

A DUCKING BATTERY AND HOW TO MAKE IT.

This ingenious device, employed by the duck shooters of Chesapeake Bay, is well shown in use by the accompanying engraving, while below we show a sectional view of a battery drawn to a scale, which will prove of assistance to those of our readers who would like to make and try this method of circumventing the ducks which swarm in some sections of this country.

The battery is so constructed that when loaded with the guns and ammunition of the shooter, with a proper amount of iron for ballast that the water is on a level with the deck of the box, the shooter lying on his back is entirely concealed from view; in fact, when well ballasted and surrounded by the decoys it is impossible to distinguish this strange boat even at a short distance. The gunner remains on his back till the ducks are well over his decoys, when he rises to a sitting position and gives them a volley with his first gun, and, picking up his second, is ready to kill any cripples before they can dive and escape. With beginners it is difficult to judge distances across the water, and ducks will look much nearer to the box than they really are. If a large flock comes to the decoys, by permitting the first arrivals to light before sitting up in the box, and shooting at those first which have not settled, a person will frequently have an opportunity of doing execution to the first comers with his second gun before they get out of range; but under no circumstances should the shooter attempt to rise before the ducks drop their legs as though in the act of settling.

A battery should be accompanied by a small sail-boat, whose duty it is to pick up the dead birds as they drift to leeward, and to stir up and keep moving any flocks which may alight in the vicinity.

Fig. 2 shows a skeleton view of a battery: A, box in which the shooter lies; B, rim of sheet lead tacked down on inner edge so as to turn up in rough weather to prevent the water washing over; C C, an outer strip of lead; D D is the deck supported by beams, which should be of oak one and a half inches thick, five inches wide in the center, and reduced at the ends to half an inch, and well secured by bolts; E shows canvas sheeting or gunny bagging tacked on light wooden frame; F is a board attached to G, which is a similar board secured to the deck by strong iron hinges; H shows leather hinges securing frames to the deck; I I represents hinges so made as to allow the end wing to fold over the side wings, which should be first drawn upon the deck when the battery is to be moved from its position; K shows ropes running from the frame ends, to which the canvas is attached, permitting the wings to be folded more readily; L L, points at which ropes pass through the frame, supporting deck to middle or right, to which the head anchor is attached; M is the point at which the foot anchor is attached by a knot, the rope running through a hole made through the deck and a supporting beam or frame.

Use one inch pine for construction, except for head or foot board of box, which should be of oak or some more lasting wood and two inches thick. The bottom and side boards of the box are attached to the head and foot, so to a great extent the strength of the entire box depends on them. For use by a person of ordinary size a battery of the following dimensions will answer: Length of box, 6 feet 3 inches; depth of box, 1 foot 1 1/2 inches; width of box at bottom, 1 foot 8 inches; width of box at top, 2 feet; length of deck, 12 feet; width of deck, 7 feet; width of lead rims, 4 inches; width of frames for canvas, 2 feet; width of boards, F and G, each, 8 inches; width of canvas at head, 9 inches.

The deck declines off on each side about an inch and prevents much wash, which would occur if it was made on a dead level. The edge of the box should be a quarter of an inch above level of the deck. The rim of sheet lead can be turned up in launching the battery, or when there is much ripple it prevents water from getting into the box. The outside rim only extends around the head, which is always anchored to the breeze, and consequently gets more the force of the waves, which are broken in their shock by the boards, F G, at the head.

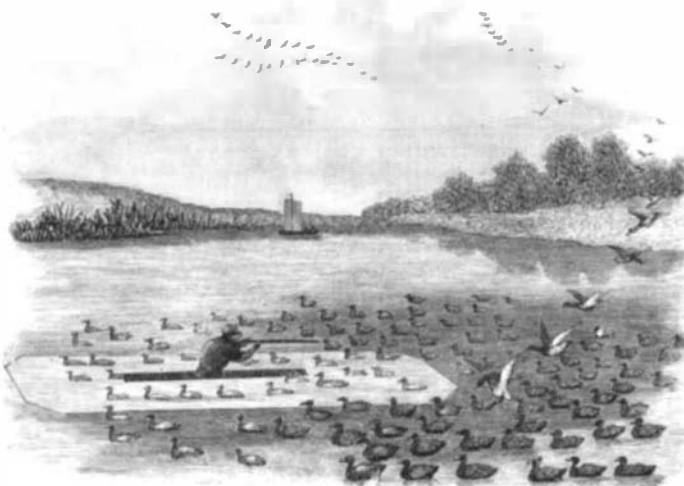
It is of great importance that the battery should be anchored properly to insure comfort to the shooter. The head of the platform, by fastening the anchor rope, L L, as described, is in a measure free from restraint, which permits it to rise and fall with the swell in an easy manner, and prevents the waves from breaking over into the box, which would be the result if anchored to the extreme end of the platform. The foot anchor rope, by running through a hole and fastened by a knot, can be reached and pulled up by the shooter in case a sudden change of wind makes it necessary to let it shift its position. A false bottom or drain board takes up about an inch of the depth and adds to the comfort. An old robe to lie upon, a couple of guns stowed away, cartridge box between his feet, and the shooter is ready for action.

The amount of ballast necessary depends on the weather, size of the person, etc. Pieces of railway iron are good, and eight or ten decoys made of cast iron and properly painted will be found handy to use for ballast by placing on the deck around the box, and can be shifted in case of change of wind. The deck and canvas should be painted a sedge color. The boat or tender which assists in setting the battery and picking up the birds should always keep in sight, ready to come to assistance of the shooter if necessary.

A Scientific Railway Car.

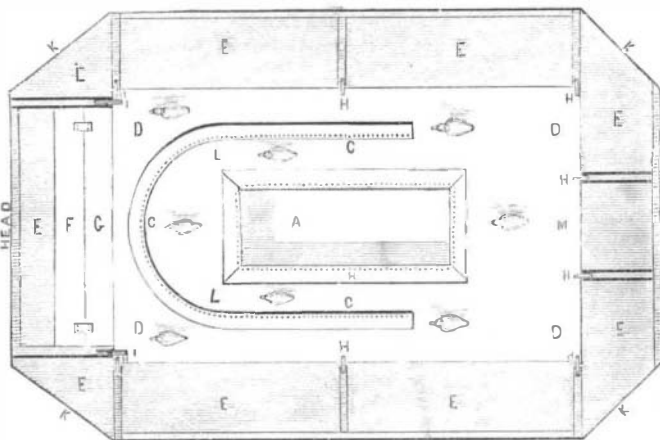
There arrived at our depot, yesterday afternoon, a passenger car the like of which is not to be found anywhere in the world. It is the property of Mr. P. H. Dudley, inspector of the tracks and apparatus of railroads, and this gentleman and his wife live in this car. A reporter of the Sun called on the occupants yesterday afternoon, and was entertained for nearly an hour with the explanations of and experiments made with the large piece of machinery by which the gentleman accomplishes his work. It is of the most complicated and delicate nature, and the amount of work done by it is marvelous. A description of it would be wearisome, with its systems of cogs, switches, wires, pens, etc., etc., and would be almost unintelligible, but an idea of its extraordinary work may be gained from the following summary of its accomplishments:

A band of plain paper, about twenty inches wide, is fed from a roll into the machine, passing under a complex set of



BATTERY OR SINK BOX.

everflowing pens. For every fifty feet of track passed over by the car this paper band moves one inch, thereby taking eight and a fraction feet for a mile of road. By carefully constructed and adjusted machinery, connected with the wheels of the car, the operator obtains upon the paper a perfect chart of every foot, yes, every inch, of the road. The instrument shows: first, the power required to draw the train; second, a pen marks on the paper the seconds of time in transit; third, another pen marks every tenth second in the same way; fourth, still another pen marks each minute. Then comes a schedule showing the distribution of coal used by the engine; the amount of water used by the engine; a perfect diagram of the track is delineated, showing all curves, grades, etc.; the number or revolutions which the driving wheels of the engine make in a minute or mile, or parts of these two; the location of the mile posts are shown, as also the bridges; the work done by the engine, so given that the foot-pounds of work can be readily ascertained by multiplying the ratios; the velocity and resistance of the wind. All these are plainly and accurately shown upon the diagram. When used to inspect



PLAN OF BATTERY.

the track, the machine shows the surface of each rail, giving the condition of each joint, frog, etc., and shows at a glance whether the rails are fitted perfectly true, or the least trifle out of place, or if one is a hair's breadth higher than another. The elevation of the rail on a curve is shown, and a machine has just been added, which Mr. Dudley invented, giving the exact amount in feet and inches that the rails are depressed from a true line. Another section of the chart gives the exact movements of the engineer when the brakes are applied, when steam is put on, and the power required to start and stop the train. Mr. Dudley examines a road in this way, hands his chart to the superintendent, and that gentleman knows at once just where to make repairs and all other needful particulars. The machine is the invention of Mr. Dudley, he having spent eight years perfecting it, and, save one which he made and sent to Australia, his is the only one in existence.

Besides this workroom there are a nicely furnished library and parlor, containing cabinets and a fine piano, a dining-room, kitchen, bedroom, and storeroom. All this in a common size passenger coach, and in it Mr. and Mrs. Dudley

have lived for the last four years, traveling all over the United States. The lady says the life is a very pleasing one, and she enjoys it much. Both the lady and gentleman are finely educated and entertaining people, and an hour spent in their company is a very profitable one — *Pittsfield (Mass.) Sun.*

MISCELLANEOUS INVENTIONS.

Mr. Theodore Michaut, of St. Paul, Minn., has patented an improved mill for grinding wheat, middlings, and other grains, so constructed as to produce more middlings and consequently more and better flour than mills constructed in the ordinary manner, which is so thoroughly ventilated that the surfaces do not become heated, which does not require frequent cracking and furrowing to keep it in order, and which may be run with a comparatively small amount of power.

Mr. Frederick Meyer, of Philadelphia, Pa., has patented an improved heat regulator for incubators for automatically controlling the temperature of incubating chambers. It is an improvement on a heat regulator patented by Mr. Meyer, April 29, 1879, which consisted in a lever or balance carrying a tube, with reservoirs at each end containing ether and mercury. The mercury being shifted by the expansion or contraction of the ether, the lever is thereby moved to open or close a damper. In the use of this invention it was found that high winds tended to drive a portion of the heat through the radiating tubes and thus raise the temperature of the water. The present improvement obviates this disadvantage.

Mr. Friedrich W. F. Kistner, of North Attleborough, Vt., has patented an improved bracelet, simply constructed, which locks itself automatically by means of a spring, and can be put on or taken off without requiring the hand to be passed through it. The bracelet is formed of a stiff hollow semi-circular part, to the ends of which two hollow quadrants are pivoted in such manner that they can swing in a plane at right angles to the plane of the bracelet, these quadrants being drawn inward or closed, when released, by a torsion-spring wire passing through the rigid and hinged parts of the bracelet.

Mr. Frederic A. Lane, of New Haven, Conn., has patented a clock of more compact construction than those ordinarily used, the purpose being to reduce a clock to the smallest dimensions possible without the use of fine and complicated gearing.

Mr. Jephthah G. Dunlap, of Cedarville, Ohio, has invented an improvement in breech-loading firearms. A novel construction, arrangement, and operation of a bolt for locking the barrel in place, when the breech is closed, is supplied, and also devices for operating the bolt, together with means for preventing the accidental discharge of the gun before the barrel is locked in place, and preventing the accidental unshipping of the barrel from the stock.

Mr. Joel Heacock, of Marlborough, Ohio, has patented a portable fence constructed partly of wire, which is claimed to obviate the objections to portable fences constructed wholly of either material. The fence comprises enough wood to enable it to be seen and avoided by cattle even in the night time, and at the same time presents so little surface to the wind that it is not liable to be blown down.

Mr. John J. Angus, of Cascade, Wis., has patented a blind for windows in which the slats rest upon pins driven into the rabbet of the frame of the blind, and are held by pins driven into the blind rod, which is hinged to the cross pieces of the frame on the top and bottom, and the upper end of which fits into a recess in the upper cross piece of the blind. The slats are therefore devoid of tenons and are not attached to the central rod by staples as in ordinary blinds.

Mr. Alvin O. Hall, of Cincinnati, Ohio, has patented a game which requires the player to acquire a knowledge of the census reports and of the outlines of States and countries. One or two outline maps of a country or a number of States, and a series of blocks having the names of the corresponding States or countries or counties printed thereon, with another series of blocks having the number of inhabitants of each State, country, or county printed thereon, constitute the apparatus.

The accurate placing of the blocks upon the outline map, with reference to the outline or to the population, constitutes the game, in which two players may join.

Mr. John S. Van Eps, of Mammoth City, Cal., has patented an improved adjustable standard or stake for wagons, cars, or sleds, which is designed to afford convenience in loading or unloading such vehicles. Instead of inserting the stake or standard in a mortise or socket, after the usual fashion, the standard is provided with a horizontal metal socket or thimble, into which the end of the bolster is fitted, and is provided with means for holding it in an inclined or vertical position as desired.

Mr. William W. Giles, of Chicago, Ill., has patented a velocipede which embodies various improvements on the class of such vehicles that embraces three or four wheels operated by the united action of the hands and feet.

Mr. Henry T. Case, of Green Spring, Ohio, has patented a middlings purifier. A cone-shaped or tapering reel is used in connection with a fan and feed rig. The stock is carried up the incline of the reel by a light draught of air from the head to the tail, or small portion of the reel.