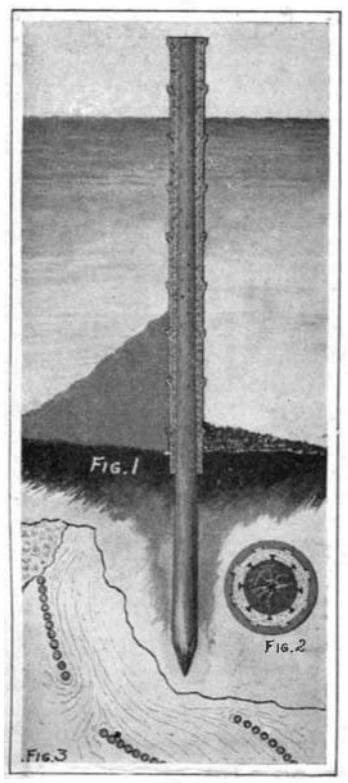
TRAINING WALL.

A recent invention of Mr. D. G. Ambler, of Jacksonville, Fla., has for its object the protection of piling from the ravages of the teredo worm, and it should be found very useful in southern rivers and harbors for training the course of currents. In the South Atlantic and Gulf States there are no ice fields to contend with, nor are there very heavy tidal or river currents, which would involve the necessity of using a heavy mass of stone to resist the great force exerted by them. Yet, owing to the teredo, it has been found impracticable to use wooden piling, and of late years reliance has been placed on dredging, which, though temporary in its results and quite expensive, has been considered cheaper than training walls built of yellow pine, as formerly. The present invention, however, provides a means for protecting the yellow pine pile, thus cheapening the training wall and making it permanent. This protection consists in surrounding the pile with terra cotta pipe sections fitted together, as illustrated, and leaving an annular space of a couple of inches between the wood and pipe. Before driving the pile the surface of the wood near the water line has headed nails driven into it every few inches, leaving the heads projecting, say, one inch. The space between the wood and the pipe is filled with Portland cement concrete. The concrete when set not only keeps out the worm, but, owing to its hold on the nails, cannot be detached by cracking in case of being struck by floating objects, such as lighters, vessels, or logs. To further provide against peeling of the pile piping or the concrete, the interior surface of the piping is formed with dovetail-shaped grooves, as shown in the sectional view, Fig. 2. Fig. 3 illustrates the method of forming the training wall with this protected piling. To prevent the ingress of the worm from below, growing out of scour, an ample riprap of stones and dead oyster shells is provided. The piles are driven very close to each other, producing a perpendicular stone wall proof against any attack of the worm, or from decay. We are informed that the power of these piles to resist any injurious stress has recently been certified by the Forestry Department of the Government as based on tests made by it.



TRAINING WALL.

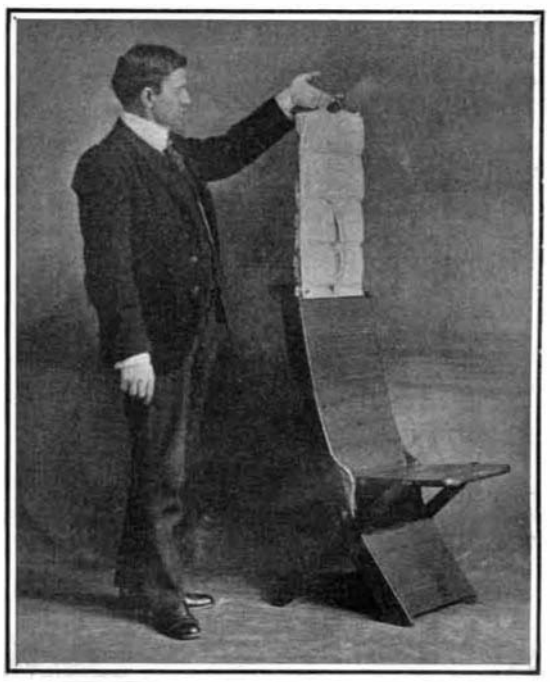
The Human Body as a Power Generator.

Some interesting data are contained in a recent issue of the Revue de Chimie Industrielle. According to researches of Prof. Fischer, the amount of heat given off by the food absorbed by a grown man and stored each day would be about 3,000 to 3,500 kilogramme-calories. The larger part of this amount is utilized in the body, for respiration, digestion, and for the various functions of animal activity, while about 300 kilogramme-calories are spent during a working day of eight hours for continuous mechanical work equivalent to 127,000 kilogramme-meters. As each horse-power hour is equal to 270,000 kilogramme-meters, the daily work of a grown man would be about 0.47 horse-power hour.

Under the above conditions the author calculates the cost-price of 100 horse-power in the case of man, of horses, and of machines. 250 workmen at 3 francs per day being necessary to yield this amount of work, the cost will be 750 francs in the case of human work; 10 horses doing the same amount of work, the expense will be 60 francs; while a gas engine involves a cost of 6 francs, and a gas motor of 3.50 francs. Hence the author concludes that the human motive force is a hundred times more expensive than mechanical energy.

COMBINATION CHAIR AND LIFE PRESERVER.

In the accompanying engraving we illustrate a novel chair adapted for use on pleasure boats and passenger steamers. The chair is of the ordinary folding camp-chair type, consisting of two parts hinged together, and on which the seat is supported. The back of the chair is hollow, forming a receptacle for a life preserver of the common cork type. The receptacle is closed by a lid, which provides a water-tight covering. Recent disasters have proved that cork life preservers must not be exposed to the weather, or they will soon rot and lose their efficiency; also, that they must not be packed away on the ceilings or other remote parts of the boat, where they are difficult of access. Both of these conditions are met in the present invention, for the life preservers are kept perfectly dry in the receptacles, and yet are ready for instant use in case of emergency. But the chair offers still another advantage, namely, that whether the life preserver be removed or not, the chair can be used as a life-raft, so that the shipwrecked passenger need not worry about the proper adjustment of his life preserver, but may cling to his chair for support. The chair is made in accordance with the United States steamboat inspection laws regarding life-rafts of this type, so that a steamer provided with these chairs would not have to be equipped with the usual bulky life-rafts now required. Thus every chair will be a life-raft, and every life-raft could be used as a chair, instead of uselessly occupying valuable storage space. The inventor of this life-preserving chair is Mr. George Fentrick, 141 West Sixty-third Street, New York, N. Y.



COMBINATION CHAIR AND LIFE PRESERVER.

RECENTLY PATENTED INVENTIONS.

Of Interest to Farmers.

GATE.—I. R. BURKHOLDER, Dayton, Ohio. The invention relates particularly to driveway gates opened at one side from a vehicle and closed in like manner at the opposite side after having passed through the gateway. One purpose is to provide a special construction of hinge, through the medium of which and its connected chains and cables the gate may be freed from its latch and easily and conveniently swung to open position and returned to closed position.

DITCHING-PLOW. — J. F. MIKOLASEK, Vodnany, S. D. In this patent the invention has reference to improvements in ditching-plows, the object being to provide a device of this character that will be simple in construction, adjustable as to the depth of cut, and so arranged as to discharge the dirt to one side of the ditch.

Of General Interest.

BUTTON-HOLDER.—A. M. HILL, Rockville Center, N. Y. The object in this improvement is to provide a holder more especially designed for engaging the base or back of the front collar-button of a shirt to project the outer end of the collar-button forward to permit the wearer to conveniently button the collar to the collar-button without requiring much physical exertion on the part of the wearer.

SPATULA AND CORK-EXTRACTOR.—E. B. JELKS, Quitman, Ga. The blade has its intermediate portion between the spatula and extractor of width to project slightly beyond opposite sides of the handle-sections. These projecting sides of blade are milled or roughened, so that the operator grasping the handle also grasps the blade to hold it rigid between the sections, so he can quickly adjust the blade from one position to the other by having screws slightly loose so it is not necessary to tighten or release the screws each operation, as the grasp tightens the sections upon the blade and the gripping of the blade's edges secures parts rigidly together.

DREDGE.—A. J. BURCHAM, Kelso, Wash. The invention is an improved dredger and scraper adapted to be operated on land or from a float on water, for use in deepening or widening river-beds or opening canals, building levees, or working river-beds in placer-mining, and for other allied purposes. Performance of work is very large, from the fact that the two diggers and scrapers operate simultaneously.

DEVELOPING-MACHINE.—W. M. TOWERS and H. S. HARRINGTON, Rome, Ga. In the present patent the invention is an improvement in machines for developing and fixing photographic films. The operation of developing or fixing is determined by lapse of time and not by sight. The improvement while simple in construction is yet efficient in operation, the development and fixation being uniform throughout the length of the film.

FOLDING CANOPY.—J. A. POLTOCK, East Rutherford, N. J. This canopy or awning is designed more especially for use on pleasure-boats, platforms, stands, etc., and is arranged to permit convenient and quick setting up for use or folding into small space when not in use or when making landings, going under low bridges, and the like, to allow applying to a desired angle for obtaining proper shelter from the rays of the sun or from rain, and permitting convenient egress or ingress without taking the canopy down.

SAW-SET.—P. A. GIANERA, Gualala, Cal. In this case the invention relates to a means for setting the cutting-teeth of drag or cross-cut saws. The object of the invention is to provide a device adapted to saws of all sizes and by means of which the teeth may be readily set at any desired angle.

LAP-ROBE.—L. S. STROOCK, New York, N. Y. This improvement is capable of general use but is especially designed for application to robes in carriages and other vehicles. The hands of the user may be protected from cold without making any opening through the robe through which air can penetrate. A further object is to provide a receptacle for the hands, so placed in the robe as to permit the user to insert the hands and at the same time use his hands to aid in keeping the robe in proper position, this being accomplished with such a construction that the robe is held close to the body and no passages provided between the robe and the body for the arms.

VALVE.—H. W. BEACH, Montrose, Pa. The essential object of the invention is to provide a valve of the puppet type, which in the event of the fracture of the valve-stem will not fall into the chamber with which it communicates, the arrangement being such that the valve will be held approximately to its seat notwithstanding fracture of the stem. It relates particularly to valves for internal-combustion engines, but is useful in connection with other machinery.

BLOCK.—W. F. ROBERTS, Nashville, Tenn. This improvement refers to blocks used in connection with tackle, and more particularly to those adapted for the tightening of conductors and carrier or guy wires in line construction. The principal objects are the provision of a block which is automatically locked upon the establishment of a definite tension in the wire to which it is applied, this being capable of variation, and which will give an indication of the existence of the lock.

Heating and Lighting.

FLUE-CLEANER FOR STOVES AND RANGES.—W. JAQUES, Royersford, Pa. In the present patent the object of the invention is the provision of a novel simple device that affords convenient means for cleaning soot and fine ashes from the horizontal flue below the oven-bottom wall in a stove or range.

CRUDE-OIL BURNER.—S. E. MCKNIGHT, Iola, Kan. The invention relates to improvements in burners for crude oil of any grade or description, the object being to provide a burner so constructed as to issue an intense heat with an economical use of oil, as practically all the products of the oil will be volatilized and burned clear of smoke.

Household Utilities.

WATER-CLOSET. — F. SCHUH, Albany, N. Y. When the seat is moved downward the ball-valve will engage in the seat and the water from the pressure-pipe will pass through the branch-pipe into a chamber, compressing air against its upper wall. When seat is raised or relieved of pressure, a spring forces the lever downward, consequently elevating the seat, and seats the ball-valve on the valve-seat, cutting off the water inflow, and then the compressed air in the chamber will force the water out of said chamber upward through a pipe onto a flange and thence into the hopper.

Machines and Mechanical Devices.

SHUTTLE HOLDER AND DRIVER FOR SEWING-MACHINES.—P. J. HANLEY, Elizabeth, N. J. The invention pertains to improvements in sewing-machine shuttle holders and drivers of the type having an oscillating movement, the object being to provide a means for holding the shuttle in position, doing away with the usual shuttle-race, and thereby obviating friction incident to a shuttle operating in a race of the ordinary construction.

TYPE-CLEANING DEVICE FOR TYPE-WRITING MACHINES.—S. E. HALSEY, Everett, Wash. The invention relates to type-cleaning devices for type-writing machines, its object being to provide a simple, cheap, and efficient device of the character specified and one which can be readily attached to or detached from a type-writing machine and also secured to the frame of the machine when not in use.

FRICTION-CLUTCH AND GOVERNOR.—C. CHRISTIANSEN, Crookston, Minn. The invention is intended especially for use in connection with band-cutters and feeders for threshing-machines. The object is to produce a powerful and sensitive clutch which will act as a governor, serving to connect and actuate the feeder and band-cutter as soon as the threshing-machine has obtained sufficient speed to operate efficiently.

BRICK-MACHINE.—O. NOLAN, Minneapolis, Minn. In operation of this improvement in brick-machines the material is placed in the molds and tamped therein. A board is then laid across the tops of the molds, the ends of the boards resting upon handles for convenience in turning the frame upon its hinges. The swinging frame is then turned backward with the board, and since the position of the brick is reversed the board will be underneath, and when the bottoms are turned back into position the brick will remain upon the board.

Prime Movers and Their Accessories.

VAPORIZER.—C. HIBBARD and W. HIBBARD, Sandyhill, N. Y. The invention pertains to explosion-engines; and its object is to provide a vaporizer or mixing-valve arranged to insure a quick and complete vaporization of the liquid fuel (gasolene) and an intimate mixture of the proper amount of air and vapor and to prevent flooding of the device by the liquid fuel and frosting of the liquid-fuel chamber in cold weather.

Railways and Their Accessories.

CAR-COUPLING.—J. ROONEY, New York, N. Y. In the present patent the invention has reference to improvements in car-couplings, the inventor's object being the provision of a coupling of simple and novel construction and so arranged as to automatically couple when two coupling-heads are brought together.

RAILWAY-TRACK GAGE AND BRACE.—J. H. CROWLEY, Duluth, Minn. The invention relates to improvements in gage bars and braces for railway-rails, the object being to provide devices of this character that will be simple in construction, easily placed in position, and comprising comparatively little metal, thus causing a saving in expense.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.