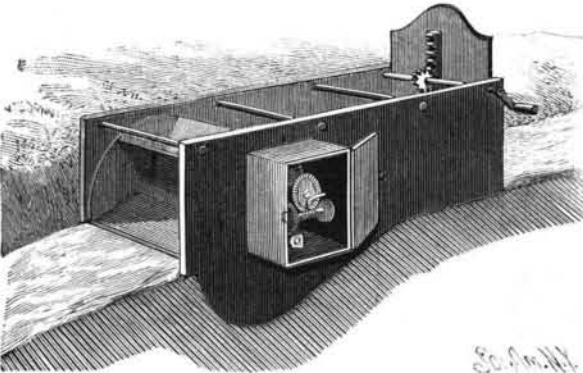
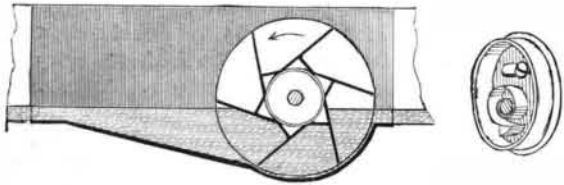


A ROTARY WATER METER.

The improved meter shown in the illustration, designed more especially for use in irrigating ditches, is adapted to accurately measure and register the quantity of water used, no matter how much or how little it may be, and however it may vary through the day or night. A flume set in the ditch or channel through which the water flows has near its discharge end a pit in which is journaled a wheel, the circular ends of which fit closely to the sides of the flume, as shown in the sectional view, and the wheel shaft being connected



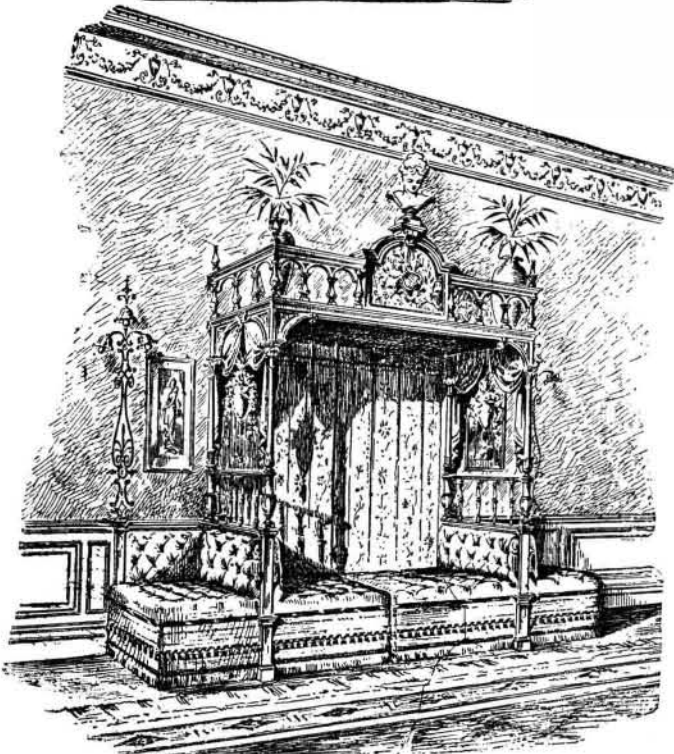
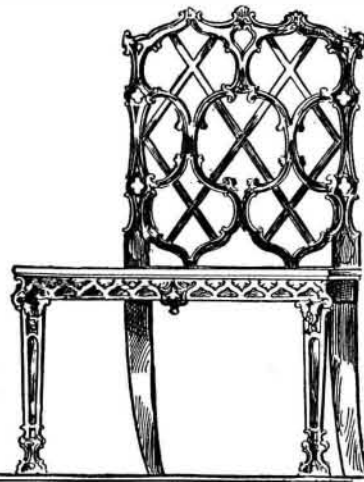
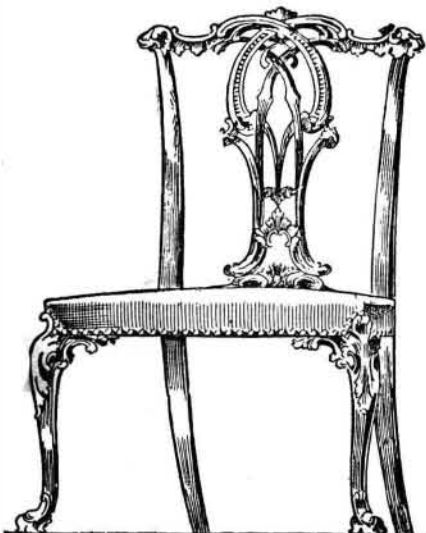
WOOLLENS' METER FOR IRRIGATION DITCHES.

with a suitable counting or recording apparatus. The construction is such that one of the several buckets will always be in the pit, and, the bottoms of the inlet and outlet of the flume being on a level with the bottoms of the buckets, no one of the buckets can discharge until it has been completely filled. The small figure represents a device to prevent the wheel being turned backward. Both the register and detent are preferably kept under lock and key to prevent tampering with the meter, and the stopping of the measuring wheel prevents any further flow of water. The register is designed to keep a record, without further attention, of all the water which can go through for at least thirty-five days and nights, the wheel having a velocity corresponding to the volume of water passing through it.

Further information relative to this improvement may be obtained of the patentee, Mr. Theodore Woolle, Jr., Cheyenne, Wyoming.

ARTISTIC AND COMFORTABLE FURNITURE.

The central figure in the accompanying illustration represents a novel arrangement to conceal two ugly



ARTISTIC AND COMFORTABLE FURNITURE.

doors, while allowing one or both to be opened if necessary. The divan in the center is divided, and is formed in two seats, with backs, which can be used in any part of the room. The doors are covered by a curtain, with a brass rod, and the fabric should be heavy enough to prevent draughts. The woodwork matches the dado.

The chairs shown are representations of the work of Chippendale, an English cabinetmaker, who attained distinction about a hundred years ago, and whose productions have ever since been copied, though but seldom with a reproduction of the spirit of the original, as Chippendale was an artist as well as a skillful handicraftsman. They represent both dining-room and drawing-room chairs, but are of a period when the line was not so sharply drawn between the articles of furniture appropriate for the two apartments respectively as is the case at present. We are indebted for our illustrations to the *Furniture Trade Review*.

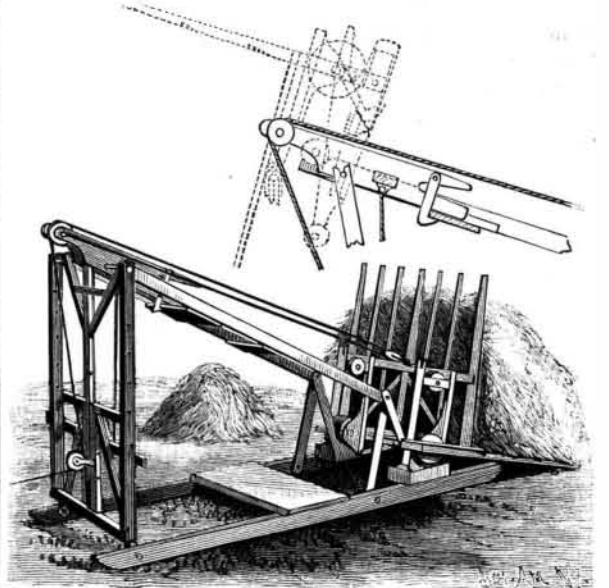
Photographic Properties of Cerium Salts.

Messrs. A. and L. Lumiere have found that light, under certain circumstances, rapidly reduces the persalts of cerium to the cerous condition, and the reaction may form the basis of interesting photographic processes. Gelatinized or highly sized paper is sensitized by a solution of ceric sulphate or nitrate, which colors the paper strongly yellow. The paper being now exposed under a transparent positive, the exposed parts become bleached by reduction to the cerous condition. On now treating with organic matters which the ceric compounds can oxidize into coloring compounds, a positive image is developed on the paper. Thus, an acid solution of phenol gives a gray print, aniline salts give green, alpha-naphthylamine blue, amido-benzolic acid brown. Cerium papers are more sensitive than iron or manganese papers.

AN IMPROVED HAY STACKER.

A machine of light and simple construction, which may be readily moved about a field and easily operated to deliver hay where required in building stacks of various sizes, is shown in the accompanying illustration, the small view representing in dotted lines the position of the carriage in delivering the hay. The improvement has been patented by Mr. Isaac Allen, of La Belle, Mo. The inclined tracks and the standards and uprights are pivotally connected, and the tracks at their upper ends are connected by a rod on which is pivoted a dumping arm carrying at its outer end an adjustably journaled friction pulley and at its inner end a latch. The standard holding the tracks at their upper ends is made in two sections, the uprights

of the upper section extending downward through those of the lower section, and being held at the desired elevation by means of pins, to give any desired inclination to the tracks. The carriage is preferably L-shaped and has a lower section which may assume a horizontal position when receiving its load, and an upper section which may assume a vertical position. Wheels are so located as to rest upon the platform or travel upon the track, and upon a central cross bar of the carriage is a pulley, a rope attached at one end to the outer end of the dumping arm passing over this



ALLEN'S HAY STACKER.

pulley, thence over a pulley in the rear extremity of dumping arm and downward over a third pulley near the base of the standard, and out from the machine, forming the draught rope. When the load of hay has been received, the carriage is first rolled or tilted on its wheels as the rope is drawn upon, the hay being thus rolled to the center of the carrier, which is then drawn up the track until the latch engaging the dumping arm is automatically released, when the load is dumped. The construction is such that the carriage is not liable to leave the track, and it is easily restored to position to receive another load.

For Closing Milk Bottles Air Tight.

An exchange accredits it to a Frenchman, and it consists simply of a disk of red India rubber with a conical finger or nipple on its under side. This goes into the neck of the bottle, and the milk is then boiled by immersing the bottle in a bath of boiling water. It is afterward cooled by withdrawing it from the water, and the partial vacuum inside the bottle sucks the cork firmly into the neck and effectually closes it. A metallic cover is then placed over all.

