ing, at first sight, all those apprehensions which other engines are calculated to excite. It can be regulated so as to work with a pressure of from one to six hundred pounds upon the square inch, with a very moderate strain on any given part of the machinery. The ingenious inventor, whose name will appear in due time, pledges himself, that an engine of sixty horse power shall be kept at work, night and day, for one month, at a cost not exceeding ten dollars.

Before closing, I will state, that the obstacles which existed in Brown's gas engine, have been entirely overcome, as will be made evident to the citizens of Philadelphia, before many weeks are passed; the public therefore might do well to suspend its judgment, respecting this machine, notwithstanding the positive manner in which it has been denounced.

Respectfully, &c.

JOSHUA SHAW.

Philadelphia, July 10th, 1827.

On the advantages of employing small Cupola Furnaces in Iron-founding. By THOS. GILL, Esq.

In our last volume, page 174, we mentioned that an eminent iron-founder and engineer in London had lately caused a cupola-furnace to be lined to the internal "diameter of seven inches only at the basin, although it widened above in a conical form, for the sake of holding more coke."

We have since been highly gratified by the information, that in this small furnace, intended chiefly for small jobs, on a sudden emergency, *they have been able to run down thirty-three hundred weight of cast-iron in a day, and with one half only of the coke usually employed in the larger cupola-furnaces!*

We need hardly add, that they will always continue to employ this small furnace, in preference to a larger, where it will contain a sufficient quantity of iron for their castings; as it not only saves so much fuel, but also melts the iron in a much less time, and consequently with a less expenditure of power to work the bellows.

In plate 2, fig. 6, we have given a figure of this small, hexagonal, cupola-furnace, the outside of which consists of a set of six, nearly similar, cast-iron plates, bound together with screwed hoops of wrought-iron, and lined internally with fire-bricks and road-dust. *It is only five feet in height, but will run down one and a half, or two, hundred weight of cast-iron in half an hour's time.*

It is the intention of this founder, in case of erecting another furnace, to make it a foot, or a foot and a half, higher than the present one. The bellows, are a pair of the larger smiths' bellows, the pipe is two inches internal diameter, and they are worked, rather quick, by means of a crank. There are two circular orifices in the back plate of the furnace, to admit the blast, fully as wide as the bore of

the bellows-pipe, and placed one above the other, in order to use either the one or the other of them, to make the basin more or less deep, according to the quantity of iron to be melted.

[*Technical Repository.*

*List of Patents granted in the United States, in February and March,
1827.*

FOR INVENTIONS AND IMPROVEMENTS.

In the method of making copperas; Isaac Tyson, Baltimore, February 15.

In the washing machine; Chester Stone, New Haven, Connecticut, Feb. 17.

In a mode of preventing moths, or worms, from destroying hides, skins, furs, and peltry of all kinds; Samuel Storm, New York, Feb. 17.

In the machine for grinding or mixing earth, for making bricks; Benjamin K. Hill, Richmond county, Georgia, Feb. 17.

In the hay, and grain, horse-rake; Moses and Samuel Pennock, Pennsylvania, Feb. 17.

In the machine for pressing cotton, &c.; Philemon White, Chatham county, N. Carolina, Feb. 19.

In the mode of constructing locks, or door fastenings, &c.; John Brown and George W. Robinson, Providence, R. Island, Feb. 20.

In the plough; Ryland Rodes, Charlottesville, Albemarle county, Virginia, Feb. 20.

In the percussion gun-lock, for rifles, &c.; William A. Hart, Fredonia, N. York, Feb. 20.

In making salt; Benajah Byington, Salina, New York, Feb. 21.

In the art of building and constructing ships, &c.; Thomas W. Bakewell, Cincinnati, Ohio, Feb. 21.

In the machine for clearing grounds of logs and brush; Squire Collins, Hillsdale, Columbia county, New York, Feb. 22.

In the art of inlaying gold or any other metal, in turtle or tortoise-shell and horn, for various ornamental and fancy articles; Uriah Bailey, Massachusetts, Feb. 22.

In manufacturing andirons; Edward Smylie, New York, Feb. 22.

In the manufacture of suspenders; A. L. Van Horn, Philadelphia, Feb. 22.

In the pump, used for steam-boilers; Alfred Judson, New York, Feb. 23.

In bedsteads; Chester Johnson, New York, Feb. 24.

In the bee-hive; C. Wiggins, Pennsylvania, Feb. 27.

In the grist mill; Benjamin Overman, N. Carolina, Feb. 28.

In finishing paper; Ira White, and Leonard Gale, Vermont, Feb. 28.

In cutting garments; James G. Wilson, New York, Feb. 28.