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Improved Balanced Governor Valve.

Any one familiar with the principles of a steam engine, the details, and their operation, must see at once that it is not in the nature of things that it should run properly at all times unless some device be applied to give it steam as it needs it. Of course, if the load is at one moment great, and at another reduced to little or nothing, the flow of steam must be regulated accordingly, to insure proper results. This the ordinary governor does not do, as we have remarked very many times before. In flour mills it is particularly necessary to have a continuous and steady velocity, and also in rolling mills, where, in one minute, when the bolt is passing through the rolls, the resistance on the engine is very much increased, and at another let off entirely.

The valve shown in this engraving is one that has been well tried and pronounced satisfactory by those who use it. It is, as may be seen, two disks, A (see Fig. 4), having ports, B, in the side for the admission of steam. These disks are quite independent of each other, but are, at the same time, connected by screw bolts, C, having right and left threads, so that they can be set up to their seats in the chamber, D; these bolts do not transmit the strain of working the valve or disks from the shaft, there being a coupling, E, formed on the bosses of the disks for the purpose indicated. The valve thus formed works between walls in the body of the chamber, D, and the steam enters from the inside and passes in through the openings down to the engine through the nozzle, F—a passage being cored out for it in the body of the exterior chamber, as shown in Fig. 2. It is thus perfectly balanced, there being as much pressure from within as without, so that it may be said to float in an atmosphere of steam.

The method of operating this valve is ingenious. The ordinary form of governor ball and arm is used, but the arrangement of it is altered. The balls and arms are attached to a frame, G, which revolves by the action of the miter gearing below. The working ends of the arms, or those which operate the valve, are fitted to a coupling, H, at the top, so that they work easily up and down therein. This coupling is made in halves, which are screwed together like a box cover, and the bottom one, I, is chambered out so as to receive the button head of the rod, J, which works the valve through the intervention of the levers, K—a short one being fitted to the shaft, L, and a long one on the end of the same shaft, so that a slight movement of the rod, J, will be multiplied on the valve as the lengths of the levers are to each other.

These are the main details, if we except a method of driving the gearing by a disk, M, on the shaft, the particulars of which the inventor has not furnished us. It is claimed, justly, that this valve will operate well if properly cared for, and that it is sensitive and durable to a high degree. It can be adjusted to close entirely, or in part, and is, in all respects, a useful invention. This invention was patented July 30, 1861. For further information address the White's Governor Valve Co., Galesburg, Ill.

Fig. 1

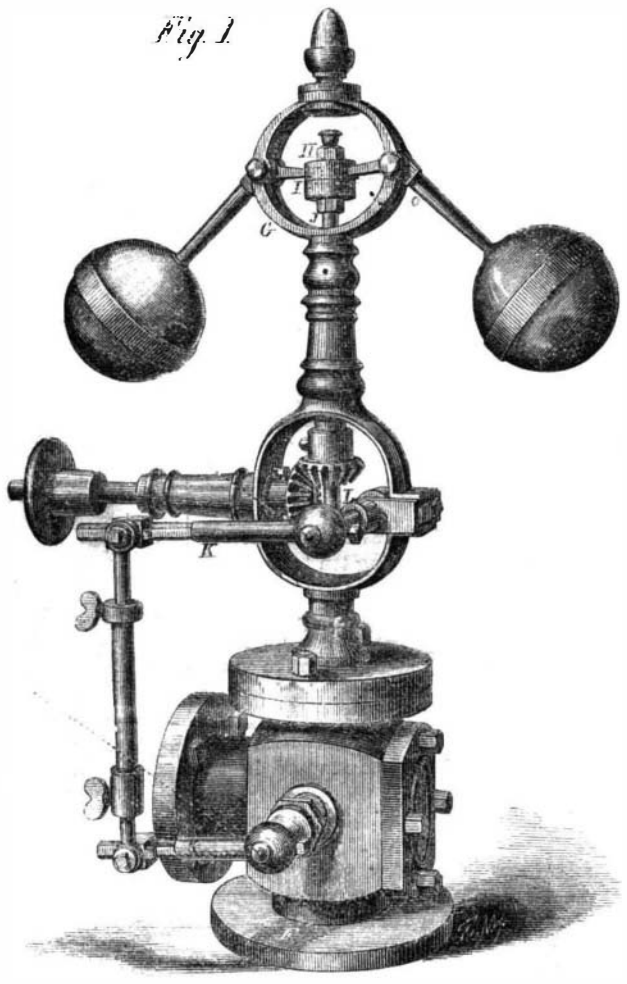


Fig. 4

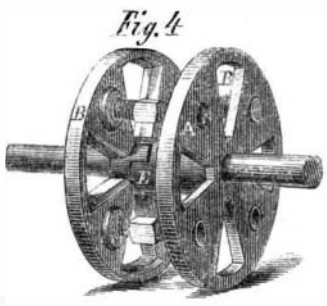


Fig. 2

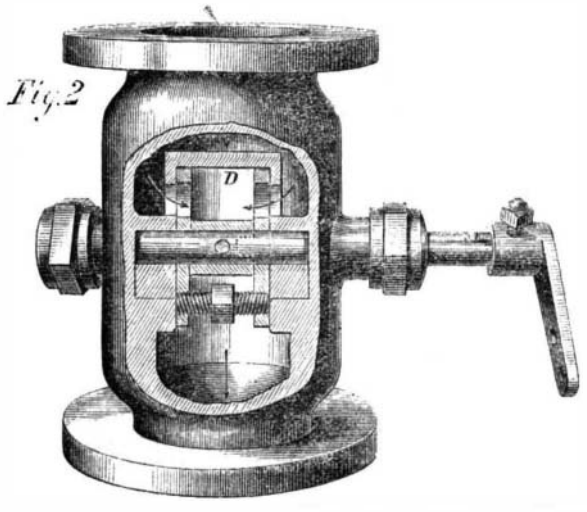
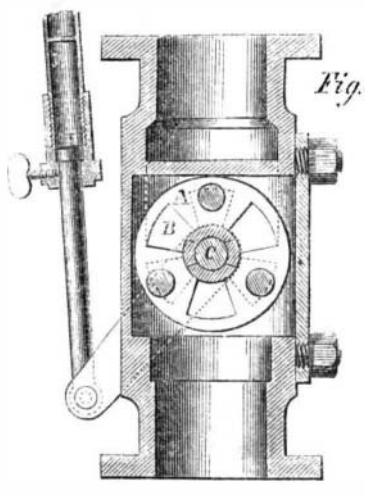


Fig. 3



WHITE'S BALANCED GOVERNOR VALVE.

CROOKES ON DISINFECTANTS.

William Crookes, F.R.S., editor of the London *Chemical News*, is a man of world-wide fame from his valuable contributions to chemical science, including the discovery of a new element. Since the appearance of the cattle plague in England he has devoted a great deal of attention to the study of disinfectants, and was finally appointed by the Royal Commissioners to make an elaborate investigation of the subject. His report is published in the *Chemical News*, and it is certainly the most valuable document in relation to disinfectants that has ever appeared. It revolutionizes the practice. It shows that the substances now principally relied on, and employed, have little or no effect in destroying infection, and it points out materials that are really efficacious. Could its conclusions be generally known and acted on, it might save thousands of animals from the rinderpest, and thousands of human lives from destruction by cholera. We regret that our want of space prevents us from laying it in full before our readers.

Mr. Crookes devotes the first portion of his report to the discussion of the nature of the infection, and he comes to a conclusion that it is *virus*, which he defines as the seed or germ of an organism, either animal or vegetable, having the power to grow and propagate its kind. Among the arguments in support of this view, perhaps the strongest is the extremely minute quantity of the matter that is sufficient to destroy a herd of cattle.

As a result of this theory, the distinction is clearly drawn between *deodorizers* and *antiseptics*—deodorizers merely removing the harmless smell, while antiseptics kill the germ. We extract some of the paragraphs in relation to this part of the subject:

I am bound to admit that the conclusion to which I have been forced to come, is quite opposed to my preconceived ideas on the subject. I started with a strong bias i favor of chlorine ar ozone, but the irresistib force of the argumen derived from my expe ments, has caused me alter my opinion.

At first sight nothi appears more perf than the action of a po erfully oxidizing dis fectant, like chlorine ozone, upon noxious por and septic germs. presence of an excess of either of these agents, all organic impurity is at once burnt up, and reduced to its simplest combinations; and could we always rely upon the presence of a sufficient amount of either of these bodies, no other purifier would be needed. But in practical work on a farm these disinfectants were always very inadequate, except perhaps for half an hour or so during the day; at other times, the oxidizing agent has presented to it far more noxious material than it can by possibility conquer, and being governed in its combinations by definite laws of chemical affinity, the sulphureted and carbureted hydrogen, the nitrogen and phosphorus bases, etc., would all have to be burnt up before the oxidizing agent could touch the germs of infection; while the continued renewal of the gases of putrefaction would be perpetually shielding the infectious matter from destruction