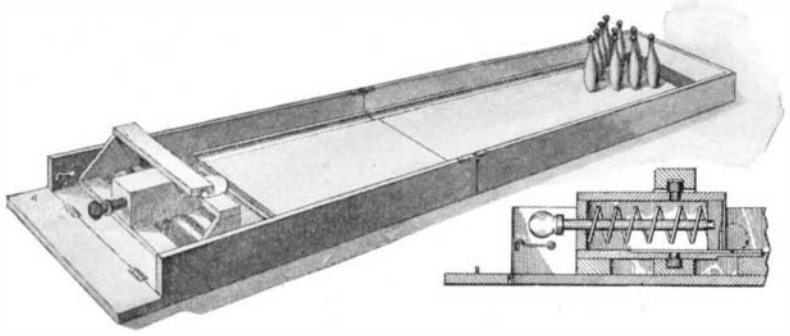
Patent Department

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

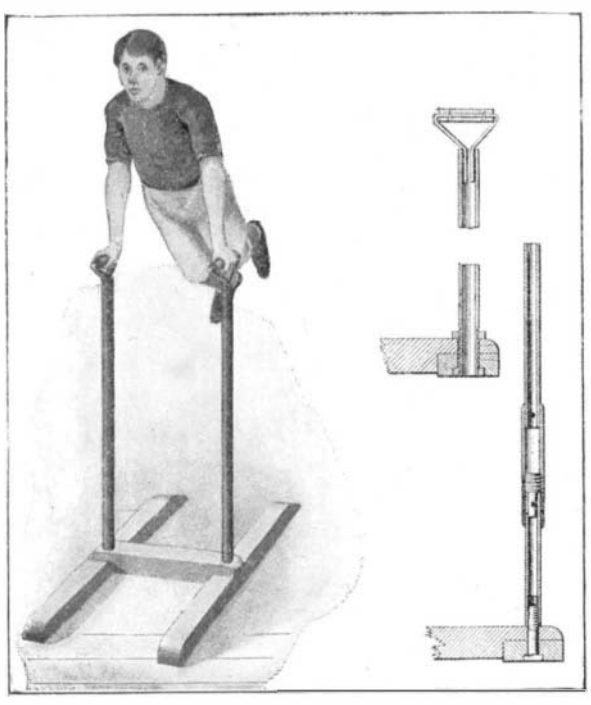


A PARLOR BOWLING ALLEY.

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 godsend 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.

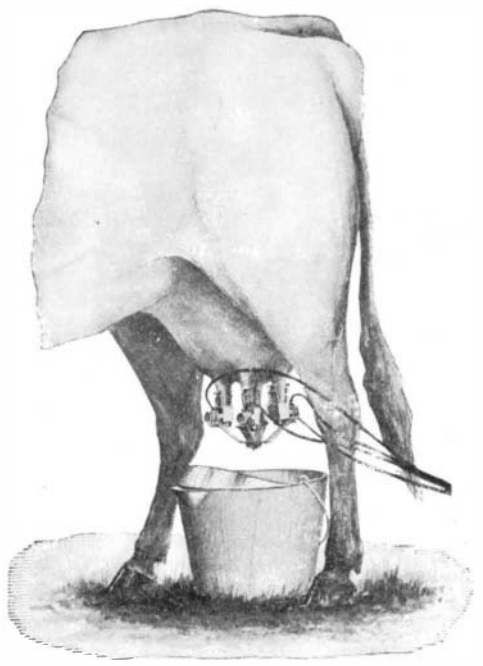
SHEET METAL VEHICLE WHEEL.

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

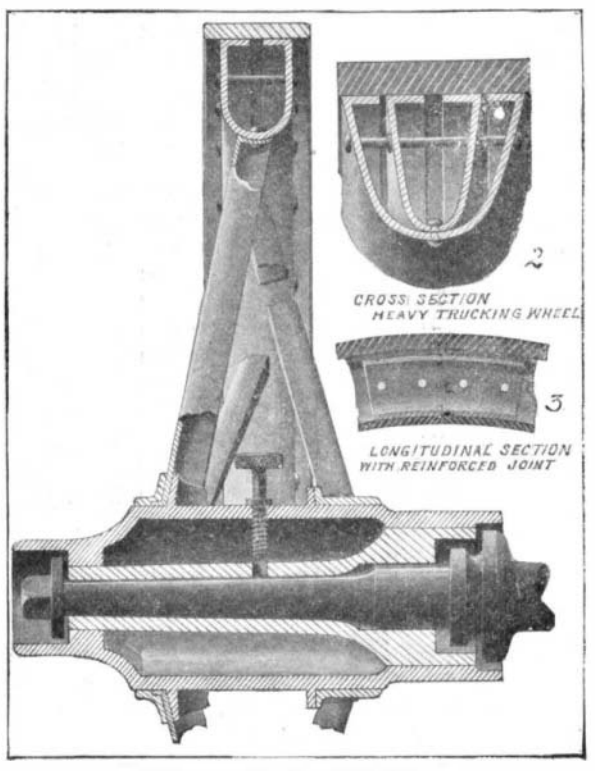


MILKING MACHINE.

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.

use on passenger-carrying vessels. The tests made for the government officials were very severe. The craft was first rowed up the East River for a considerable distance to try her speed, and then after this was found to be entirely satisfactory, twenty-five men were crowded onto her, and although the boat made use of on this occasion was only twenty feet long, she carried this unusual burden easily. The men were crowded to one side in an endeavor to upset her, but without success. Her cargo was then increased by the addition of 4,900 pounds of stone, which seemed to have very little perceptible effect. The compactness of this lifeboat is another remarkable feature. It is said that four of them can be nested in the space which is usually occupied by one boat.

Some of the European governments, which have at hand the means of making alcohol in large quantities at small cost, have undertaken to encourage the manufacture of spirits. The Emperor of Germany, for instance, has given the matter some considerable personal attention, and has offered prizes for efficient designs of engines and lighting apparatus making use of alcohol. The result has been that great strides have been made, and the new devices are used to quite a large extent. The same thing has been done to a minor degree by the Russians, but it has been discovered to be a lamentable fact that, as the manufacture of alcohol increased, the amount consumed as a beverage also grew lamentably larger and larger. The alcohol habit has taken such a hold on the Russians, that recently the Imperial Minister of Finance offered a prize of 50,000 rubles, which is equal to $25,750, for the discovery of some means by which the alcohol would be rendered so distasteful, that it could not be consumed in this manner. Pamphlets giving the conditions of the award have been distributed among the Russian consuls in the various countries of the world, and it is hoped to stir up a universal interest in the contest.

The Parisian scientist and inventor George F. Joubert has recently announced a discovery which will do much toward making the submarine boat a practicality. This is a means of renewing the air of the interior after the craft has gone below the surface of the water. This is done by the use of a substance called "oxylith," produced electrolytically, which has the power of giving off almost pure oxygen, when pieces of it are dropped into a quantity of water, in much the same manner as carbide of calcium acts under similar circumstances. A plant for the manufacture of the new product has been erected in the Isère district of France, where there is an abundance of water power. While there are many uses for a commodity of this character, its most promising field seems to be that referred to above, and in this connection it is said that it makes available the use of gasoline engines for propelling the boat even when entirely submerged. It is well known that gasoline offers the most economical and convenient fuel, but is only partially available for use on board these boats, because of the fumes which are given off; but with the use of "oxylith," this can be overcome, and the usual battery installation found necessary on these craft for driving while running below the surface can be dispensed with. The Joubert process has been fully described in these columns.

Quite a pretentious factory has been built at Knoxville, Tenn., for the purpose of engaging in the manufacture of several devices, which are to be made under the patents of Prof. Weston M. Fulton, of that city. Prof. Fulton is the local forecaster in charge of the United States Weather Bureau offices and observatory in that city, and by special arrangement with the government he is also instructor of meteorology at the University of Virginia. His invention referred to above has for its object the generation of power from the changes which are constantly going on in the temperature. The essential feature of his invention is the vessel holding the gases and liquids, which are acted upon by the atmosphere. He has designed a metal vessel for this purpose, with deeply corrugated sides, and he claims that this is capable of compression and expansion to a remarkable degree without impairing its usefulness. For the purpose of demonstration, the professor has one of these devices equipped for the work of raising a five-pound weight, which it does in a truly remarkable manner. It is contemplated to make these motors in connection with clocks and bread-raising machines, as soon as the factory is in running order. The clocks will never need winding, and the bread-raising machine will perform its functions in a very reliable manner and without the use of yeast. Public sentiment has of late demanded that bakers depart from the long-established custom of using yeast as a leaven for bread, and the "salt-rising" process is coming more and more into general use. This requires a higher and more uniform temperature, and artificial heat must be resorted to. It is claimed that with the regulator invented by Prof. Fulton, an absolutely even temperature may be obtained at any desired degree. The device is known as the "sylphon."

Legal Notes.

IMPLIED LICENSES AND THEIR LEGAL CONSTRUCTION.—The National Carbon Company, a manufacturer of carbons, employed Clarence M. Barber as a mechanical engineer on a salary. It was part of Barber's duties to devote his time and skill to the improving and cheapening of the process of manufacturing carbon, an essential step of which process was electroplating. While he was thus employed, Barber invented a valuable method for electroplating, and a machine for carrying out this method. He took out patents for both his method and his machine. Under his supervision, special buildings were erected at the works of the National Carbon Company, his employers, to accommodate seven of his machines, six of which were built and installed under his direction, and the seventh of which was installed after his employment had ended.

These were the facts in the case of Barber vs. the National Carbon Company (129 Fed. Rep. 370). The question presented to the Court was this: Had the National Carbon Company any right to use the seven machines which had been installed, and the patented process invented by Barber?

The precise terms of Barber's employment were somewhat indefinite. That his employers knew of his purpose to apply for a patent was most likely. Buildings were especially designed for the use of Barber's process, and apparatus was constructed under his direction, which the court thought were facts sufficient to raise the presumption that he intended to grant to the Carbon Company the right to use his process in connection with the machines, for which space in the several factories had been specially arranged with his knowledge and under his direction. The right of use presumed was the right to use such number of machines as had been prepared for, a right not limited to the life of the particular machine, but including renewals so long as the Carbon Company continued in the manufacture of carbons. The court therefore held that the scope of the implied license included the seventh machine, constructed after Barber was discharged, to occupy the place prepared for it under Barber's direction. His conduct was such in the court's opinion, that Barber had estopped himself from asserting that the use of his invention to this extent was an infringement of his right as a patentee.

ADDITIONS, OMISSIONS AND CHANGES—WHEN THEY CONSTITUTE INFRINGEMENT AND WHEN THEY DO NOT.—John Lenhart secured a patent in 1889, covering an adjustable sliding plate attached by means of a bolt and a slot in the plate, to the inner side of the mold board or share of a plow, to regulate its tilting. The plate described in the specification has a thin lower edge turned toward the share, so that, as it is depressed, it will pass under the edge of the share and cut the roots of grass under the turf. This patent, in an infringement suit brought by Lenhart against the Laurie Implement Company, was held to be infringed by defendant's device, and that decree was affirmed by the Circuit Court of Appeals (130 Fed. Rep. 122).

On appeal, the court held that defendant's device, which consisted of an adjustable sliding plate attached by means of a bolt and a slot in the plate to the inner side of a clip on the inner side of the mold board of a plow, to regulate its tilting, is the mechanical equivalent of Lenhart's device, although its lower edge is flattened in the form of a triangular shoe, so that it will not cut roots, and although it depends by the side of and not vertically under the edge of the plowshare.

This decision exemplifies the well-known principle of patent law, that infringement cannot be escaped by adding to or subtracting from a patented device, by changing its form, or by making it more or less efficient while still retaining its principle and mode of operation, and while attaining the same result by the use of identical or of equivalent mechanical means.

ASSIGNERS AS NECESSARY PARTIES TO AN INFRINGEMENT SUIT.—The McMichael and Wildman Manufacturing Company brought a suit against Ruth, alleging infringement of letters patent granted to Abner McMichael and Frank B. Wildman for automatic rib knitting machines. Among other things, the answer alleged that the plaintiff was not the owner of the entire patent, but that a third interest was owned by Lewis Jones. An instrument was offered in evidence signed by McMichael and Wildman in which they agreed, in consideration of Jones' having improved upon an invention of theirs, to transfer to him a third interest of all the improvements patented thereon, and also to transfer to him a third of any patents which might be issued to McMichael and Wildman in the future, provided that they had been developed at the expense of Lewis Jones. It will be noted that the instrument was wholly executory, that it was not an immediate assignment, but an agreement to transfer. Obviously, the instrument did not convey the legal title to a third of any existing patent. For that reason the court held that the plaintiff could not be required to litigate the question of establishing Jones' interest in this particular patent.

Attacking the question of infringement, the court was not convinced that the presumption of validity which arises from the granting of the patent was rebutted in this case. The defendant contended that the substitution made by the patentees did not require invention. It was a mere exercise of selection wholly within the domain of mechanical skill. If it were true that what was done by McMichael and Wildman did not require invention, but only the exercise of mechanical skill, the conclusion which the defendants sought to deduce from this proposition would, of course, be inevitable. But the court thought the creative faculty of the inventor, not merely the ingenuity of the skilled mechanic, was exercised in producing the patented combination, which was a knitting machine. The art had been already developed; the patentees brought to it nothing of a fundamental character. Nevertheless, in the court's opinion they did, by their improvements, create a construction which had never before existed and which has proved to be commercially successful.

The decree of the Circuit Court was placed wholly on its finding that the defendants had not infringed. But in that view the Circuit Court of Appeals did not concur. The latter court thought that the court below was not warranted in limiting the construction of the claims as it did.

A STRANGE ASSIGNMENT CASE.—The two suits brought by the National Cash Register Company against the New Columbus Watch Company and the Hallwood Cash Register Company, recently decided in a single opinion by the Circuit Court of Appeals (129 Fed. Rep. 114) are curious in more than one respect. It seems that the complainant purchased and took an assignment of an application for a patent which had been pending in the Patent Office for some four years. Six months before the filing of the application complainant had been in negotiation with the applicant and two other persons for the purchase of prior patents for inventions made by him relating to the same kind of machines, and issued to the three. He was then informed of an agreement between them by which, so long as it continued in force, the other two persons furnished the capital necessary to perfect and patent all inventions made by the inventor relating to the subject-matter and were to have an equal interest in the patents as a consideration. As a matter of fact the application bought by complainant covered an invention made under such agreement, and two persons who furnished the capital were each equal owners of a third interest. The Circuit Court of Appeals decided that the facts were such as to put the complainant on his guard and to charge him with notice of all that might have been learned by an inquiry prosecuted with reasonable diligence, and that no title was acquired to the patent subsequently issued which would support a suit for its infringement.

THE POWERS OF OWNERS OF UNDIVIDED INTERESTS IN PATENTS.—The owner of an undivided part of all the rights secured by a patent may without the consent of his co-owners grant a valid license to use the monopoly secured by a patent. A patent secures the exclusive right to use, and the exclusive right to sell the invention it protects. A grant of all these exclusive rights throughout the United States, a grant of an undivided part of all these exclusive rights, or a grant of all these exclusive rights throughout a specified part of the United States, is an assignment of an interest in the patent, by whatever name it is designated. A grant of any interest in or right under a patent less than these is a license.

Such is the monopoly granted by letters patent, that an exclusive licensee for the sale of articles embodying a patented invention or discovery may attach all such conditions as he sees fit to it unless made under his license. A contract may be made, binding a purchaser not to sell for less than a certain named price, nor to any other dealer who does not sign a similar agreement, and making a compliance with such requirements a condition of the license to use or lend the patented article.

The fact that an alleged infringing mechanical device lacks one of the functions of a patented device does not avoid infringement, where such function is not claimed in the patent.

It is a well-known principle in Federal Court procedure that the owner of a patent is not estopped to maintain a suit against the user of an article held to infringe by the Circuit Court of Appeals because of a contrary decision in another circuit in a suit against the manufacturer.—Eldred v. Breitwieser (C. C.), 251.