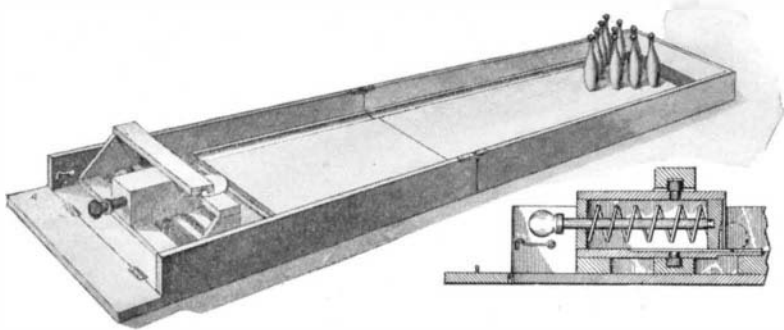


PARLOR BOWLING ALLEY.

There is always a demand for a good "parlor" game and inventors have found it quite profitable to modify many of the popular outdoor sports and so arrange them that they could be played in the sitting room. An inventor has recently thus modified the game of bowling or nine pins. Bowling cannot be called an outdoor sport, yet it is not a parlor game, because it requires a specially built and expensive bowling alley. To play the "parlor" game, a miniature bowling alley has been provided which may be folded up into small compass and stored away without taking up much room. In use the miniature alley may be placed on any kind of a table. It comprises at one end a device for projecting or shooting the balls at the pins which

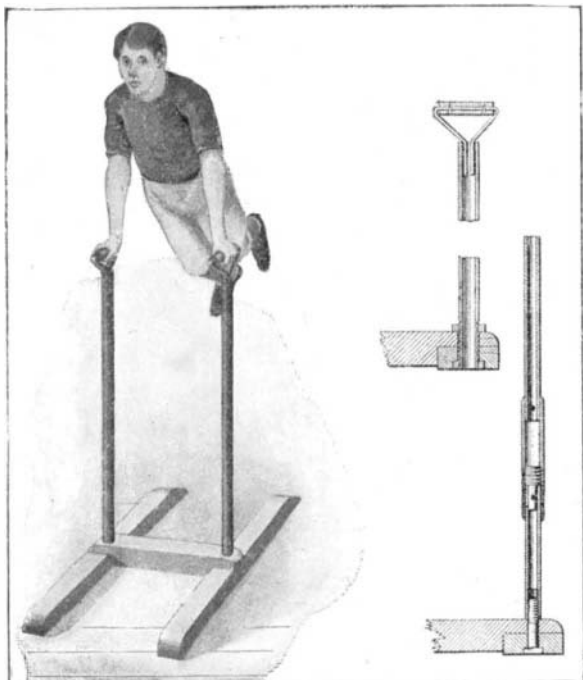


A PARLOR BOWLING ALLEY.

are arranged at the other end. The usual dead runs are provided at the side of the alley; but blocks are supplied with the apparatus for filling up these dead runs, to make a solid alley such as is used in playing the German game of nine pins. The shooting device consists of a casing, open at the front end and fitted with a piston. The piston rod projects through the rear wall of the casing. In operation the piston is drawn back and a ball is fitted into the shallow groove formed in the face of the piston. On releasing the piston it is thrown forward by action of the coil spring in the casing, shooting the ball against the pins. Provision is made for aiming the ball wherever desired. The piston casing is formed with lugs at top and bottom, which are received in grooves cut in two bars extending transversely across the board. This permits the shooting device to be moved laterally to any desired position and it may also be swung on the lugs as pivots to any desired angle. Mr. Robert E. Phillip, of 1709 Pacific Avenue, Spokane, Washington, has just procured a patent on this miniature bowling alley.

IMPROVED EXERCISING MACHINE.

A simple but very useful improvement in exercising machines is shown in the accompanying engraving. The machine, which is in the nature of parallel bars, is so constructed that only two standards are employed, firmly supported at their lower ends. Hand grips are provided at the upper ends of the standards. The hand grips are so constructed that they may be turned in the standards at the will of the exerciser while exercising on the machine, or they may be removed from the standard when not required. At the same time the construction is such that when they are subjected



IMPROVED EXERCISING MACHINE.

to a direct downward pressure they will remain as stationary as though fixed in the standards.

The machine comprises an H-shaped base formed of two parallel side bars and a cross bar. The lower threaded ends of the two standards pass through the cross bar and the side bars at their points of intersection, and are provided with nuts, whereby not only are the standards secured to the base, but the members of the base also are firmly bolted together. The hand grips are each formed of flat spring metal bent to a triangular shape with two projecting legs which are fitted into the open upper end of the standard. It will be evident that by this arrangement the hand grips may be readily removed and, when in use, can readily be turned in their standards. This freedom of action permits all the movements practised upon the ordinary parallel bar to be carried out and also a number of movements impossible on the fixed parallel bars. We also show in one of our views another improvement consisting of an adjustable standard whereby the machine may be adjusted vertically within prescribed limits by turning a sleeve which is secured to the upper section of the standard and threaded onto the lower section. The inventor of this exercising machine is Mr. Frederick Bitter, of New York city, southwest corner of 32d Street and Third Avenue.

The electric fan has been a god-send in more ways than one. In the summer months it has been the means of making more tolerable the positions of the men compelled to labor in corners and portions of the office and shop remote from the little air which might find its way into the windows of the place. Besides this it

has been the means of equalizing, in a very great measure, the demands made upon the power companies. These fans create a very considerable drain on the product of these companies at a time when there is almost no demand for current for lighting purposes, with the result that the electric generating concerns have found it quite profitable to encourage their manufacture and use. With this in view almost all of the companies in the larger cities keep a number of the fans on hand for rental to their patrons. The latest thing in this line is a tiny construction, which fits in the socket designed for a lamp. This fan is of such simple construction that it costs but little, and is said to be quite effective in scattering the air. With the use of a plug and cord it can be placed wherever desired. It is said to consume only eleven watts, or five of them may be operated with the same consumption of energy as an ordinary 16-candle-power lamp. It is built only for 110 volts, direct current. The fan has an 8-inch sweep, and the blades have a speed of 1,600 revolutions per minute.

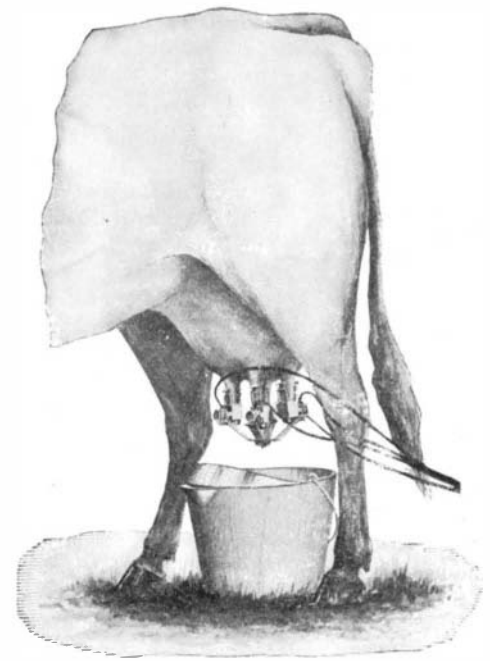
SHEET METAL VEHICLE WHEEL.

The accompanying engraving pictures a vehicle wheel which is made of sheet metal almost entirely. The construction, however, is such as to produce a very strong, shapely wheel which may be used either on a light or a heavy vehicle. The wheel is also so arranged that when in motion it will automatically lubricate the axle-spindle. The hub of the wheel which has the usual external form, is made hollow to receive the box bearing which, in turn, receives and rotatably supports the axle spindle. The space formed between the shell of the hub and the box bearing provides a suitable oil chamber for lubrication of the spindle. The oil passes through a perforation in the wall of the box which may be opened or closed to any extent by means of set-screw threaded through the shell of the hub. On the exterior of the hub two parallel radial flanges are formed to which the spokes are secured. The spokes are made of sheet metal bent to the form of channels of U-shaped cross-section. The flanges on the hub are formed to fit the spokes and consequently consist of series of semi-circular or U-shaped abutments. A pair of clamping rings serve to hold the spokes against these abutments. These rings are formed with radial flanges shaped to correspond with the abutment flanges to which they are riveted at intervals. At their upper ends the spokes are riveted to a U-shaped wheel-rim formed of sheet metal. The rim is braced at intervals by shouldered rivets. The method of joining the ends of the wheel rim is shown in Fig. 3, and consists in riveting the ends to a coupling sleeve inserted in the rim.

In assembling the wheel the coupling sleeve is riveted to one end, but is free to slide in the other. After the tire is shrunk on and the rim thereby compressed to the proper degree, the other end is riveted to the coupling sleeve. Fig. 2 shows a double or reinforced rim which is used for extra heavy work. Mr. John Lefler, of San Bernardino, Cal. (Box 223), is the inventor of this sheet-metal vehicle wheel.

MILKING MACHINE.

A rather novel machine for milking cows has recently been invented by Mr. Victor O. Johnson, of Pawnee, Oklahoma Territory. This machine is arranged to copy as nearly as possible the action of the hand when milking. A brace of four squeezers is provided, each resting in a box and all the boxes secured on a common frame but in such manner that they can easily be adjusted to any cow. Each squeezer consists of two flat spring metal plates connected at the bottom by a

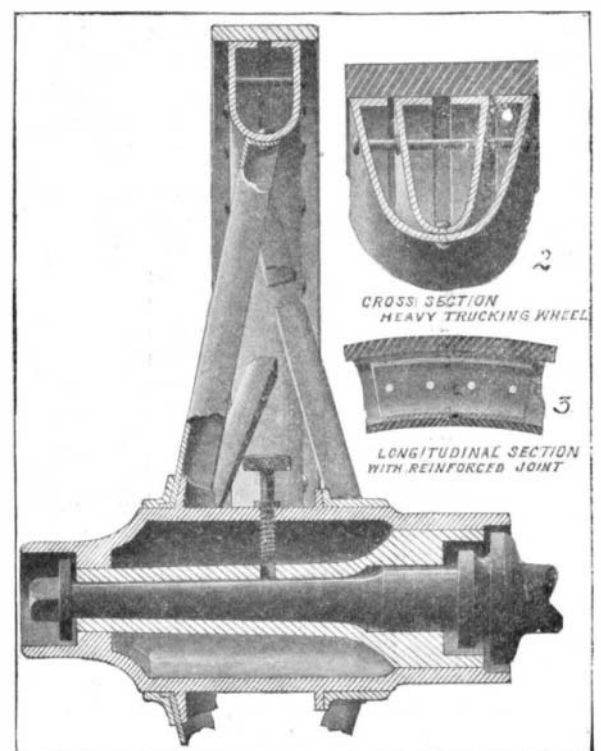


MILKING MACHINE.

U-shaped spring piece and each formed at the upper end with an inwardly-projecting U-shaped bend. These bends are, in operation, adapted to compress the teat at its upper portion to prevent the milk flowing back into the udder while the squeezer plates are moved together. The squeezer plates are provided with a rubber covering formed with ribs at the sides and thus producing channels corresponding somewhat to the form of the teat. The squeezers are operated by compressed air, the outer plate of each squeezer being connected to a piston operating in a small cylinder attached to the box of that squeezer. The plates at each side are formed with pins which project through curved slots in the side walls of the box and are secured to intermeshing segment gears mounted on the box. These segment gears cause the inner plate to move toward the outer plate when the latter is moved inward by the piston, and the pins coact with the curved slots to move the squeezer first upward and then downward while the squeezer plates are still advancing toward each other, thus copying very closely the action of the hand when milking.

Brief Notes Concerning Patents.

The collapsible lifeboat invented by Capt. Valdemar Engelhardt, a Danish sea captain, and which has already been the subject of a brief description in these columns, has recently received the official indorsement of the Board of Supervising Inspectors of Steam Vessels of the United States. This places this craft on the list of those which are recognized and approved for



SHEET METAL VEHICLE WHEEL.