

to see to it that their safety valves and gauge cocks are in the very best condition—no matter how many patent attachments there may be—by no means fail to see that those most important appliances—steam gauge, safety valve, and three-gauge cocks—are in perfect working order.

"One inspector reports thirty-three steam gauges incorrect; the variations are not large, except in two instances, where one indicated fifteen pounds, and the other twenty-one pounds less than the actual pressure carried.

"Our Home Office inspector contributes the following, which we commend to the careful perusal of paper manufacturers:

"The proprietors of paper mills, as a general thing, pay too little attention to the condition of the check valves of their bleach boilers. Where these check valves are out of order, the pulpy matter passes over into the steam boiler. And we have sometimes found it at and about the water-line, in places three inches thick. The lime also, which passes over, is deposited in the form of scale upon the sheets and flues, rendering them liable to be burned, beside causing great waste of fuel from its non-conducting character. The valves must not be left until there are positive indications that they are in a leaky condition, but they should be examined frequently and be replaced by new ones, in case there is serious leakage. Never trust to grinding by inexperienced persons for a tight valve—there are very few who can grind in a valve properly, and in many cases the leakage will be greater after the attempt. We have not referred to the danger resulting from vitriol, used in bleaching, being carried over into the boiler, as it must be obvious to every user, that such a mixture cannot be otherwise than injurious. The only way to keep things in a good and safe condition, is to pay attention to all the parts and appliances about the boiler."

The above reports show a shocking state of neglect, and recklessness of conduct, on the part of the parties concerned; but no worse than was discovered by the "Manchester" and "Birmingham" (England) companies, when first commencing their inspections. A great improvement, however, has taken place in consequence of the operations of these societies. Let Canadians take note.

STEAM PLOUGHING.

The Society of Practical Engineering held its regular meeting, Feb. 16, in Cooper Institute, the leading topic for the evening being Steam Tillage. Dr. A. W. Hall read a very interesting and instructive paper upon the subject of cultivating the soil by steam ploughing. He reviewed the methods now in use in England, as well as those which had been abandoned, and

gave drawings of the machines on the black-board. These machines were expensive, and could only be used on level land, and by men of great wealth. Locomotives moving with the ploughs had long since been abandoned, because machines impinging with sufficient force on the ground to drag the ploughs, packed the soil injuriously, by their great weight. The ploughs in use in England consisted of stationary engines, and wire ropes by which the gang of ploughs were drawn through the soil. Notwithstanding the enormous expense attending that plan, it was found on large farms to be more economical and profitable than horse ploughing.

Dr. Hall then presented a plan which he thinks will prove practicable in the United States. A steel wire rope is to be stretched across the field, and attached at each end to anchors. A very light portable steam-engine is to be used with only enough weight to give strength, and not dependent on the action of the wheels on the ground for its locomotion. In the ordinary locomotive the "bite" of the driving-wheels on the rails secures the locomotion, and that is increased in proportion to the weight of the engine. But in this proposed machine the engine works a "clip drum," which takes firm hold upon the rope and thus pulls itself along and across the field, dragging the ploughs after it. This drum impinges upon the rope, which it lifts from the ground as it goes along. The great advantages claimed for this plough are: Immense force, with but little weight; the ability to travel over uneven ground; freedom from action, and general facility of working. Such a machine, he thinks, can do more work in a day than eight two-horse teams, and as many men. Beside, it can be worked all night, thus accomplishing as much work as 16 two-horse teams during the 24 hours.

The plan was illustrated on the black-board, and presented every appearance of feasibility.

AUSTRALIAN BEEF BANQUET.

A banquet of Australian meat was given on the 8th inst. at the Cannon street Hotel; Mr. Wm. McArthur, M.P., presided. The object of the banquet was to demonstrate the practicality of adapting beef and mutton, preserved in Australia, to the ordinary purposes of domestic use, as well as to that of the naval and mercantile marine. In addition to the various dishes being made of Australian meat, a number of tins of beef and mutton were opened in the room, and were partaken of by the company. The mode of preservation is that adopted by Messrs. John McCall & Co., 137 Hoansditch. We regret that pressure of space would not allow of a report in our last issue, and the same cause now precludes a lengthy review of the company's proceedings. However, we are glad to state that this most philanthropic as well as commercial enterprise is receiving that share of public attention which is its due. Mr. John McCall may justly feel proud of being the promoter of so useful an undertaking.—*London Grocer*.