

**A DEVICE FOR MANIPULATING DOORS AND WINDOWS.**

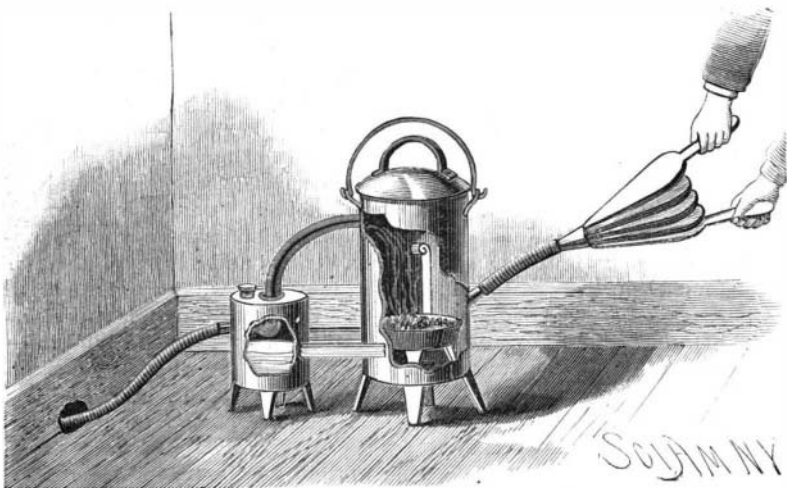
A device which will serve to lock a door or window in place when opened or closed, and to move it into any desired position, is shown in the accompanying illustration, and has been patented by Mr. Emil Herz of No 657 East 157th Street, New York City. A vertical shaft is mounted to turn and slide in brackets, one

**HERZ'S TRANSOM MANIPULATOR.**

above the other on the door casing, there being on the lower end of the shaft a handle, while at its upper end is an arm pivotally connected by a link with a bracket fastened to the door or window. On the under side of the arm, at the upper end of the vertical shaft, is a lug adapted to engage one of a series of notches arranged in the segment of a circle on top of the upper bracket, there being on the outer end of the bracket a stop to limit the movement of the arm. This arm has also, near its outer end, a series of holes for the insertion therein of one hooked end of the link, the other hooked end thereof being inserted in one of a number of holes in the bracket fastened to the door or window, for the proper adjustment of the device. To either open or close the door the operator pushes up on the handle, raising the vertical shaft a short distance, when it may be turned by the handle in the desired direction, the lug on the under side of the arm at the top of the shaft coming to rest between notches on the upper bracket when the handle is released, thus holding the door or window in the position to which it has been moved.

**AN IMPROVED FUMIGATOR.**

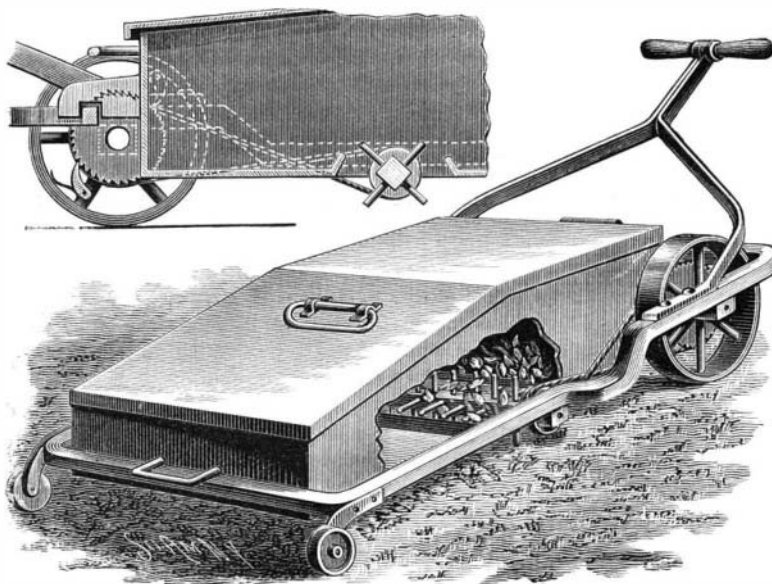
A fumigator for exterminating animals burrowing in the ground or living in holes is represented herewith, and has been patented by Mr. Lee Russell, of Luling, Texas. It consists of a suitable receptacle mounted on legs and having a removable top, there being a removable fire box in the bottom of the receptacle. Directly above the fire box is an inlet pipe, connected with bellows by a flexible tube, and from the opposite side leads a pipe opening into the top of a small vessel containing water, a flexible tube from the latter vessel leading to the opening or hollow supposed to communicate with the animal's nest. When sulphur is thrown on the burning fuel, and the bellows started, the lid being placed on the main receptacle, the fumes are driven into the smaller vessel and thence to the animal's nest, any sparks passing off from the fire being extinguished in the second vessel, thus removing any danger from fire to a building in which the apparatus may be used, the second vessel not being needed when the fumes are directed immediately into the ground.

**RUSSELL'S FUMIGATOR.****Amidships Propeller.**

A trial trip of the Dhui Heartach, which has been altered and adapted to test the advantages to be gained by having the propeller amidships, instead of as by the recognized method, viz., at the stern, was recently made from Hartlepool to the Newcastle Quay. Although the vessel was quite light, not even ballasted, she behaved admirably. It was manifest that perfect contact with the water, under the ship, was at all times certain for the propellers, so that there was no racing or unequal strain upon the engines. In fact, whether rolling or pitching, the propellers were never visible, nor was the surface of the water directly over the propellers ever broken, and the manifest disturbance to those who were on board was only that of a mere bubbling round to the stern of the vessel. Therefore there was no turbulence in the neighborhood of the rudder, and steering was a mere pastime, the ship answering easily and quickly to her helm. The vessel is now in the Tyne, being further tried and examined.

**AN IMPROVED LAWN CLEANER.**

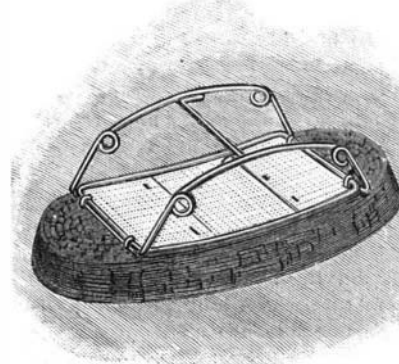
The illustration represents a machine designed to effectually clear grass, leaves, etc., from lawns and similar places, and which will take up the grass cut by a lawn mower, leaving the lawn perfectly clear. It has been patented by Mr. Charles Bailey, of 6 Colony St., Winnipeg, Canada. The frame of the machine is preferably made of bar iron, and in its side bars, near the rear, is journaled a shaft on which the drive wheels are keyed. On this shaft, near one of the wheels, is loosely mounted a grooved pulley, having a toothed periphery contiguous to the drive wheel. This toothed periphery is engaged by pawls pivoted upon the drive wheel when the machine is moved forward, thus revolving the pulley, but when the machine is drawn backward the pawls slip over the teeth. Near the center of the frame is journaled a rake head, with teeth projecting at right angles from its sides, as shown in the small view, one end of the rake head having rigidly attached thereto a small pulley connected by a belt with the pulley on the drive wheel shaft. As the refuse is thrown

**BAILEY'S LAWN CLEANER.**

upward by the rake when the machine advances, it is received in a box-like receptacle provided with a detachable cover, this receptacle neatly fitting within the frame of the machine, and having a transverse bottom opening within which the rake revolves. When the box has been filled with grass, leaves, etc., it may be lifted from the frame, the cover removed, its contents emptied, and the receptacle again replaced without trouble.

**AN ERASER FOR USE ON BLACKBOARDS.**

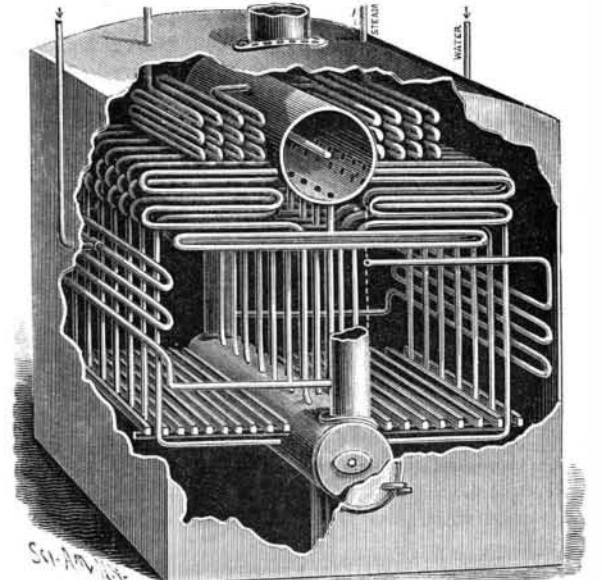
The engraving shows a simple and inexpensive device for erasing chalk marks from blackboards, which has been patented by Mr. Joseph H. Thompson, of Wilmington, Ohio. The facing of the eraser is made of strips of cloth or felt folded upon each other in elongated form, and having their upper edges glued to a flexible back of canvas, rubber or other suitable material, the ends of the backing being lapped to form eyes through which pass cross bars of the handle. The latter is made of spring wire, in such form as to make its sides elastic, and on the top of the back is a rectangular wire frame,

**THOMPSON'S ERASER.**

thus forming a spring back which readily gives to any pressure applied to the handle when the facing is rubbed on the blackboard. For further information address Thompson & Davis, Wilmington, Ohio.

**IMPROVED STEAM BOILER.**

The illustration shows a boiler especially adapted for marine purposes, and designed to insure a perfect cir-

**CONEKIN'S STEAM BOILER.**

ulation of the water and present a large heating surface. It has an upper steam drum connected with a water drum by a large vertical tube at each end, on the sides of which are the fire boxes, the grate bars being a little above the middle of the lower drum, from which pipes extend horizontally under the grate bars and then upward on the outer sides of the fire box, to form coils constituting part of its top, and connecting with the lower part of the steam drum. A second series of pipes leads from the water drum upward on the inner sides of the fire boxes, and forms transversely extending coils connecting with the steam drum at a slightly higher point, but below the water level in the steam drum; also, connecting the bottom of the steam drum with the top of the water drum, is a series of pipes each having transversely extending bends at the top of the fire boxes and under the coils extending from the side pipes. The feed pipes on each side of the casing extend inward to connect with a longitudinal coil, the upper end of which connects with the large vertical tube at one end, while the other lower end of the coil connects with the opposite tube at the other end of the boiler. At the sides of the steam drum are longitudinal coils of pipe through which the steam is passed when taken from the upper part of the drum, that the steam may thus be superheated in passing to its destination. The heads of the water drum have manholes to facilitate the removal of sediment, and in one of the heads of the steam drum is a plug to permit the introduction of a hose to clean the steam drum and the pipes leading therefrom to the water drum. By means of this construction a complete circulation of cold water takes place from the steam drum downward through the large end tubes to the water drum, the heated water passing upward through the several series of pipes, where its temperature is rapidly raised by the heat generated in the fire boxes.

For further information relative to this invention address the patentee, Mr. Dawson Conekin, No. 52 Woodhull Street, Brooklyn, N. Y.

An exchange says that on the average, in frame dwellings, building hardware, porches, and piazzas should last 20 years; outside paint 5 and inside 7 years; shingles and outside blinds 16 years; cornice and base 40 years; weather boards, doors, windows, stairs, newels, and inside blinds 30 years; sheathing and dimension lumber 50 years; sills and first floor joists 25 years.

