CALIFORNIA MINES.

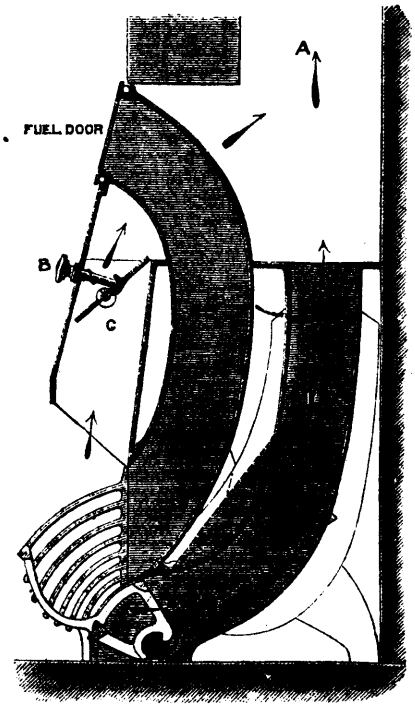
An impression seems to prevail to some extent that because other sections of country are prosperous in mining matters, and people are leaving California for those sections, California mining matters must be at a standstill. This is by no means the case. California mining is now being conducted on a more substantial basis than ever before. While there have been no great excitements, no special advertising and no great stir over the mines of this state, they have been, and are, doing well and generally paying their owners.

Until Bodie came to the front there were very few California mines called on the Stock Board, but at that time a number were put on the lists. On the decline of stock gambling it was generally supposed by those with only a superficial knowledge of the matter, that the California mines felt the result to their detriment. This is not so. The stock market had very little effect on California mining, for the reason that our mines were not favorites to deal in, with the exception of a few of the bodies. The great mining counties of the State were, some of them, not represented on the Board by a single mine.

Up in the mountains where mining is carried, work is progressing steadily at the various mines. The owners attend to their business and work away without much reference to outside influences. The owners are seldom heard of. Nothing is telegraphed about properties unless stock is to be sold. As most of the mines of this State are not stock jobbing enterprises, we do not hear of their being heralded abroad as bonanzas.

As an illustration of how mining matters are going on in this State we may quote the following paragraph from the Nevada *Transcript*, published in Nevada county, the most prominent county in the State.

"Every indication points to the fact that we are to have a lively mining season, and perhaps one which will excel all others in the past. There are more hydraulic mines in operation than there have been in a great many years, and their clean-ups thus far have been larger than usual. The Hirchman claim is the only one not in operation. The quartz prospects here were never better than they are now. There are more first-class claims in operation than ever before, and a large number of good claims whose prospects are exceedingly flattering, to say the least. Before many months there will be sixty new stamps added to the already large number in this district. This of itself will give work to two or three hundred more men, and should bring renewed prosperity. There will be, before the year closes, twenty new stamps erected at the Murchie, a new twenty stamp mill at the Mount Auburn, and twenty more stamps added to the Merrifield, making sixty in all, as far as heard from."



A, common flue to up and down-draught.
B, valve to shut off up-draught.
C, up-draught.
D, fuel chamber.
E, smoke-flue for down-draught.
F, counter-balance weight to front bars.

THE "WONDERFUL" GRATE.

THE "WONDERFUL" GRATE.

The *Building News*, reporting a discussion at a recent meeting of the Royal Institute of British Architects, gives an illustration of a new grate, named the "Wonderful," which was described by the inventor, Mr. Samuel Russell, in the following terms:—

It burns throughout the day and night without attention; the quantity of fire is regulated at pleasure; the intensity is regulated at pleasure; when set to any desired quantity and intensity it continues to burn with but slight variation; it consumes nearly all its smoke; the fire is always bright and clear, no black coal being seen; it is very clean when in use and requires no fire-irons; it gives a large supply of pure warm air; it burns anthracite coal, coke, or cinders, or any combination of these; the chimney-flue does not require sweeping oftener than once in four or five years; the cost of fuel is one penny for six hours; no coal-box is required in the room. Mr. Russell continued as follows:—For the accomplishment of these purposes the grate is provided with two flues, one passing upwards in the ordinary way from above the fire, the other commencing below the fire and passing up behind it, the two communicating at any convenient point above the fire. At the junction of these two flues a valve is formed capable of being regulated so as to divert the draught in either direction. When the valve is open, leaving a free upper draught, the fire is very mild, and in proportion as it is closed the fire increases in intensity, and produces almost a white heat when quite closed. Thus any fire desired may be obtained by simply turning the knob which regulates the valve. Another portion of this invention consists of a vertical tube or chamber for containing the fuel, the lower end of which opens into the back of the grate. It is charged from the upper end, which is then closed air-tight. The fuel by the action of its own gravity continues to supply the consumption of the fire. The double flue and valve, as already stated, regulate the intensity of the fire. To regulate the quantity the front bars are made to draw forward, a counter-balance weight always tending to draw them back, with a catch to fix them in any desired position. When the catch is removed, the backward pressure stops the fall of fuel, the fire becomes gradually less, and is finally extinguished. By this arrangement a small quantity of fire may be kept burning throughout the night, the bars in the morning being drawn forward, and a scuttle of coal supplied starts it afresh for the next four-and-twenty hours. As the fuel enters at the back the smoke is evolved from it before reaching the fire, and whether the up or down-draught, or both, are in force, it is consumed, the only escape for it being through the fire. The recess in which the grate stands forms a hot-air chamber through which the external air, or where this is not practicable, the air of the room, passes.

It appears to be doubted in some quarters whether nitric acid is capable of igniting vegetable stuffs. Herr Kraut has lately stated that the inflammability of sawdust, straw, hay, tow, cotton, or wood-shavings, by means of nitric acid, may be easily proved by experiments, thus: A rectangular wooden case, about 25ctm. long and 40ctm. high, is filled to a height of about 20ctm. with one of the materials named; on this is placed a glass vessel holding 25 to 100 cub. ctm. of nitric acid (of at least 1 5 sp. gr.), the rest of the case is then filled with hay, straw, or the like; the glass is smashed, so that the liquid may be well distributed; then wooden lid is placed on the case. In one or two minutes vapours are visible, a little later a thick white smoke appears (due to the decomposed nitric acid), then the smoke of the packed material. If the lid be opened in five to ten minutes from the beginning, the case is found filled with carbon in lively glow, and this, on entrance of air, is inflamed, and often sets the wood of the case on fire. The experiment should be made in the open air.