

THE "MORSE" VALVE RESEATING MACHINE.

WE present to the lumbering trade, an illustration and description of the above machine for reseating steam or water valves.

The makers claim the following advantages for this machine: 1st. That the valves can be resealed or repaired without disconnecting them from the pipes, a very important point, as the saving in labor and new pipes and valves is immense. 2nd. That it is the only machine that can be attached to all make of valves from $\frac{1}{4}$ " to 12" inclusive, either flat or taper seat, regardless of the size of thread or diameter of opening in the valve. This machine is made in three different sizes, as follows: No. 1 machine for $\frac{1}{4}$ " to 4" valves; No. 2 for 3" to 9"; No. 3, 9" to 12". 3rd. The "Morse" Valve Machine is so constructed that it will make a perfectly steam tight joint, without having to grind the seat after it has been faced with the cutter.

The accompanying cuts show machines Nos. 2 and 3, and the tools furnished with each outfit.

The makers have these machines in use in the largest mills and factories throughout Canada. They supply them on 30 days trial, and if they do not prove satisfactory they can be returned at their expense. Within the past eighteen months they have sold 200 machines, and feel sure that it will pay parties with steam plants of any extent to look into the merits of this machine.

For further particulars apply to Darling Brothers, Reliance Works, Montreal.

INDIFFERENCE TO BOILER FIRING AND MANAGEMENT.

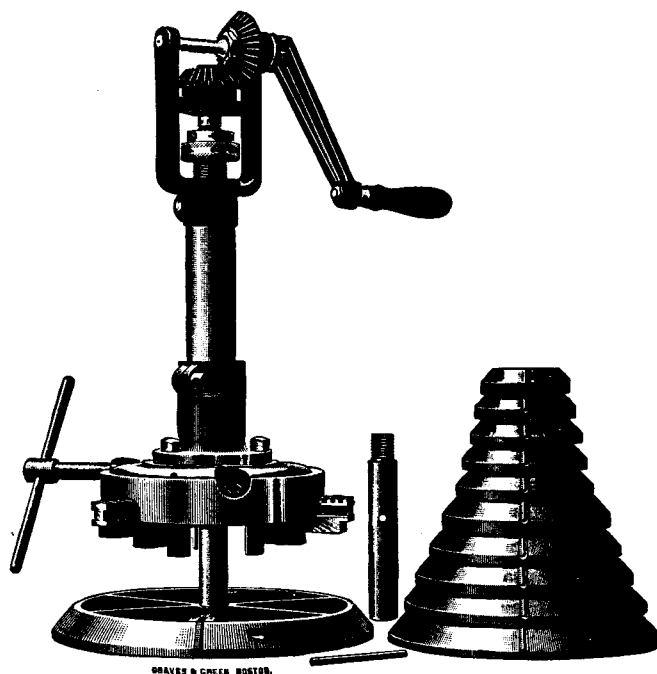
BY DANIEL ASHWORTH, MEM. A.M. SOC. M. E.

OBSERVATIONS extending over a period of a quarter of a century in a practical and professional way have presented opportunities to note, in the greater number of manufacturing establishments, a continuous decline in the grade of service of those in the position of firemen and boiler room managers, this corps of operatives seeming, at least, to have remained in "statu quo." The evil has become so glaring and the results so palpably fraught with disaster, destruction and waste as to warrant an effort to call the attention of those who desire to progress, to the false and inconsistent position which they occupy by permitting such a narrow policy in management, so widely at variance with true economy ignoring directly that the better intelligence renders the more valuable, and, hence, more profitable service.

It goes without saying that, during the past ten years, the concentration of efforts by scientists and eminent mechanics looking to the more perfect development of the steam engine in its various types has produced results which challenge the admiration of the most critical in this line of thought. Within the same period, from every source, there have been a multitude of features in the form of designs and novel applications of boilers, all converging to the important factors of increased economy, efficiency and safety. In the engine sphere, condensing, compound and triple expansion engines, with and without jackets; in brief, seemingly, all the necessary refinements have received and are now receiving close attention. In the boiler domain there has been also the evolution from the plain cylinder type to the tubular, and from that through the multifarious forms of water-tube designs, each striving for a superior degree of excellence. The amount of research and practical application that have been and are being instituted in attempting to increase efficiency and economy, is such as to be incalculable. A retrospect of the past, viewed in the light of present results, shows that these efforts have been of an exceedingly fruitful character.

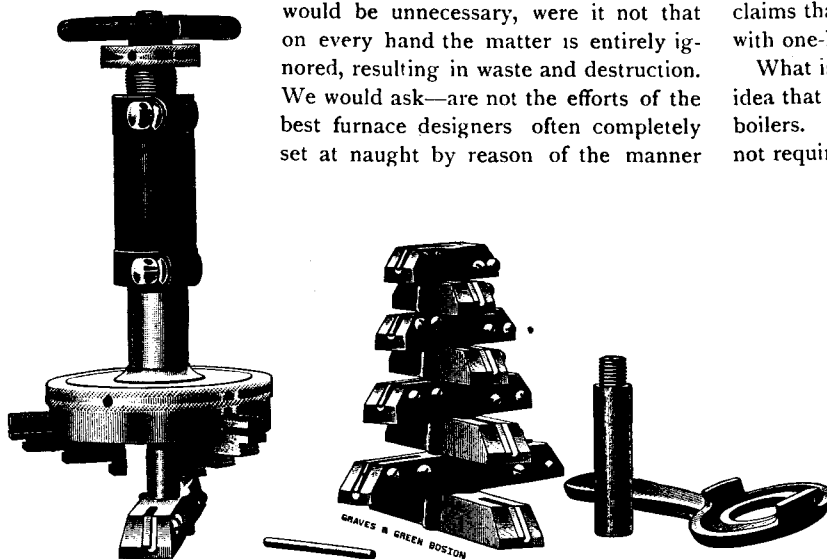
The development has carried with it the imperative advancement of those in charge of engine management to such an extent as to create almost anew this body of men. Such an intellectual advancement in the department of mechanics, the writer believes, is without precedent, and in every sense challenges admiration from every quarter. Notwithstanding these favorable features we are constrained to say that all this is somewhat like the play of Hamlet—with Hamlet left out; or, in other

words, we are radically defective at the very threshold of this field, by reason of relegating the firing of boilers to the most ignorant of operatives; or, to put it in a plain way, there seems to be an almost unanimous idea that any one who can shovel and throw fuel is good enough for a fireman. Close observation and contact for a period of years, with numerous plants of varied character, increase the conviction of the writer upon this point. Recognizing, as we all do, that the furnace of the boiler is the prime feature and great initial point from which comes the source of power, does it not properly follow that if economy and efficiency are deserving of efforts in the advanced stages, as has already been pointed out,



4" TO 12" OUTFIT.

this is the very point that should be treated with every consideration of intelligence? Should not the fuel, furnace and boiler receive the thoughtful attention that the engine receives from the careful engineer? I think this will be accepted by every one interested in advanced ideas. No one, I think, will question the fact of the importance of the initial point of the boiler and its furnace, and that with mismanagement these other efforts of refinement are rendered, in many cases, completely void. It would seem so simple that argument would be unnecessary, were it not that on every hand the matter is entirely ignored, resulting in waste and destruction. We would ask—are not the efforts of the best furnace designers often completely set at naught by reason of the manner



3" TO 9" OUTFIT.

in which they are operated? Is it not a glaring fact that in all cities where smoke abatement has been and is being attempted, the great stumbling block is the low grade of intelligence and low grade of the boiler operatives?

In looking upon this subject from a mechanical and engineering standpoint, we are fully alive to all the requirements to give complete combustion and thorough distribution of heat units, proportion of grate area and openings. Proper amount of air, conduction of the heated gases, all are carefully considered. When all is completed we have the wonderful spectacle of these conditions being turned over to the simple treatment of

ram-jam shoveling and slice-bar operations. I claim that the fireman should know, at least, the elements of combustion, the importance of proper management of fires to produce the greatest results with the least expenditure of fuel. It may be said that the application of mechanical stokers makes intelligent firemen unnecessary, a point that is frequently (and I believe without thinking) claimed by those interested in placing such stokers. This is a great mistake, well known by those conducting tests, the results always being superior with the greater intelligence of the operator of the machine.

Within the past few years, in every community where cleanliness, taste and health are considered, there has come forth a crying appeal to the authorities to lessen the great evil of smoke in the atmosphere. In response to this, inventive genius has promptly come forward. The multitude of devices that have been perfected and put in operation furnishes ample testimony of this fact. Many of these, when properly operated, accomplish satisfactory results in smoke abatement, but no inventor has ever had the temerity to label his machine or furnace, "No skilled fireman required." Per contra, it is well known that the most intelligent fireman produces the best results, and it is also an undeniable fact that the best devices are set at naught by incompetent operating. The writer has been brought in contact with large fields of boiler practice, and in many cases, aside from other disqualifications, the firemen were unable to speak or understand a word of the English language. It may be said, as I have heard it said, that these men are not paid to think, but to do. Well, they do do. They will "do up" a coal pile, furnace and boilers with alarming rapidity. I say alarming to those whose views are broad enough to consider the initial and important points. On the other hand, it is a lamentable fact that there are a great number of men in official positions, as superintendents and proprietors of establishments, who seem to be utterly incapable or unwilling to note the importance for the necessity for a higher grade of labor in the firing and management of boilers.

One of the most surprising features in connection with this state of affairs is the tendency of those interested to place boilers claiming, among their numerous merits, that less attention is required for them than for others, precisely on the old exploded claim applied to engines, "No skilled engineer required." I have now before me a letter from a boiler representative, who claims that his boiler will give the utmost satisfaction with one-half the attention that others receive.

What is greatly needed at present is to lay aside the idea that any one is good enough to fire and manage boilers. When you engage a man for your office do you not require that he shall possess some qualifications for the position, and if aptness is shown do you not show appreciation by advancement to a higher plane, the interest being mutual? Why not apply this to the selection of firemen? As it now stands we cannot but exclaim, "Strange, what a difference there should be twixt tweedledum and tweedle-dee!" There are many plants in operation where, by incompetency in this line the steam efficiency is greatly lessened, furnaces and boilers are working in neglected conditions, fuel is wasted and the community is begrimed with volumes of unnecessary smoke. In addition to these evils, lives and property are jeopardized. Unless this matter is considered and such action taken as will improve this corps of opera-

tives, it would seem absurd to be continually reaching and extending into the higher refinements of steam engineering. Under these conditions do not the pertinent questions present themselves to the employers: Are we not occupying a false position by this indifference? Do we not retard the development of a class of labor which, by a recognition, by an appreciation, that some skill and judgment are required, would be animated by some spark of ambition to qualify for advanced positions?

Is not this condition of affairs a gross inconsistency, nay, a mockery, in the face of the query put by those guilty of this indifference.