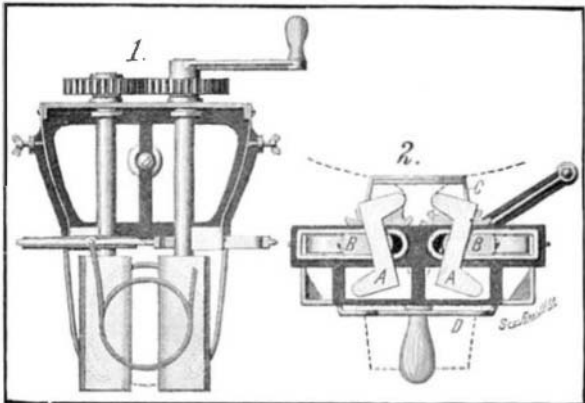




A SIMPLE MILKING MACHINE.

In the accompanying engraving we illustrate a milking machine of exceedingly simple design, which may be quickly assembled for use, and readily taken apart for renewal or repair. Fig. 1 shows a plan view of the machine, while in Fig. 2 a side view is presented, illustrating the method of operation. In this view the

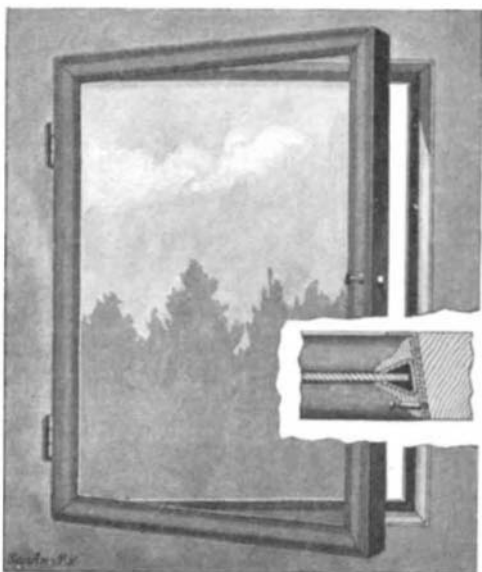


A SIMPLE MILKING MACHINE.

udder and one of the teats are indicated by dotted lines. It will be observed that milking is done by a pair of blocks, A, which are practically Z-shaped in cross-section. By reference to Fig. 1, it will be seen that these blocks are mounted on a pair of shafts, which are geared together at one end and provided with a crank handle, by which they may be rotated. The shafts are mounted to swing laterally in a slot in the frame just back of the blocks, but are normally pressed inward or toward each other by a pair of leaf springs provided with head pieces, B, which bear against the shafts. A ring of spring wire, C, extends above the milking blocks, and below them is a wire frame, D, adapted to support a milk pan or pail, as shown in dotted lines. In use the machine is held by the handle shown at the bottom of Fig. 2, and the guide ring, C, is slipped over one of the teats. The latter will then project between the milking blocks, and when the crank is turned, the blocks will revolve, exerting the necessary downward squeezing pressure to draw the milk from the udder. The spring pieces, B, permit the milking blocks to spread apart to any required distance to properly receive the teat between them, and the spring wire guide, C, presses upward against the udder, and thus assists in causing the discharge of milk therefrom. A patent on this milking machine has been granted to Mr. Young Stothard, of Indianola, Neb.

GLASS-FRAMING ATTACHMENT FOR WINDOW SASHES.

Windows as ordinarily constructed are difficult to clean without exposing the operator to danger. Furthermore, the usual sliding sash construction does not permit of opening more than one-half of the window at a time, so that it is impossible to get the complete ventilation afforded by the old casement windows. A recent invention is herewith illustrated, which in a very simple manner overcomes the above-mentioned



GLASS-FRAMING ATTACHMENT FOR WINDOW SASHES.

defects. The glass is mounted in a frame, which is hinged to the window sash in such a manner that it can be swung into the room, while the sash remains in position in the window frame. This enables both sides of the glass to be cleaned without the slightest

danger to the operator, and when the glass is swung open for ventilation purposes, it will be evident that the entire window frame is uncovered. The glass-carrying frame is preferably made of light steel strips, as indicated in the section view. In this manner a very strong construction is provided, which is at the same time very light, and does not obstruct an appreciable amount of light. The metal frame is covered by a molding, which harmonizes with the window sash. The window sash is provided with a lining plate formed at the outer edge with a flange, against which the glass frame lies when in closed position. The frame is provided with a spring catch at one side, to keep the glass frame closed. It will be obvious that the sash may be mounted to slide in the window frame as usual. The window may thus be lowered or raised to any extent desired. In this way the advantages of the sliding sash and casement windows are combined. A patent on this construction has been granted to Mr. Charles Yager, care of Louis Baerlein & Co., 56 Lispenard Street, New York city.

Brief Notes Concerning Patents.

Capt. Hamilton Ezra Smith, an inventor of national reputation, died lately at Salina, Kan., where he had been residing for two years. He was once a Missouri River steamboatman, and while engaged in this business had his attention attracted to the indifferent means of preparing cotton for shipment, and built the first machine for making the round cotton bale. He is also said to have been the inventor of the first washing machine, which was responsible for his giving this branch of the machine business considerable attention, and resulted in the invention by him of a number of pieces of laundry machinery, which are to be found at the present time in all the larger laundries of this country. At one time, while residing in New York, he figured in reform politics, and took an active part in the fight against the ring rule of "Boss" Tweed. Later in his life he resided in Philadelphia, where his wife died six years ago, and his body was shipped to that city for interment beside that of his life partner.

A great improvement in the manufacture of pins has recently been made in the machine devised by C. J. Brosnan, of Springfield, Mass. The features of the machine are not yet divulged by the inventor, but he says that by its use it will be possible to point and head three hundred pins a minute in a manner far superior to any of the American machines at present. The best machine at present in use is said to have a capacity of about sixty pins per minute. An auxiliary machine will put these pins in papers at the rate of thirty at one operation, which is very much faster than the present process. The best pins sold in this country are from an English factory, which seems to control the manufacturing machinery, but Mr. Brosnan claims that with his invention, the American end of the industry will soon outstrip the English in quantity and quality.

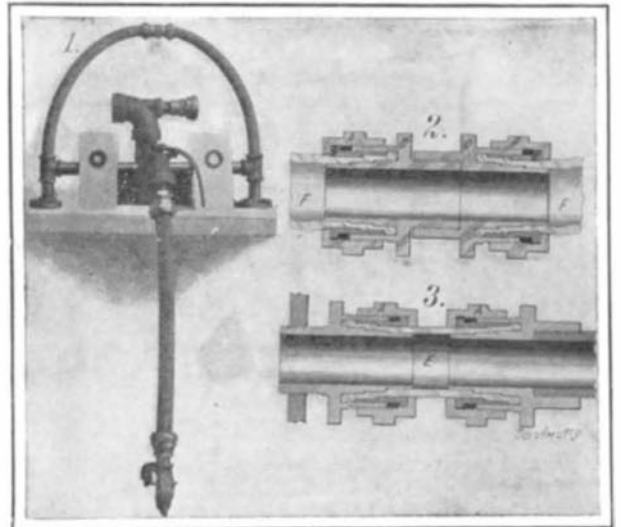
A NOVEL WAVE MOTOR.

A wave motor of novel design has recently been invented by Mr. Juan L. Ariztia, of Iquique, Chile. This motor is arranged to be operated by both the vertical and the lateral movements of the waves, thus utilizing every motion of the water. It comprises a rigid frame, which supports a platform overhanging the water. On this platform a number of cylinders are mounted, each with a piston connected to one of two rocking frames below. Each piston rod is formed of sections connected by ball-and-socket joints. One of the rocking frames is pivoted to the main or rigid frame of the wave motor, and the other rocking frame is pivoted within this first rocking frame, but with its axis at right angles thereto. The inner rocking frame is thus afforded a universal motion. To the inner frame a pendulum rod is attached, which carries at its lower end a large float immersed in the water. The waves act to sway the float, thus rocking the frames with which it is connected, and these in turn operate the pistons with which they are connected. The universal joints on the piston rods permit the same to yield to lateral motion, and to transmit only vertical motion to the pistons. In addition to the main float an auxiliary one is provided, which is adapted to slide freely up and down on the pendulum rod. Universally-jointed connections are provided between this float and a set of pistons on the platform. Only one such piston and connection are here shown, though it is obvious that a number might be used. The auxiliary float makes use of the vertical motion of the waves, and will be operated by the ground swell when the surface of the sea is comparatively calm. The apparatus acts as a third-class lever transmitting

power direct to the pistons or pumps. The power may be regulated by lengthening or shortening the pendulum rod.

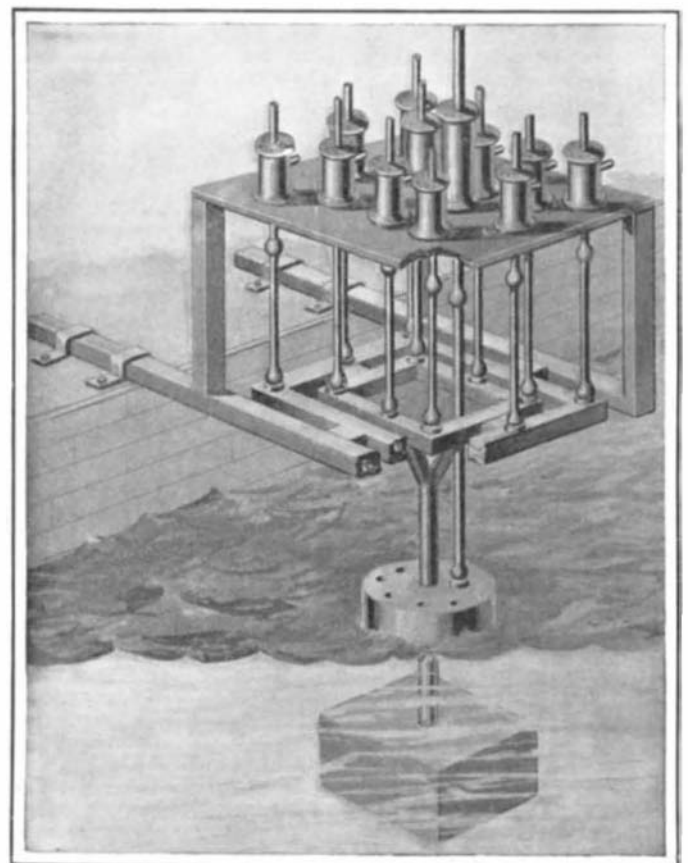
A CONVENIENT PIPE COUPLING.

In nine cases out of ten, when an air hose bursts, it will burst at the end of the nipple, on which the hose is secured with iron band and bolt. Now, it is impossible to remove the hose without cutting it, which makes it too short for further use, but even if long



A CONVENIENT PIPE COUPLING.

enough there is no way of reconnecting it. In the accompanying illustration we show a new type of hose coupling, calculated to overcome these objections. If the hose bursts at the nipple, it can be removed quickly, and after cutting off a short piece it can be reconnected. The two section views of our illustration show the device as applied in one case to coupling two flexible hose sections, and in the other to connecting a lead pipe section with an iron pipe. In each case the coupling members used are identical, and are varied only in their relative positions. These members consist of two cover sleeves, A, two wedge sleeves, B, and two clamping members, C. Each clamping member is formed with two concentric tubular extensions, between which the hose, F, is fitted. The wedge sleeve, B, is then forced in between the extensions over the hose, and firmly wedged in place by the cover sleeve, A, which bears against the end of sleeve, B, and is threaded onto the outer extension of the clamping member. The face of the inner tubular extension and that of the wedge sleeve, B, are stepped so as to insure a firm grip on the hose, F. One clamping member is formed with a threaded tubular shank, and the other with a correspondingly threaded socket, so that when these members have been respectively attached to the hose sections, they can be screwed together to couple the hose. In Fig. 3 the coupling members are reversed, and the illustration shows the tubular shank threaded into an iron pipe, while the socket receives another pipe. The coupling members are clamped to opposite ends of a section of lead pipe. Mr. Alfred Higginbotham, of Lock No. 4, Washington County, Pennsylvania, is the inventor of this improved coupling.



A NOVEL WAVE MOTOR.