

are going to make anything out of it, you must get into it with your whole life and soul. No business ever succeeds if handled with the tips of one's fingers. Everything must be made to count on the profit side, even if it is only on a small margin.

Not a great while ago our mill figured on a job of 200,000 feet of 3×12 planks, but lost it by fifty cents a thousand. The firm that got the work failed before the stock could be delivered and we got the job at our own price. This was the method of the concern that figured against us, and as it is always the last ounce that breaks the camel's back, this little job tipped them over. You can not figure too closely on work where you have a solid half dozen figuring against you, and when you get the work you go in to win. Every available point must be taken advantage of; not the least item must be lost in handling. Keep it moving, so the machine need not wait for it one minute; keep the machines drawing it through. Here's another place where a great many lose money—taking away from the machines and loading. If the order is a local one, of course in most cases you expect to lay it down so teams can haul it away, but if it is to be loaded on cars or on board a vessel, there should be no waiting. Keep it moving along out of the way, by power if possible. Study up some plan by which you will be able to move it quickly and easily. Machine work counts, especially on heavy jobs. Where you want to load a car every three hours you must figure close on the minutes. Ten minutes lost here and ten minutes lost there, soon count up into hours; the hours and minutes lost can never be recovered.

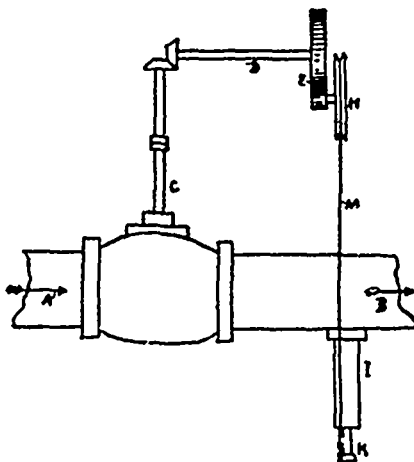
To run things closely does not mean that it is advisable to rush. The rusher more often than otherwise loses his head and either has a breakdown or makes a mistake and has to do part of his work over again, which hinders instead of hurrying the work on hand. It is a steady, strong, continuous pull that pushes work along; every man at his place and doing his earnest, honest best. There are times when we must carry sail to keep off a lee shore, and with the hundreds to-day who are carrying heavy sail, let me say, keep things close. One wrong move may tip you over. Every minute must count.

Recent political events lead us to hope for better times. Whether we get them or not the principle is the same. Our business is never boys' play and always needs constant care and close attention.—Jonathan Torrey, in the Wood-Worker.

REDUCING VALVES FOR STEAM HEATING.

A GREAT deal of steam is lost by escaping through the valves, which conduct it to the various points in use in the mill, when not needed, due either to the valves being carelessly left partly open or to a disordered state of the valves, whereby they leak when closed. This occasions a waste of steam. The waste of steam in a heating system for the mill is almost proverbial. In steaming stock there is waste. Some of this waste comes about by the workmen leaving the steam on. If more steam is used than is necessary the excess simply passes off and escapes with the vapor. Steam at five or ten pounds pressure is for nearly every purpose

as good for heating as steam having the full boiler pressure, provided in cases of heating liquids or boiling the supply pipes are made of sufficient area to transfer the low pressure steam; and provided in cases of heating by pipes and other surfaces the area employed is enough larger than it would be if high-pressure steam was used to provide for the reduced difference of temperature. We have frequently seen instances where the quantity of steam used for heating was largely reduced by simply closing down the main valve at the boiler which supplied the heating steam, so as to shut away from the heating apparatus the full boiler pressure, and this result is brought about by reducing the quantity of steam which before was used carelessly. Something can be done, however, in preventing unnecessary waste of steam generally by introducing between the boiler and the main supply pipe a reducing valve capable of easy adjustment, so that the pressure of the boilers can be held back from the system of pipes and valves in question. The main lines of supply pipe are naturally made of sufficient size to carry all the steam that may be needed. The reducing valve is an essential factor in this connection, but we present herewith a home-made contrivance which any man can make and adopt. It has saved us much steam, as it is self-governing and allows only a uniform quantity of steam to pass. The steam enters at A and goes out at B. Fasten an extra shaft C to the valve and arrange it to be turned by the gearing on shaft D, as shown in illustration. Then cut a hole in the pipe and insert the tube I. This tube is fitted with a plunger K, so that the higher the pressure of the steam the further down will it go, carrying the cord M with it, and as the cord goes over the groove in the pulley H, the latter is turned, and in turning of course revolves the gears E, thus closing the valve. When the steam pressure runs low, a spring on the plunger causes the latter to move upward, and a weight on the other end of the cord makes the latter act the



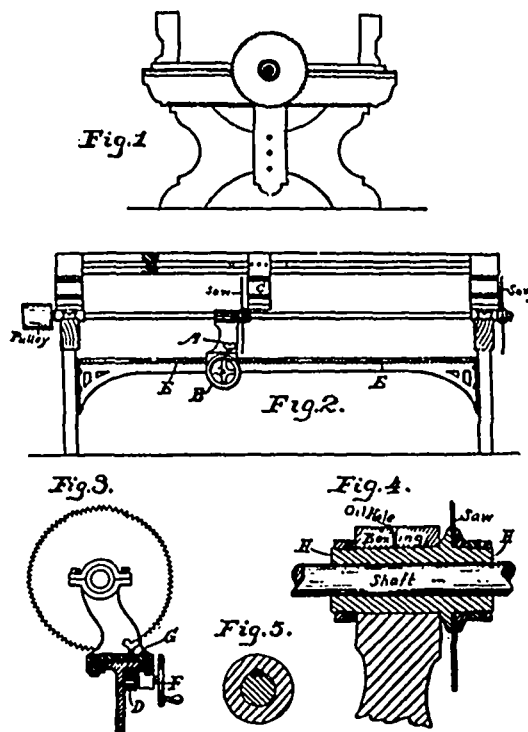
reverse upon the gearing and open the valve, thus admitting more steam. With such a device steam of much lower pressure will easily find its way to the point of use, and answer all purposes. So long as the pressure beyond the valves is high enough to do the work required of the steam, everything is obtained which could be wished. Variations in the adjustment of the valve will supply increased pressure, which, from time to time, may be called for. If the pressure is by this means kept down to the lowest point which will suffice to do the work, unnecessary use of

steam through the carelessly-left-open or leaking valves will be avoided. The reduction of pressure in this way will often secure a noticeable economy in the use of steam in a mill or where live steam is employed for any work.—B. F. Fells, in Hardwood Record.

CUT-OFF SAW.

THE accompanying drawings show a double cut-off saw that is getting quite popular throughout Canada in small wood-working establishments. It is described by Mr. W. Welch as one that can be made cheaply by any machine shop. It is very easy to set for different lengths of stock, from a few inches to as many feet as the machine will take in. It is used mostly to take in stock $6\frac{1}{2} \times 2\frac{1}{2}$ feet.

Fig. 1 shows end view. The carriage I, Fig.



1, is made of wood with V run-ways screwed on bottom. The legs and cross-piece are also made of wood. Fig. 2 shows front view. To set to different lengths of stock, loosen set-screw A, Fig. 2, and turn hand-wheel B, then move rest C, Fig. 2, up to saw.

Fig. 3 shows end view of attachment for moving saw back and forward. D, Fig. 3, is gear wheel to run in teeth as shown at E, Fig. 2. F, Fig. 3, is hand-wheel, and G is set-screw to hold attachment in place after the saw is set. H, Fig. 4, shows saw mandrel with double nuts at each end to fasten saw on and take up wear of boxing. Fig. 5 shows shaft with groove cut in for key in mandrel to slide in.

A patent has been granted to T. H. Madgett and William Crawford, of Burk's Falls, Ont., for a wood-working machine.

In the district of Semenovsk, where wooden spoons chiefly come from, about 7,000 men make a living at the trade. The spoons are generally made from birch wood, and a skilful workman can turn out several hundred a day. No fewer than 12,000,000 spoons are manufactured during the course of the year, which are sold at six to eight roubles per thousand.