

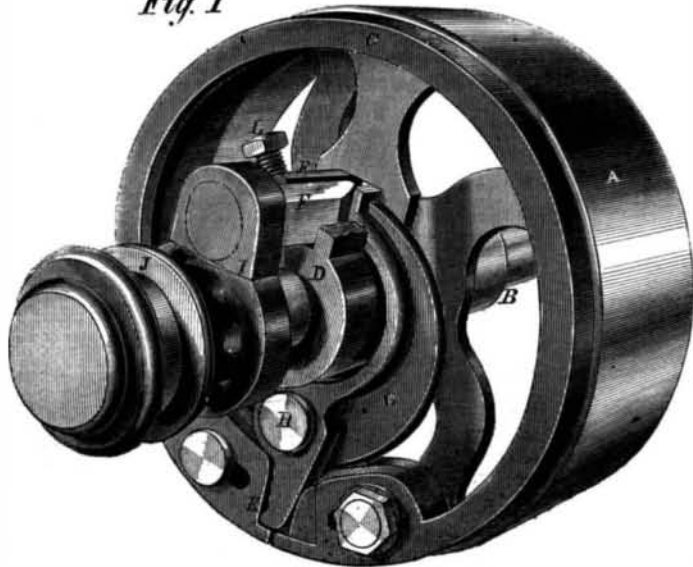
Improved Friction Pulley.

The old-fashioned clutch coupling used in most machine-shops is one of the most annoying and inconvenient attachments that could have been devised for the purpose. It is simple in its construction, but noisy, violent in its operation and not at all reliable. Sometimes the revolving dogs fail to catch the spurs on the fixed pulley when the bar is thrown over, and the machine to be stopped runs longer than the operator wished, and in all likelihood spoils his work.

This improved friction pulley is open to none of the objections above mentioned, as it is simple in construction, noiseless in its operation (a very great point, by the way), and exceedingly efficient; these points everyone will concede who examines the accom-

panying engravings. The pulley, A, is loose on the working shaft, B, and is bored out slightly taper on the inner circumference of the rim; in this bored out portion, the wheel, C, fits. On the hub, D, of this wheel there are two short jaws, E, one of which is broken off in the engraving, which jaws carry a square bolt, F, between them; this bolt is slightly rounded on one end; the rounded portion bears against the end of a curved lever, G, which has its fulcrum at H. The

Fig. 1

**BURLEIGH'S FRICTION PULLEY.**

for sizes over 20 inches diameter, 8 inch face is no doubt much cheaper; it will also save the wear and side thrust in starting and stopping."

This friction pulley is the invention of Charles Burleigh, of Fitchburg, Mass.: it was patented on July 8, 1862, and has been assigned to the "Putnam Machine Company." For further information address E. C. Tainter, Worcester, Mass.

The Government Laboratory.

In Philadelphia there is a Government laboratory, at which are manufactured all the compounded preparations used in the entire armies of the United States. The work conducted there gives employment to about 225 hands, male and female. The manufacturing facilities provided here are a decided curiosity. The drugs are purchased in a crude state, and every specimen is tested by chemical analysis. The chemical and manufacturing apparatus, stills, &c., are all of the first order of excellence and completeness. So perfect are the resources of the laboratory that the glass stopper of the bottles are ground upon the premises, and the bandages for wounds are woven in the establishment upon spindles provided for the purpose.

The cellar is devoted to the storage and bottling of wines and liquors for medicinal purposes. Whisky, brandy and wines are the liquors employed. None but the best are procured. The last purchase of whisky was selected from twenty-three samples, of which the rest were rejected.

The first floor contains the analytical laboratory, the mill rooms and the packing room. The microscopes are of the most valuable character, and the balances adjusted with unerring nicety. The mill room has six mills, with bolting cloths and appurtenances complete. In these, crude drugs are pulverized and prepared for administration. A long one-story building behind the mill room is devoted to the preparation of tinctures and extracts; of these the production is enormous. The contents of the largest drug house would compare very insignificantly with the weekly production.

The second floor is a vast pill manufactory, where huge masses of mixtures are divided into globules by the delicate manipulation of soldiers' wives, widows and children. Plasters are also made here by the thousand, and about ten thousand bandages per day

beside. The bandage-making apparatus is unique. There is nothing like it elsewhere in existence. This part of the establishment is exceedingly curious and interesting. It has saved the Government vast sums of money hitherto wasted, and gives to the physicians at all times remedial agents of reliable quality and standard.

Nothing is wasted by leakage or evaporation, and corks are discarded in favor of ground glass. The third floor is the filling department, where all the fluid medicines and powders are bottled. A dumb-waiter conveys them to the packing room below. Each bottle is packed in a separate paper box, surrounded by saw-dust. Breakage, therefore, is impossible. A fire-proof building in the yard is appropriated solely to the distillation of ether and chloroform. Another long one-story building, in five apartments, is used for the preparation of articles requiring direct heat. Everywhere else throughout the building steam is used. The motor is an engine of twenty-five horse power. The whole concern is entirely complete and independent in itself, and is worthy of any nation in the world. A wash-house in the yard alone gives employment to eleven girls in washing bottles for daily use.

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