The East Saginaw Co. have 20 solar vats in operation; and the prospects of success in this method of manufacture are so great that 500 additional vats and covers have been constructed, making a total outlay in the coarse salt manfacture of \$8,500. Five hundred barrels have been produced.

The method of boiling in kettles is evidently too primitive and wasteful of heat to be tolerated by an inventive people. Immense quanties of caloric are transmitted from the arches to the ground and entirely lost. In Chapin's method the heat is conducted in every direction only into the brine. If he could now devise some means to utilize the steam, the economy of caloric would be complete. In the opinion of the writer, steam pipes might be made to replace the two flues in the condensing vat, and fuel employed—but in redoubled amount only in the graining vat. We wait with interest to learn whether Mr. Chapin's process is destined to turn the old potash kettles on their sides.

In the process of boiling in kettles, two firemen and two boilers are required for each block—the firemen relieving each other at intervals of 12 hours, as also the boilers. At some of the works it is in contemplation to let the boiling—which can be done for ten cents a barrel—the company furnishing the fuel. This method, while it would increase the quantity of salt produced, might somewhat endanger its excellence. Under the present arrangement, boilers are paid \$1 75 per day, and firemen \$1. The wages of an engineer are \$1 50 per day, and of common hands \$1.

(This process was illustrated on page 97 of the current value of *Scientific American.*) The total amount of fine salt manufactured in the

Saginaw Valley up to the first of July of the current year, was nearly one hundred thousand barrels. At the present time, the number of blocks in actual operation is 22, with an aggregate of 1,187 kettles. Several of these blocks have started within a few days. There are besides, four or five new blocks just ready to go into operation, to say nothing of the three blocks nearly completed for evaporation, by the Kanawha and Chapin process. If the 22 blocks now in operation succeed in maintaining the standard of productiveness established by the old ones, they are turning out daily 1,210 barrels, which, making allowance for the check of winter amounts to 396,000 barrels or 1,980,000 bushels annually. This is not a calculation of what the Saginaw works are expected to do; it is what they are doing at this moment; and shows a growth at the end of two years from the production of the first bushel of salt, equal to that attained by the Onondaga salt works in 1834, at the end of 38 years from the time the salt springs passed under the superintendence of the State. But it is not neces-sary to pause here. Within thirty days, or by September 1st, not less than four additional blocks would come into operation, raising the daily produc-tion to 1200 knowled and the analysis of the time to tion to 1,300 barrels, and the annual production to 468,000 barrels or 2,340,000 bushels—a result ofly reached by the Onondaga salt works less than twenty-five years ago.

The only question which remains, and one upon which the predicted growth of the manufacture must depend, is that which respects the quality of Saginaw salt. There is no corner on which our predictions rest with greater security. The appearance of a pile of Saginaw salt is that of driven snow glistening in the morning sun. The grain is coarse. clean, and angular; the taste purely saline and unexceptionable, and the weight is 581 lbs. to the measured bushel. Letters and documents are in the hands of the manufacturers proving that the acceptance of Saginaw salt is such that the market is literally clamorous for an adequate supply. It would occupy too much space to make many cita-tions. The Mechanics' Institute, of Chicago, the New York State Agricultural Society, (at Elmira), and the Mechanics' Association, of Utica, have severally awarded the salt of the East Srginaw Company their highest testimonials. Harvey Williams, Esq., one of the oldest and most extensive fish packers on the lakes, certifies: "My experience and observation lead me to the opinion that the salt manufactured by your company is purer, stronger, safer, and more economical for fishermen than the Syracuse fine salt." He also names several other parties who have used the salt for fish packing with the same results. In Detroit, this salt is ranked equal to any, and is very often called for in preference to Syracuse salt. The annual statement of the trade and commerce of Toledo, says: "We are led to the conclusion that eventually all the beef, pork, &c., packed west of Lake Erie, will be laid down in Saginaw salt." Dow, Quirk & Co., of Chicago, think Saginaw salt "superior to any that comes to this market." Large quantities of this salt are now sold in London, C. W., whence it is distributed through the province. St. Louis and Cincinnati also take large supplies, and the demand, at all these points, is far greater than can be furnished.

ON FORCE.

(Concluded from page 248.)

There is one other consideration connected with the permanence of our present terrestrial conditions, which is well worthy of our attention. Standing upon one of the London bridges, we observe the current of the Thames reversed, and the water poured upward twice a day. The water thus moved, rubs against the river's bed and sides, and heat is the consequence of this friction. The heat thus generated is in part radiated into space, and then lost, as far as the earth is concerned. What is it lost, as far as the earth is concerned. The earth's that supplies this incessant loss? rotation. Let us look a little more closely at the Imagine the moon fixed, and the earth matter. turning like a wheel from west to east in its diur-nal rotation. Suppose a high mountain on the earth's surface; on approaching the moon's meridian, that mountain is, as it were, laid hold of by the moon, and forms a kind of handle by which the earth is pulled more quickly round. But when the meridian is passed, the pull of the moon on the mountain would be in the opposite direction, it now tends to diminish the velocity of rotation as much as it previously augmented it; and thus the action of all fixed bodies in the earth's surface is neutralized. But suppose the mountain to lie always to the east of the moon's meridian, the pull then would be always exerted against the earth's rotation, the velocity of which would be diminished in a degree corresponding to the strength of the pull. The tidal wave occupies this position-it lies always to the east of the moon's meridian, and