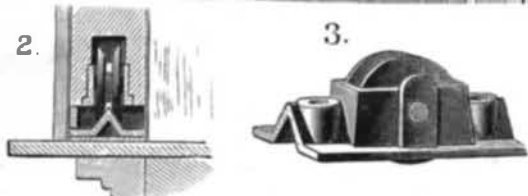
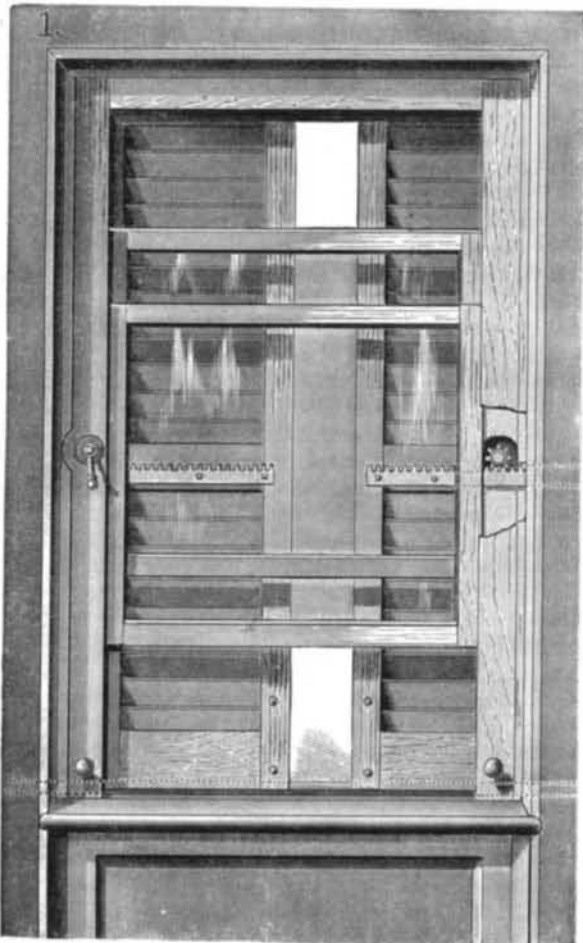


**IMPROVED SHUTTER-WORKER.**

The engraving shows an improved device for opening or closing outside window blinds or shutters from the inside without the necessity of raising the window sash. The top and bottom of each shutter are provided with grooved rollers that run upon tracks at the top and bottom of the window casing, and these tracks are extended into recesses in the wall, into which the shutters slide.



**WAGNER'S SHUTTER-WORKER.**

Each shutter is provided with a rack which is attached to the middle rail, and upon each side of the window extending through the casing there is a spindle carrying a pinion, which meshes into the rack and is capable of moving the shutter as the spindle is turned. Each spindle is provided with a crank by which it may be rotated to open or close the shutters.

The top and bottom rails are provided with stops at their outer ends, and also with central or middle stops, to prevent the blinds from traveling too far in either direction.

The shutters may be placed upon tracks on the outer surface of the wall, and if desired the outside of the house may be provided with cases on both sides of the window, into the top and bottom of which the ends of the top and bottom rails are extended, so that the cases serve to inclose the blinds when open and protect them against the effects of sun or rain.

In order to lock the blinds firmly in place in any given position—either open, partially open, or closed—and to prevent rattling, there is a bolt on each side of the window, the screw-threaded inner end of which works in a threaded box sunk into the jamb or casing, while the outer end projects through the wall in a line with and opposite to or facing the blind bottom rails. Each bolt has an ornamental knob handle at its inner end for operating it. These knobs also serve the purposes of holders or hangers for the curtain-bands when the curtains are drawn aside. If desired, the bottom rails of the blinds may be provided with two or more recesses in

a line with the projecting outer ends of the bolts, into which the points or ends of the bolts are inserted when the handles are turned, and which will prevent the shutters from being moved to either side. Under ordinary circumstances, however, this will not be found necessary, as the bolts will bind the blinds with sufficient firmness simply by bearing against the blind rails.

This invention was recently patented by Mr. Theodore Wagner, of 2101 Hyde street, San Francisco, Cal.

**Automatic Counting of Letters.**

Two officials of the London Post Office have invented and patented a method of automatically registering the number of letters stamped. The counting may be done by mechanical or by electrical means. In the first case a small counter, similar to an engine counter, is placed in the head or handle of the hand stamp, and each time the stamper presses it upon a letter it is registered on the counter. At the close of the day the stamp is opened, the number of letters stamped read off and registered, and the counter set ready for the next day's work. In the second case, two methods have been devised for electrically effecting the object. In one the striking of the inking pad causes electrical contact to be made, which transmits a current to a counter similar to that of a gas meter, and so registers every letter stamped. The other method is similar in principle, but a lever stamp is employed.

**IMPROVED FILTER.**

This filter is designed to supply the demand for cleansing large volumes of water where the supply is drawn from flowing streams that are subject to roiling to such an extent that ordinary filters are useless, and where hydrant pressure cannot be had. Also where the amount of sediment and suspended matter is so great as to render other filters a source of constant annoyance by becoming clogged, thereby necessitating the frequent removal of the filtering material. The construction of Land's upward water filters is such that by simply raising a gate the backward action of the water frees the bed of filtering material, so that it is as good as new, while at the same instant a flushing reservoir is let go that sluices along the bottom and carries out all sediment or suspended matter into a waste sluice or drain. By closing the gate the filter at once acts as well as when first used.

The filtering material need not be renewed if proper attention is paid to flushing, and this is a matter of only a few minutes' work.

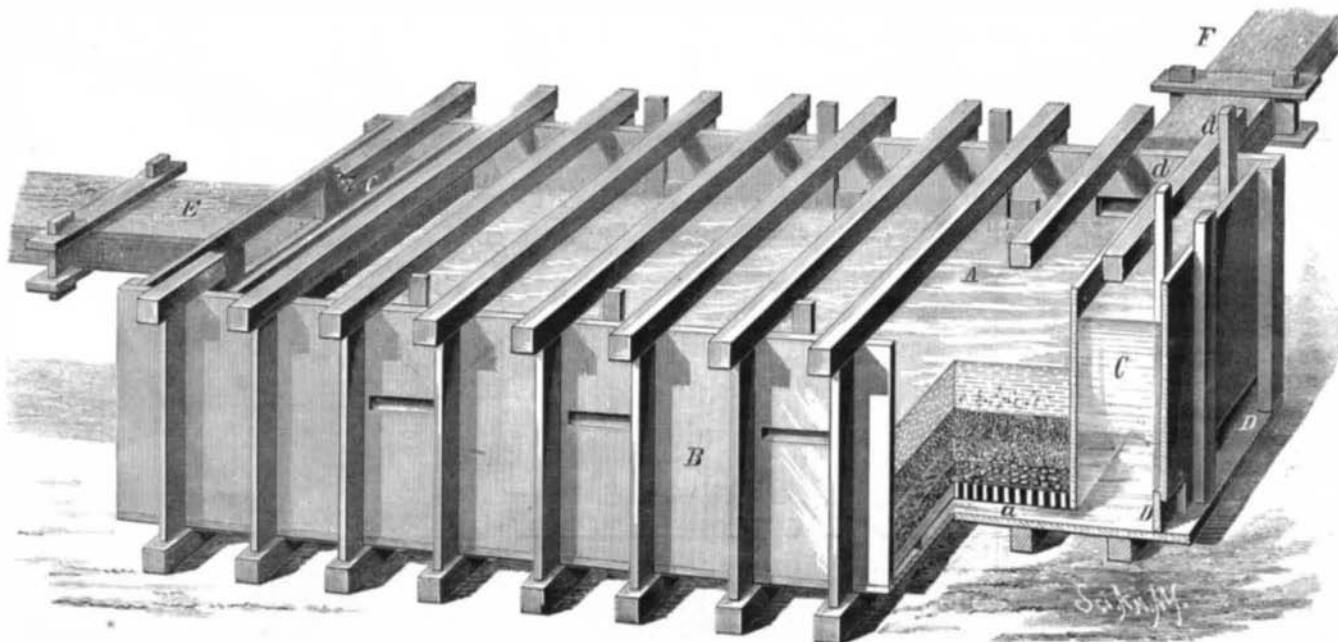
The bottom of the filter box, A, rests upon the slats or scantling, a, which are of suitable size and strength to support the filtering material, and are placed upon their edges, a small distance apart. The filter box is of such size relative to the outside box, B, as to form the reservoir or pen stock, C, at the sides of the filter box. The reservoir, C, has the outside openings, D D, at the bottom, which are closed by the sliding gates, operated by the rods or bars, d d.

The water to be filtered passes from the race, E, into the reservoir or penstock, C. In this reservoir or penstock a water head is maintained which forces the water into the sluiceways formed by the strips or scantling and upward through the filtering material. The filtered water flows out through the sluice, F.

When it is desired to clean the filtering material and the bottom of the filter of the sediment which will collect in them, the gates, D, are to be opened, and the current caused by the flow of water through the gates will carry away and thoroughly remove the sediment.

These filters can be made to deliver any amount of clean water from 100,000 to 100,000,000 gallons in twenty-four hours. They are now in use by the Colorado Coal and Iron Company and by the Grant Smelting Company, also the Pueblo Smelting and Refining Company, all of Colorado. The first named company use two millions of gallons daily.

For particulars apply to A. W. Geist or Gordon Land, patentees, Pueblo, Col.

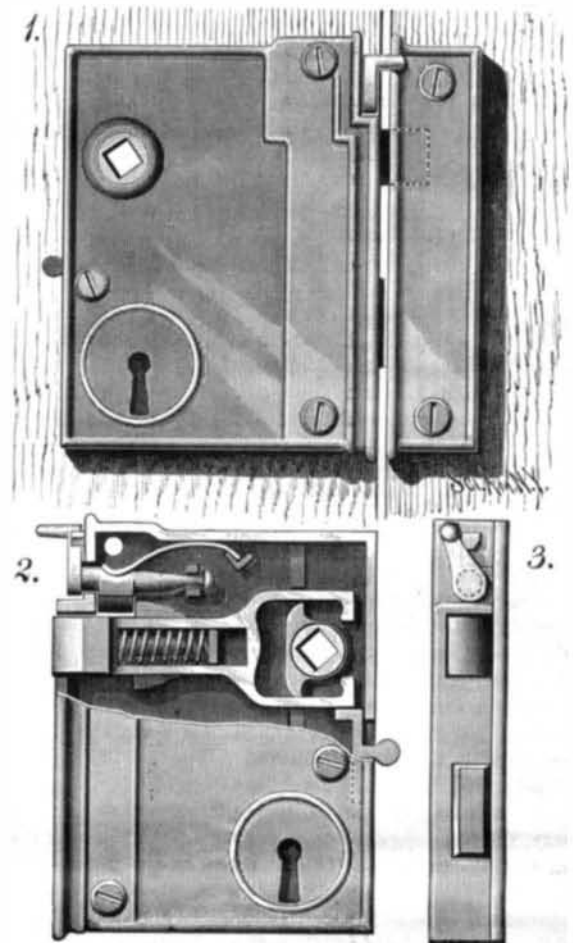


**LAND'S UPWARD WATER FILTER.**

**IMPROVED DOOR LATCH.**

The latch improvement shown in the annexed engraving is designed to obviate the difficulties sometimes experienced in closing a door when there is considerable friction between the latch and the catch plate. In the latch shown in the engraving the catch when retracted is retained in that position by means of a detent seen above the latch bar in Fig. 2. This detent is formed on a short rocking spindle, which extends through the lock casing, and is provided at its outer end with a crank arm capable of engaging the face of the catch plate.

The detent is held into engagement with the latch by means of a flat curved spring, and when the latch is retracted by turning the door knob in the act of opening the door the latch is held in that position by the detent until the crank arm strikes the face of the latch plate, when the latch is released and slips behind the face of the plate without friction and without wear.



**WALLACE'S DOOR LATCH.**

Fig. 1 in the engraving shows the lock in side elevation. In Fig. 2 a portion of the casing is broken away to show internal parts, and Fig. 3 is an end view.

This device removes all necessity for slamming doors and increases the durability of the latch manyfold.

Further information in regard to this useful invention may be obtained by addressing the patentee, Mr. Lorenzo Wallace, of Leavenworth, Kan.

**MECHANICAL INVENTIONS.**

An improved ice-delivering machine has been patented by Mr. Jeremiah M. Jones, of Lucas, Ohio. It consists in constructing an ice-delivering machine with an endless carrier to receive blocks of ice from an ice house and lower them to a chute, down which they slide to a receiver, sashes that carry the carrier and slide in ways in the main frame, the sashes being adjusted and held in place by a jack screw and set screws connected with the main frame, a tapered friction wheel, friction clamps, and a clamp lever for controlling

the descent of the ice, and a bar and suspended weights for balancing the descending blocks of ice, whereby the ice will be delivered by its own weight, and the rapidity of descent of the ice blocks can be easily controlled.

An improved circular sawing machine has been patented by Mr. Chas. S. Beath, of Escanaba, Mich. This invention consists of a circular saw mounted on a swinging gate, of a frame provided with a roller table for the log or poles to be cut, and with an adjustable gauge. The swinging gate is provided with

pulleys for maintaining a uniform tension of the driving belt, and is drawn inward by spiral springs, but is drawn outward, when the saw is to cut, by means of a rope or chain attached to the swinging gate and to a lever pivoted to the end of the frame and acted upon by a pivoted bent lever.

An improved machine for stirring and discharging mash has been patented by Mr. Stillman E. Chubbuck, of Boston, Mass. This invention relates to that class of machines for stirring and discharging mash in which vertically and horizontally revolving agitators and scrapers are used, and the improvement consists in certain peculiarities of construction and arrangement which cannot be clearly described without engravings.

An improved windmill has been patented by Mr. Homer B. Sprague, of Grantville, Mass. The object of this invention is to furnish self-regulating windmills so constructed that the sails or vanes will adjust themselves to the varying force of the wind, so that the driving wheel will rotate at a nearly uniform velocity and with more or less power up to the limit permitted by the wind, and according to the gravity of the weight or force of the pulling power applied to the cord that draws the sails or vanes into position to catch the wind.

An improved device for operating the doors of elevator wells has been patented by Mr. John P. Wykoff, of Rochester, N. Y. The invention consists in projecting plates or tracks which are attached to the inner side of the doors, and are inclined from the ends of the outer edges toward the middle of the inner edges of the door, against which plates or tracks a roller mounted on a stud on the car presses, thus opening or closing the door accordingly as it presses against the upper or lower surface of the inclined tracks, the ends of which are hinged to swing inward toward the middle of the door to let the projecting roller pass after having opened or closed the door.

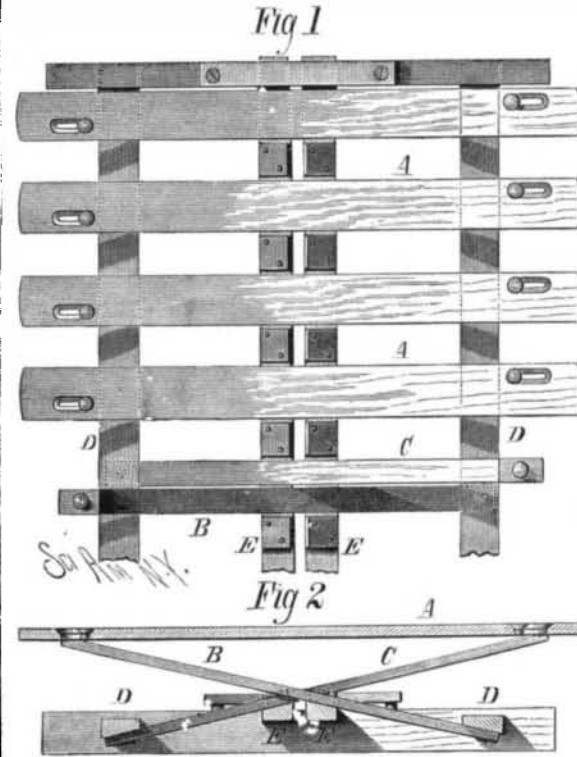
**TEMPORARY STEERING APPARATUS OF H.M.S. BACCHANTE.**

While the Prince and Princess of Wales, with their younger children, have enjoyed an hour's pleasure trip on Virginia Water, Prince Albert Victor and Prince George of Wales, serving their Queen and country on board H.M.S. Bacchante, have had to look out for squalls. We are favored by a correspondent from that ship with the accompanying sketch. The Bacchante was caught in a heavy squall in the South Indian Ocean, two hundred miles west of St. Paul's Island, nearly half way between the Cape of Good Hope and West Australia. She had her sails split, several sheets carried away, the fore topgallant mast sprung, and the topmast studding sail carried clean out of the bolt ropes, as the wind shifted suddenly to the starboard beam. Again, when the Bacchante approached Cape Leeuwin, the southwest point of Australia, while running before the wind, three hundred miles south of that point, she met with another disaster. The wind suddenly shifted about two points, and the ship "broached to," and was struck by a heavy sea. One life boat was carried away from her quarter, while the other life-boat was forced in-board, breaking the davits, and striking the rudder head. It gave such a violent wrench to this, that the rudder was disabled, and it became necessary to rig up a temporary steering apparatus, which is shown in our illustration. It consisted of two spars lashed together, and towed directly under the stern, to the aft ends of which two hawsers were

affixed, one leading on each side of the ship, through a block on the end of the spars. The Bacchante was enabled, by these means, safely to be steered into the port of Albany, West Australia, where she was laid up for brief repairs. The two young princes went on to Adelaide and Melbourne.—*London Illustrated News.*

**IMPROVED SPRING BED.**

The spring bed shown in the engraving is formed of a series of horizontal slats, A, resting on crossed inclined



**HEBERT'S SPRING BED.**

spring slats, B C, the latter having their lower ends fastened to the longitudinal side bars, D, of the base frame. The middle of the spring bars rest upon the adjustable longitudinal bars, E.

The slats, A, have short longitudinal slots in the ends for receiving screws which pass into the ends of the crossed slats, B C. The longitudinal rails, E, are made movable to adjust the tension of the spring slats, B C. When the rails are moved outward the elasticity of the springs is diminished; when they are moved toward each other the elasticity of the springs is increased.

Fig. 1 is a partial plan view of the improved spring bed, and Fig. 2 is a vertical transverse section.

This improvement was lately patented by Mr. Hubert Hebert, of Lake Linden, Mich.

**A Rocket Torpedo.**

The Providence (Rhode Island) *Evening Bulletin* says: Some exceedingly interesting experiments lately took place at the Torpedo Station with the Weeks rocket torpedo. This torpedo is a most peculiar structure. It consists of a float made of tin and sheet iron, being braced

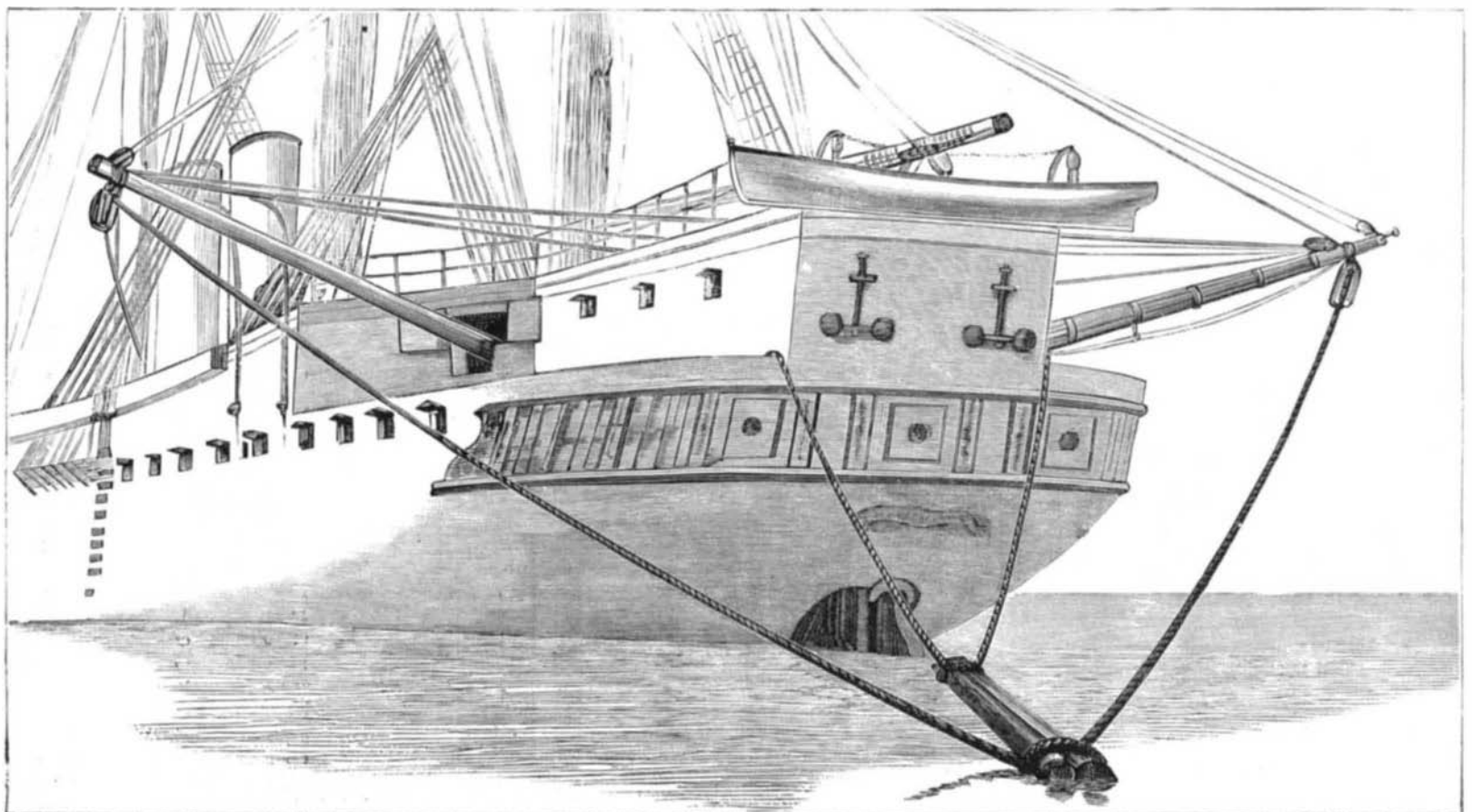
internally with wood. It has two rudders similar to the tails of a sky rocket. The float portion is some eleven feet long, with the rudders of the same length. In the forward part or head is placed some fifty pounds of dynamite, and this, coming in contact with the object, explodes by concussion. The whole structure is propelled by a rocket, some six inches in diameter, three and a half feet in length, and weighing 100 pounds. It moves on the surface of the water, and has attained the wonderful speed of about 150 feet a second, which is kept up for four or six hundred yards. It is aimed at an object, and moves in a straight line guided by the rudders. It is placed in the water from a wharf, a raft, or a ship. It is operated either by electricity or a percussion. The rocket portion is protected from the wet by a tin stopper, through which the wicks for igniting pass.

The principal object in testing the torpedo here is to discover how it will behave in rough weather. The board consists of Lieutenant-Commander R. B. Bradford, Lieutenant-Commander Benjamin L. Edes, Lieutenant J. F. Meigs, and Master A. L. Case. The inventor was busily engaged yesterday morning preparing for the experiment. The board was called together for half past 1 o'clock, but it was nearly an hour later when the experiment was made. Captain T. O. Selfridge, the Commandant; Captain Johnson and Lieutenant-Commander Chadwick witnessed the trial; Lieutenant Meigs was in a small boat to time, Lieutenant-Commander Bradford looking out for the distance. Suddenly a whizzing noise was heard, and the extraordinary torpedo went on its way. The velocity was something frightful, as may be judged when it is stated that the torpedo passed along and over (for it jumped occasionally) a distance of water not less than 1,375 feet in about nine seconds. One gentleman present thought it was not more than eight. It was impossible to time it correctly, for the smoke behind was very dense. Captain Selfridge said that this trial was a success. The torpedo kept on an almost perfectly straight course, notwithstanding the fact that there was considerable wind which bore on the port side. The roar of the rocket as it drove the torpedo along was something dreadful, quite sufficient, had it been sent off at night, to "drive people crazy," as some one remarked. The torpedo was directed in a course toward the extreme west point of Coaster's Harbor Island. The visiting officers present were very much pleased with the successful exhibition.

**Fired by Electricity.**

An interesting illustration of the danger attending the manufacture of some kinds of rubber goods was shown in the origin of the recent fire which occurred in the *Ætna Rubber Mills*, at Jamaica Plains, Mass. The cement which fastens the seams of rubber coats is largely made of naphtha. The mere act of lifting a piece of rubber cloth from a pile of half a dozen similar ones, cut for garments, developed so much electricity that a spark was observed to escape. It came in contact with the naphtha cement, or with gases arising from it, and instantly the whole room was in a blaze. Fortunately the fire was extinguished without destroying the mill, the loss being only about a thousand dollars.

It is not known that anything can be done to prevent the occurrence of another accident of precisely the same kind, whenever all the atmospheric conditions are favorable. One would suppose, however, that a certain degree of dampness would remove all danger from that source.—*Commercial Bulletin.*



**TEMPORARY STEERING APPARATUS OF H.M.S. BACCHANTE.**