valve.

-Don't forget to read the foregoing instructions a couple or three times.

The Manufacture of Aluminum

One of the newest and most interesting industries of this country, says the Bulletin of the American Iron and Steel Association, is the manufacture of aluminum, which is used in the production of domestic and other articles, including machinery that combine lightness with strength, as an alloy with steel and other metals, and largely for the transmission of electric currents as a substitute for copper. Fifty years ago aluminum was a chemical curiosity. Soon afterwards small quantities were produced in Europe for commercial purposes by various processes, but the production abroad did not enter largely into the arts until after the manufacture of aluminum on a large scale was developed in the United States through the invention in 1886 of the electrolytic process by Charles M. Hall, a native of Ohio. This process is now in universal use. In a report of the United States Geological Survey for 1892 the statement was made that "practically all the pure aluminum which has been made in the United States has been made in accordance with the electrolytic process covered by Hall's patents." Mr. Hall's process has so reduced the cost of aluminum that the metal is now in common use. The production in the United States 6.-Don't try to start the engine with the in 1883, before Mr. Hall's invention, was only cylinder full of gasoline; you can't do it. 83 pounds, a purely laboratory product, but Shut off your gasoline and turn the engine in 1903 it amounted to 7,500,000 pounds, and over a few times to clear out the excess of in 1905 the consumption of aluminum in the United States was 11,347,000 pounds. The 7.-Don't turn and turn the wheels if the production has since phenomenally increased. In 1888, the Pittsburgh Reduction Co. was organized solely to manufacture alumifor this purpose were built in that year at Pittsburgh. The name of the company has recently been changed to the Aluminum

Co. of America. It is the only company in the United States that is engaged in the manufacture of aluminum. In 1890 these works were greatly enlarged and in the following year they were moved to New Kensington, a suburb of Pittsburgh, and again enlarged in 1893. They are still in active operation. Other works now operated by the company are located at Niagara Falls, at and at Shawinigan Falls, Que. The first works at Niagara Falls were started in 1895, and in 1896 they were enlarged and new works were built.

Alumina made from Greenland cryolite was used at first by the Pittsburgh Reduction Co., in the manufacture of aluminum, but very soon bauxite from Alabama and Georgia was substituted and its use has produced the best results. The bauxite is to-day purified at works at East St. Louis, Illinois, owned by the company, and thence taken to various manufacturing plants of the company and converted into pig aluminum. In 1896 the manufacture of pig aluminum at New Kensignton was abandoned. The works at that the products of combustion from the say place have since been devoted to converting pig aluminum into more or less finished forms. In late years these works have been greatly enlarged.

The first president of the Pittsburgh Reduction Co. was the widely known Pittsburgh engineer, Captain Alfred E. Hunt, who remained its president until his death in 1899. Since Captain Hunt's death R. B. Mellon, of de next lot here widout bein' worried + Pittsburgh, has been president of the com- offers of work .-- Brooklyn Eagle.

pany, and A. V. Davis, secretary and general manager. The original capital was \$20,000; the present capital is \$3,800,000.

When first put on the market aluminum was used only in the manufacture of optical instruments, dental plates, and similar light articles. In 1890 the manufacture of aluminum cooking utensils was commenced. One of the earlier uses of aluminum was as an alloy in the manufacture of steel, aluminum being added to the extent of one-tenth of one per cent., or less, to remove the dissolved gases and make the steel solid both for castings and for steel plates. It is so used to-day. Prior to Mr. Hall's invention in 1886 the

price of imported aluminum in United States markets was not less than \$15 per pound. In 1888, when the works of the company were started, the price of imported aluminum dropped to \$4 per pound. A short time previously the price had been \$7 and \$8 per pound. The company soon reduced the price of aluminum to \$2 per pound, and in 1893 the price ranged from 65 to 75 cents per pound. In 1907 it is 43 cents.

The establishment of the aluminum in dustry in the United States twenty years ago has not only given a new and useful industry, but, as has been shown above, it has greatly reduced the price of alumi num to consumers, again illustrating the truth, which has been so often emphasized. that prices of manufactured products always fall when we cease to be dependent on foreigners for their supply. The manufacture of aluminum is to-day one of the important and necessary industries of the country, and for its existence we are indebted first to Charles M. Hall, the inventor of the electrolytic process, and next to the engineering skill and executive ability of Captain Alfred E. Hunt.

INCREASING BOILER CAPACITY.

There is no question but that mechanical draft plant has all the advantage in regard to the provision for the future increase of the power plant. When a chimney is built it must be built very much larger than needed in order to allow for future growth, and this means always a greater first cost than neces sary; and when the plant has grown so that the chimney has reached its limit of capacity it then becomes necessary to build a new chimney. It is because of this continual growth, the rate of which cannot be for seen, that many plants are equipped wit' several cheap steel chimneys, each addeas the increase of the plants necessitates a rather than one large brick chimney. In the case of a mechanical draft apparatus th capacity of the plant can be very much in creased simply by speeding up the fan, ar ... when this has been done as much as it advisable or economical, it is cheaper to ma an addition to the mechanical draft apparat than it would be to put up a chimney ca able of giving the same draft and handh quantity of coal.

Dusty-Hev you got any kind of a inyou want done, lady?

Lady-I'm sorry, poor man, to have disappoint you.

Dusty-Dat's all right, lady. I wanted ter find out if I could take a sleep

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