IMPROVED WATER WHEEL GOVERNOR.

The apparatus herewith illustrated is used in connection with the governor, where there is a variable head of water and when it is desirable to keep up the head though at the sacrifice of speed. Its greatest utility is realized where steam power is employed in connection with water power. The water governor being speeded to run the line a trifle faster than the steam governor, the engine is relieved of its weight so long as there is an available head for the supply of the wheel; but when the water is drawn down to a given point, say from three to twelve inches, the governor automatically closes the gate sufficiently to allow the water to regain the lost head, and, when at the available point, automatically resumes its natural action. All this is accomplished by very simple means, as shown by the engravings. The reservoir is placed so that the high water line in the flume is within three inches of the top of the reservoir.

Our engravings represent opposite sides of the apparatus; and in Fig. 2 is shown the reservoir and float in connection.

The operation is as follows: Water is admitted from the flume through the pipe, I. The float, B, in the reservoir, A, rises with the water, and the cord is slackened, which leaves the governor to its natural action. As soon as the water lowers to any given point (regulated according to length of cord), the pawl shifter, C, is drawn down, throwing the closing pawl, F, into action, and the water is closed off. The machinery being all in motion, the gate would become closed, with a tendency to go beyond, but for a stop motion which limits the hoisting and closing of the gate, and which is simply a sliding bar inside of the bracket D, and operated by the worm, E.

Another feature of the governor is an adjustable weight connected to an arm of the pawl shifter, C, but not shown in the engraving (other parts of the machine being in front of it). By means of this sliding weight the speed of the governor may be changed from 140 revolutions to 165—a great convenience in many establishments, particularly in the case of wheels driving paper machines, where an adjustable speed is indispensable.

These governors have been in use, it is stated, now about six years, in some of the largest as well as in the smallest establishments, and attached to all kinds of wheels (even overshot and breast wheels), with heads varying from seven feet to seventy-eight feet, including the largest cotton mills in the world, in iron rolling mills, and down to one set woolen factories. The manufacturers add that they have yet to learn of the first complaint of them.

The latest improvements of this machine were patented May 26, 1874, and the improved machines are manufactured solely by Wm. T. Horrobin, Cohoes, N. Y., under the personal supervision of Mr. H. D. Snow, the patentee.

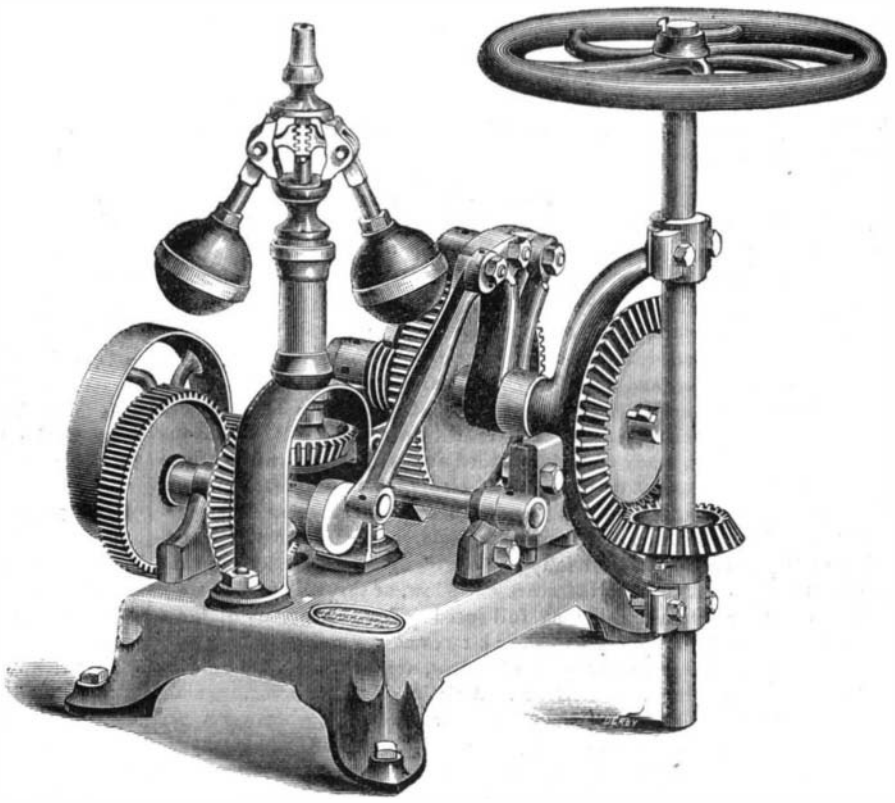
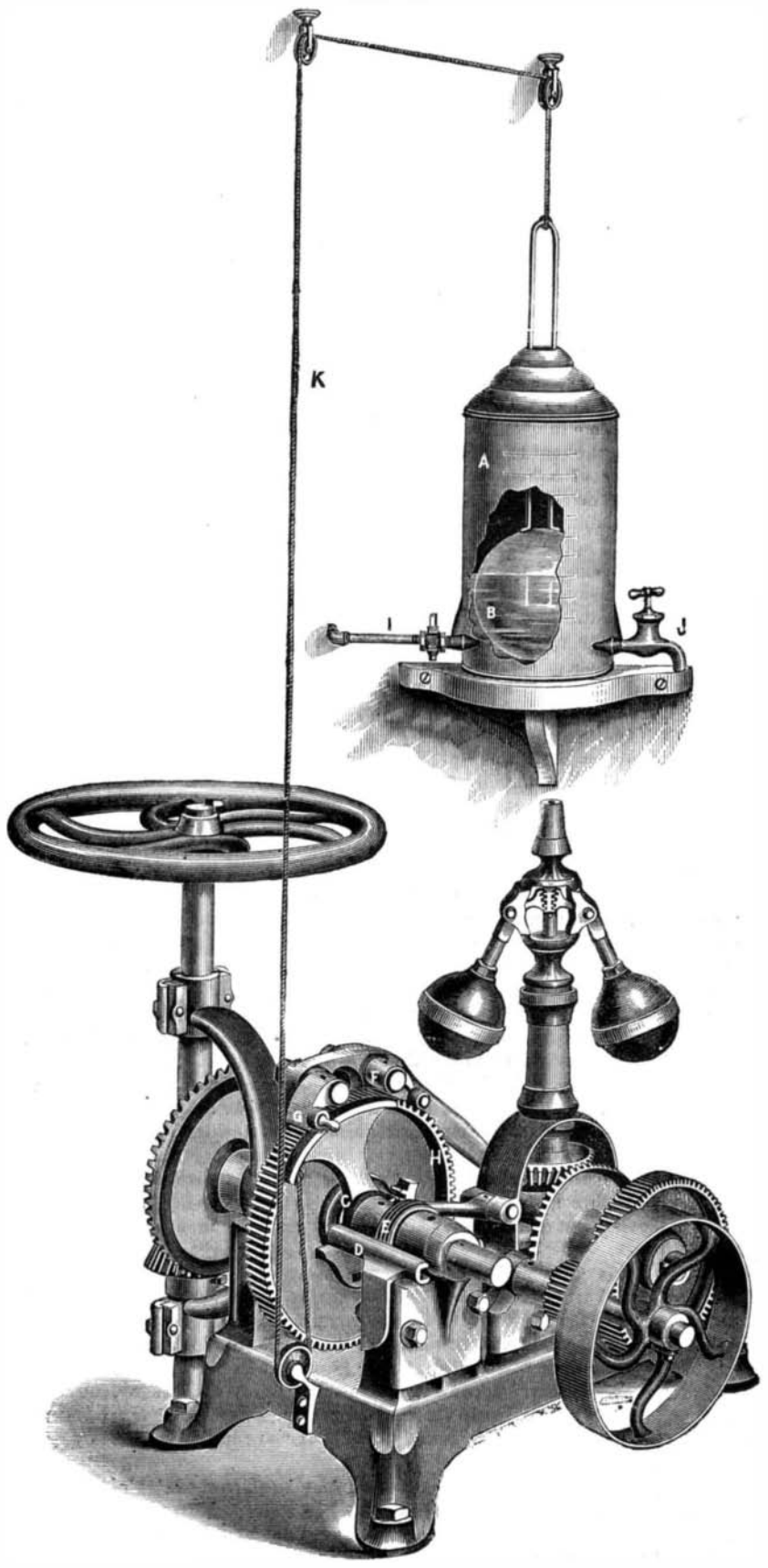


Fig. 1.



SNOW'S STANDARD WATER WHEEL GOVERNOR.—Fig. 2.

How to take care of China and Glass Ware.

In the average household few things suffer more from ill usage than porcelain and glass, especially the finer kinds of such ware. We copy from the Boston *Journal of Chemistry* a few practical suggestions on the best methods of cleansing and preserving these fragile materials:

One of the most important things is to season glass and china to sudden change of temperature, so that they will remain sound after exposure to sudden heat and cold. This is best done by placing the articles in cold water, which must gradually be brought to the boiling point, and then allowed to cool very slowly, taking several hours to do it. The commoner the materials, the more care in this respect is required. The very best glass and china is always well seasoned, or annealed, as the manufacturers say, before it is sold. If the wares are properly seasoned in this way, they may be washed in boiling water without fear of fracture, except in frosty weather, when, even with the best annealed wares, care must be taken not to place them suddenly in too hot water. All china that has any gilding upon it may on no account be rubbed with a cloth of any kind, but merely rinsed first in hot and afterwards in cold water, and then left to drain till dry. If the gilding is very dull and requires polishing, it may now and then be rubbed with a soft wash leather and a little dry whiting; but this operation must not be repeated more than once a year, otherwise the gold will most certainly be rubbed off and the china spoilt. When the plates, etc., are put away in the china closet, pieces of paper should be placed between them to prevent scratches on the glaze or painting, as the bottom of all ware has little particles of sand adhering to it, picked up from the oven wherein it was glazed. The china closet should be in a dry situation, as a damp closet will soon tarnish the gilding of the best crockery.

In a common dinner service, it is a great evil to make the plates too hot, as it invariably cracks the glaze on the surface, if not the plate itself. We all know the result—it comes apart; "nobody broke it," "it was cracked before," or "cracked a long time ago." The fact is, when the glaze is injured, every time the "things" are washed the water gets to the interior, swells the porous clay, and makes the whole fabric rotten. In this condition they will also absorb grease; and when exposed to further heat the grease makes the dishes brown and discolored. If an old, ill used dish be made very hot indeed, a teaspoonful of fat will be seen to exude from the minute fissures upon its surface. These latter remarks apply more particularly to common wares.

As a rule, warm water and a soft cloth are all that is required to keep glass in good condition; but water bottles and wine decanters, in order to keep them bright, must be rinsed out with a little muriatic acid, which is the best substance for removing the "fur" which collects in them. This acid is far better than ashes, sand, or shot; for the ashes and sand scratch the glass, and if any shot is left in by accident the lead is poisonous.

Richly cut glass must be cleaned and polished with a soft brush, upon which a very little fine chalk or whiting is put; by this means the luster and brilliancy are preserved.

Household Hints.

The following recipes have, most of them appeared in this paper, but to the *English Farmer* is due the credit of printing them in the following order:

If you have been pickling or handling acid fruit and have stained your hands, wash them in clear water, wipe them lightly, and, while they are yet moist, strike a match and shut your hands around it so as to catch the smoke, and the stain will disappear.

Wet the spots of iron rust on muslin or white dress goods thoroughly with lemon juice, then lay in the hot sun to dry. Repeat the same if the color is not removed by one application. When dry, rinse in clear, cold water. Lemon juice cannot be used on colored goods, as it will take out printed colors as well as stains. It will remove all kinds of stains from white goods.

Dusting articles of steel, after they have been thoroughly cleaned, with unslacked lime, will preserve them from rust. The coils of piano wires thus sprinkled will keep from rust many years. Table knives which are not in constant use ought to be put in a case in which sifted quicklime is placed, about eight inches deep. They should be plunged to the top of the blades, but the lime should not touch the handles.

To remove mildew, make a very weak solution of chloride of lime in water (about a heaping teaspoonful to a quart of water), strain it carefully, and dip the spot on the garment into it; and if the mildew does not disappear immediately, lay it in the sun for a few minutes, or dip it again into the lime water. The work is effectually and speedily done, and the chloride of lime neither rots the cloth nor removes delicate colors, when sufficiently diluted, and the articles rinsed afterwards in clear water.

The white of an egg has proved, of late, the most efficacious remedy for burns. Seven or eight successive applications of this substance soothe pain, and effectually exclude the burn from the air. This simple remedy seems preferable to collodion or even cotton. Extraordinary stories are told of the healing properties of new oil, which is easily made from the yolks of hens' eggs. The eggs are first boiled hard, and the yolks are then removed, crushed, and placed over a fire, where they are carefully stirred until the whole substance is just on the point of catching fire, when the yolk will yield nearly two teaspoonfuls of oil. It is in general use among the colonists of South Russia as a means of curing cuts, bruises, and scratches.

At this season of the year, it is important for all housekeepers to be on their guard against the insidious attempts of the various species of ants and the detestable cockroaches to invade the kitchen and pantries or store rooms. Sprigs of wintergreen will make the small red ants leave their cherished haunts. Borax powdered and put into the crevices where cockroaches abide will finally cause them to disappear; but we have found concentrated lye, melted into a sort of paste and applied with a knife, a more expeditious mode of destroying these noxious insects. Scalding alum water is also certain death to cockroaches.