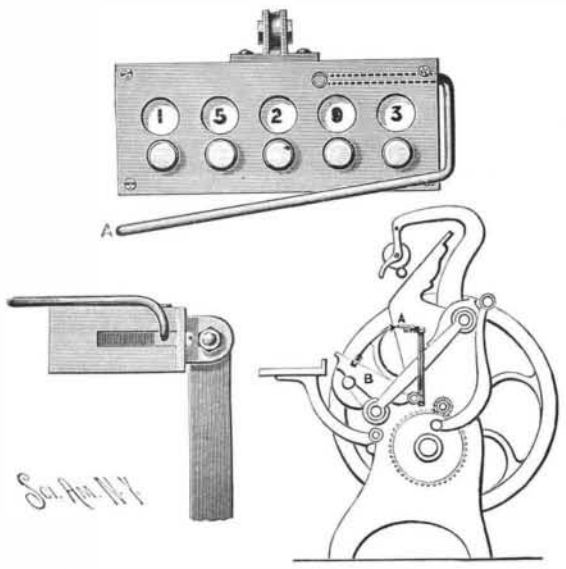
A COUNTING ATTACHMENT FOR PRINTING PRESSES.

This improved counter, which is adapted to automatically register each impression of the press, may be attached in such a way as to be easily thrown into operative position and easily tilted back out of the



CLAYTON'S PRINTING PRESS REGISTER.

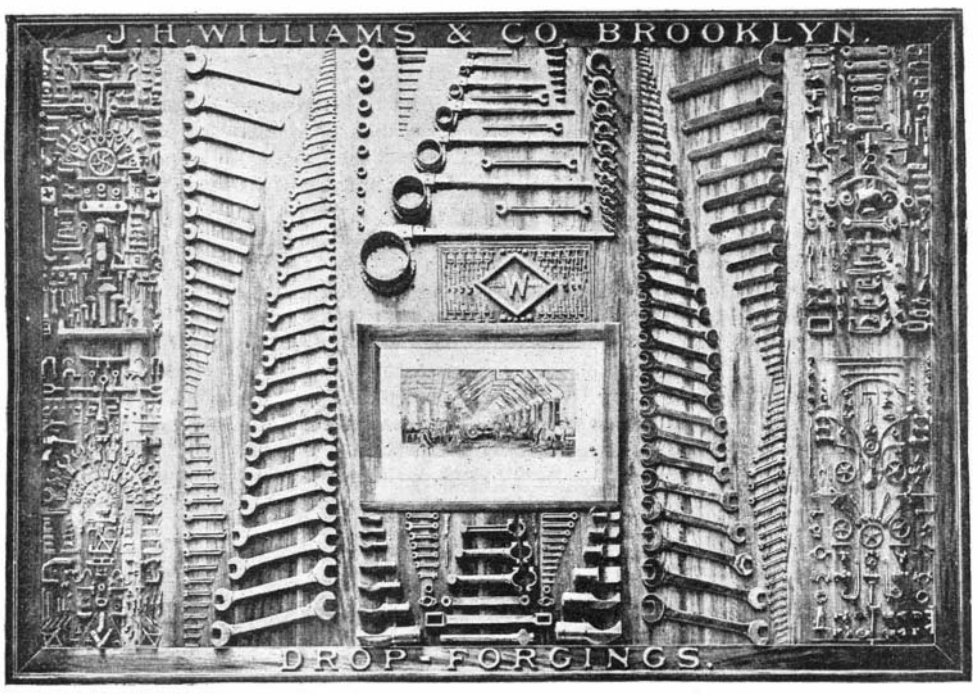
way, operating only when the press is actually printing, and not registering when the "throw-off" is used. The improvement has been patented by Mr. Herbert D. Clayton, of the *Hill City Reveille*, Hill City, Kansas. The counter is of the usual kind, with registering wheels and knobs for setting them, and it is operated by a lever which hangs down at a slight inclination to the bottom of the case, the lever being bent upward and laterally at one end, and finally entering a slot in the case, where its inner end is pivoted. A front view of the counter with its attachments is shown in the figure at the top of the picture, a side view being shown in the figure at the left, and the position of its attachment to the press on the right. On the top or back of the case containing the counting mechanism is a plate with projecting lugs pivoted to the upper end of a standard secured to one side of the frame of the press, the standard extending upward to a point near the path of the platen, so that when the case is swung into position for registering, its lever, A, will extend into the path of a finger or pin on the platen, B, of the press. If the counter is not to be used, it may be readily tipped over to the back side of the standard, out of the path of the finger. When the throw-off is used, the platen does not quite touch the type, and the finger and lever are so adjusted as not to come into engagement with each other except when an impression is actually made, or when the throw-off handle moves at the side of the platen the finger may be attached to the handle. The device is very simple, compact and inexpensive, can be readily attached to any job press, and the figures are always in plain sight of the pressman, who can at any time tell at a glance just how many sheets have been printed.

A Bicycle Fire Engine.

Experiments with a bicycle fitted out with a small chemical tank and fire ax are being made by a South Boston fire company. The bicycle has cushion tires and, with its whole outfit, weighs about sixty pounds. The tank holds about two gallons of chemical, which amounts as an extinguisher to about twelve pails of water.

DROP FORGINGS AT THE FAIR.

Aside from the general commercial interest which attaches to an international exhibit, the displays that are distinctive by virtue of their arrangement and class leave enduring impressions. A large wall space in Section C, of Boiler House extension, Machinery Hall, has made for J. H. Williams & Co., Brooklyn, N. Y., an exceptional place for the display of drop forgings. Looking from the main floor through the arched ways leading to the extension, this exhibit, mounted on a highly polished selected sycamore board, 16 × 22 feet, immediately arrests the attention of sightseers and invites a closer inspection. In a central position is a splendidly executed water color illustrating the interior of one of the best and most completely equipped forges in the country. Here, too, in this painting, is partially accomplished the illustration of methods scarcely known to the uninitiated. Drop forging has become the commercial definition of this art; but if we said "blacksmithing by machinery," it would be a literal description of the product, and greatly aid an interested public in comprehending the advanced methods in this line of manufacture. In addition to the illustration of a forge equipment, J. H. Williams & Co. have not, as far as it seemed practicable, overlooked the means necessary to further develop interest in an industry so important and still so young. To this end, and in addition to the wall exhibit, will be found dies, showing the impress of different articles and the forgings themselves in various stages of finish. A little study of the special forgings in any of the four artistically arranged panels devoted to this department of their wares suggests at once how it has been possible to manufacture the peerless and up-to-date American bicycle. Very much of the enviable reputation of this country for its unequaled sewing machines, guns and general small firearms, and, indeed, of all first-class machinery, is largely attributable to uniformly excellent drop forgings of a class supplied by this firm. The display of Brock's chain wrenches, engineers' wrenches, lathe dogs, collars, machine handles, etc., their staple articles of manufacture, well illustrates the rapid advances made in this age of improved tools and machinery. The engineers of the Edw. P. Allis, Frazer & Chalmers and Russell & Co.'s engines are showing with especial pride smaller boards equipped with this company's engineers' wrenches.



THE WORLD'S COLUMBIAN EXPOSITION—DROP FORGINGS EXHIBIT OF J. H. WILLIAMS & CO. BROOKLYN, N. Y.

A WONDERFULLY CHEAP WATCH.

An American lever movement watch which will ordinarily keep good time, and which is sold at retail for $1.75, is shown in the picture. It has a "Columbus case" of special merit in point of design and workmanship, finished to represent either plain or oxidized silver or gold. The chains to go with this watch are made of a series of embossed medallions representing the heads of Columbus, Washington, Lincoln, Grant and Sherman. These "Columbus souvenirs" are made by Messrs. R. H. Ingersoll & Bro., No. 65 Cortlandt Street, New York City.

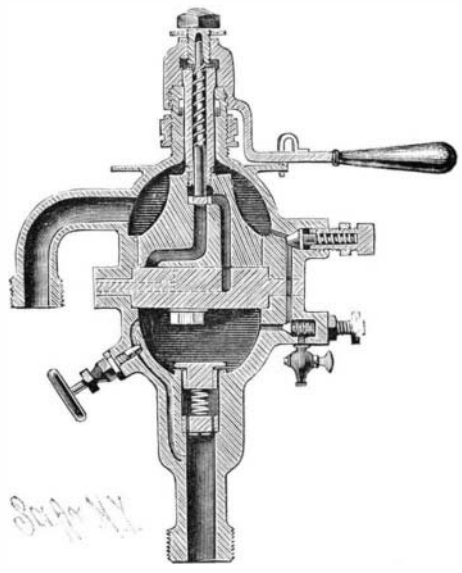
THE "COLUMBUS SOUVENIR" WATCH AND CHAIN.

The Midwinter Fair.

Ground was broken August 24 in Golden Gate Park, San Francisco, for the California Midwinter International Exposition in the presence of 50,000 persons. It is determined to make this fair a success in spite of the present financial troubles. Propagandists have already secured numbers of exhibits from foreign countries, and some of the buildings will, doubtless, be ready to receive exhibits by the time the Chicago Fair closes.

AN IMPROVED BRAKE VALVE.

The valve shown in section in the illustration is so made that it is not likely to clog or get out of order, and its construction is such that successive regular reductions may be easily made in the pressure of air in the train service pipe, it being adapted to automatically act on the governor of the air pipe from pressure either above or below the main valve. The improvement has been patented by Mr. Walter O. Pelham, of No. 313 West Munson Street, Denison, Texas. An elongated two-part casing forms upper and lower chambers of the valve, the parts having flanges held together by bolts, and the upper part of the casing having an inlet connecting with the main reservoir, while the lower part has an outlet pipe to be coupled to the train service pipe. A central stationary flat seat on



PELHAM'S ENGINEER'S GRADUATING VALVE.

which the main valve turns has a service port and an outlet port leading to the outer air, a face port in the valve registering with the service port, while a port leads from the face port to a chamber in the valve, the latter port being normally closed by a spring-pressed pop valve. A discharge port opening from the side of the chamber registers with the outlet port of the valve seat. An upwardly extending hollow stem secured to the valve is connected with a cap screwed to the casing, the cap being provided with a handle and turning with the main valve stem, and serving also as an abutment for the spring of the pop valve. The handle has a spring catch adapted to engage notches of a graduating plate marked off in the usual manner, as "full release," "running position," "laps," "service," and "emergency;" but between the lap and the emergency mark is a succession of five-pound marks, enabling a positive and accurate reduction of five pounds to be made in the pressure of the train pipe at each movement of the handle or lever from one notch to another. A connection with the governor is made through valve-controlled ports of both the upper and lower chambers in the main casing, giving an automatic double control, the excess of pressure in either part of the casing causing the governor to be acted upon. If the train parts, the pressure in the main reservoir will not be reduced, and excessive pressure is generated when the brake handle is in running position, the excess pressure acting on the governor of the pump. The improvement is designed to place the train brakes at all times under the complete and ready control of the engineer.

A TELEGRAPH cable has lately been laid between Appledore, Island of Shoals, and the main land near Portsmouth, N. H. Distance 6½ miles.