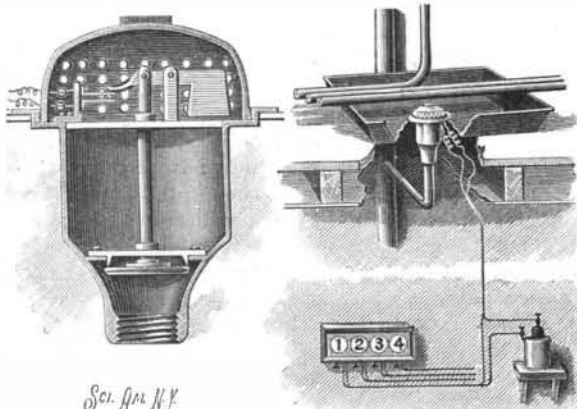


AUTOMATIC LEAK DETECTOR FOR PIPES.

The illustration herewith represents a device especially designed for automatically detecting leaks in pipes in hotels and private houses, and for preventing foul gases from passing from one room or apartment to another by means of the waste pipe. This invention has been patented by Mr. Andrew H. Brown, of No. 229 West Twenty-second Street, New York City, and consists essentially in the employment of a valve held in a closed position until sufficient leak water accumulates on the valve to open it, so that the valve closes an

**BROWN'S LEAK DETECTOR FOR PIPES.**

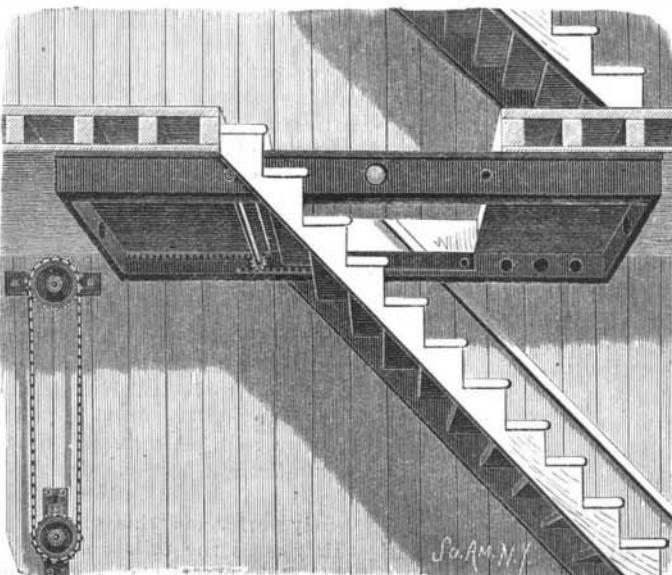
electrical circuit connected with an annunciator. The water pipes of a room, or of several rooms, are passed over a drip pan, so that in case of any of them leaking the water will accumulate in the pan, in the bottom of which is held a head provided with a strainer on its top and in the pan. The head is connected at its lower end with a pipe, terminating preferably a short distance above the cellar floor. In the head, as shown in the sectional view at the left, is held an apertured partition, which forms a valve seat for a valve held on the under side of the partition, and secured on a stem passing upward through a bridge. This valve is pivotally connected to a lever fulcrumed on a suitable post. This lever plays in a saddle, and is provided with an insulated contact point adapted to be thrown in contact with a set screw screwing in the saddle, the two points being connected by wires with an annunciator. When a pipe in one of the rooms leaks, and sufficient water accumulates in the head on top of the valve, the latter, in opening, establishes an electric circuit by the wires with the annunciator, giving an alarm to attract the attention of the janitor or other person in charge of the building.

IMPROVED HATCHWAY CLOSING DEVICE.

The accompanying illustration represents the floors of a building provided with devices for closing the stair and elevator hatchways to cut off draught communication between the different floors, so that in case of fire its rapid spreading will be prevented. The invention has been patented by Mr. John P. Ketteringham, of 519 South Canal Street, Natchez, Miss., and the construction is designed to be readily applied to existing buildings, and to secure greater simplicity and efficiency than has heretofore been generally attained.

The stair and elevator hatchways are in vertical alignment, extending through the different floors, the stair hatchways being located in the hallways at one side of each floor, and the elevator hatchways at the opposite side of each floor, and to the ceiling around each of them is secured a rectangular frame, preferably of iron.

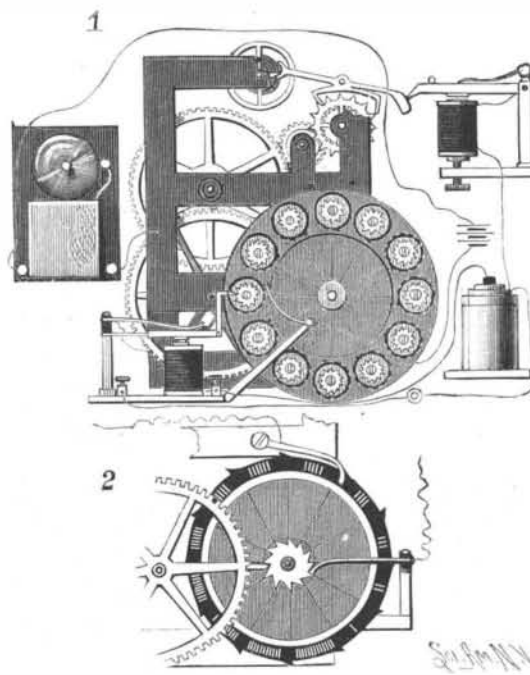
The side plates of each frame have inwardly projecting guide rails on their lower edges, straight bars sliding thereon carrying blocks on which are fixed the ends of a door section, working in close relation to the ceiling, the arrangement being such that on sliding the connected bars each door section will cover one-half of the hatchway. Upper and lower rack bars are adapted to move each door section to open or close the doors by means of pinions on a shaft mounted transversely in bearings in the side plates of the frame around the hatchway. On the outer projecting ends of these shafts, on all the stories of the building, are bevel gears connected with a single operating shaft extending vertically through the several stories. The gears on the vertical shaft also engage bevel

**KETTERINGHAM'S HATCHWAY CLOSING DEVICE FOR STAIR AND ELEVATOR SHAFTS.**

gears on the ends of short horizontal shafts, each of which is journaled in a hanger dependent from the ceiling, these horizontal shafts being so connected that on properly turning the vertical shaft all the hatchways can be either closed or opened simultaneously at will, or any of the hatchway doors can be thrown out of gear so as not to be operated with the others. The main vertical shaft is formed in sections corresponding to the several floors, and joined at each floor by detachable couplings, so that on disconnecting the proper couplings the hatchway doors on any of the floors may be operated without affecting the others. There is nothing about this construction that will burn, it is designed to be readily put in place without damage to the floors and ceilings or flooring of buildings in adjusting it to structures already completed, and can be built at a moderate cost, considering the great advantages it is intended to present.

AN ELECTRIC STRIKING AND REPEATING CLOCK.

The accompanying illustration represents a clock in which both the time movement and striking movement are operated by electricity, while the repeating mechanism can be used separately from the clock. This invention has been patented by Messrs. Alphonse M. J. Jansen and Vincent J. A. M. Jansen, of San Willibrordo, Curacao. Fig. 1 is a side elevation of this clock, and Fig. 2 a vertical transverse section, with the repeating mechanism omitted. Combined with an impulse wheel and pallets is a lever operated by an electromagnet and adapted to propel the impulse wheel, while in connection with the time movement is a strike wheel arranged to be moved intermittently, the wheel being provided with electrical contacts for completing the bell circuit. Arranged in connection with the strike wheel and its actuating mechanism is a wheel carrying a series of repeating wheels, one for each hour, the repeating wheels being constructed to make as

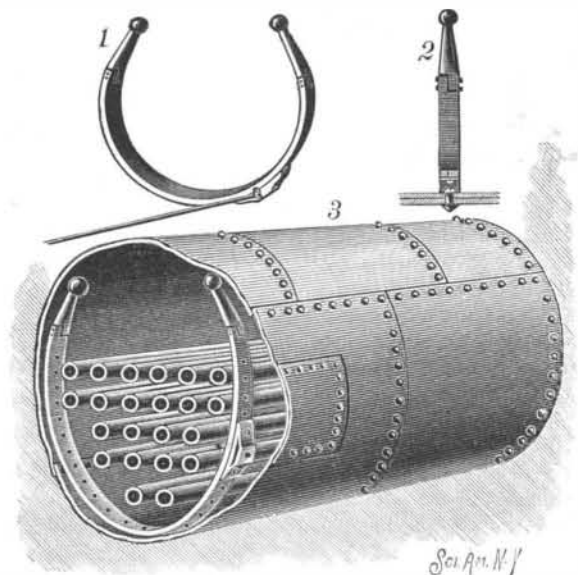
**JANSEN & JANSEN'S ELECTRIC STRIKING AND REPEATING CLOCK.**

many electrical contacts during every revolution as are necessary to make the stroke for the hour. One or more bells may be connected with the repeating part of the clock, and one or more push buttons with suitable circuit may be provided, so that the clock may be made to repeat at distant points.

Further information relative to this invention may be obtained of Mr. John M. De Pool, of No. 62 Broad Street, New York City, or of Mr. Vincent Jansen, Curacao, Dutch West Indies.

A RIVET HOLDING TOOL FOR BOILERS.

The tool herewith represented is intended to facilitate the patching of a boiler, hitherto difficult on account of the inaccessibility of the rivet heads by reason of the flues, as to properly fasten the rivets it was some-

**WEIDEMEYER'S RIVET HOLDING DEVICE.**

times necessary to remove some of the flues. This invention has been patented by Mr. John P. Weidemeyer, of Coal Grove P. O., Ohio. The tool is made of a curved strip, adapted to extend over the interior circular surface of the boiler, and easily to be passed through the manhole, the strip having handles detachably secured at its ends, as shown in Figs. 1 and 2. A die or plate, having a recess to fit over the head of a rivet, is detachably secured to, and adjustable on, the strip, by means of screws passing through threaded holes on the strip, as shown in Fig. 3, such screws having their heads countersunk in the die. In this way the die may be located in any desired position on the strip to bear against a rivet head, the die being adjusted to the proper position before the tool is introduced into the boiler. The strip, without the handles, is passed through the manhole and moved under the flues to bring the die in engagement with a rivet head, when the handles are attached to the strip and held by a man in the boiler while the rivet is being secured. Where a rivet in the bottom of the boiler is out of sight, the die may be quickly guided to the rivet by means of a rod having a hooked end, engaging an eye in the side of the die, as shown in Fig. 1. In some cases the tool may be found advantageous without detachable handles, and with a permanently fixed die or anvil, when the tool can be slipped around inside of the boiler a short distance without necessitating the removal of the die.

Learning to Think.

In every-day life no fact is more noticeable than the inability of many persons to do their own thinking, even in matters and upon lines wholly within the range of their intelligence. They will see a point that is suggested to them, and will at once understand its bearing on some matter in hand, but they do not seem to have the faculty or art of raising points for themselves, and consequently their action is not as intelligent as it might be. If given a rule to work by, they will apply it not only in season but out of season, and will look amazed if one suggests that, under special circumstances, they should have varied their usual procedure. Every employer and overseer of labor knows to what an extent this is the case. It is the exceptional workman who really thinks, and who can therefore be trusted to suit his action to circumstances. And so in nearly every sphere of life, a kind of automatism seems to be the rule, and intelligent self-direction, in the light of present facts, more or less the exception. One is, therefore, tempted to ask whether in connection with our system of education some gymnastic might not be devised for the special purpose of teaching the rising generation to think. — *Popular Science.*

SALT will curdle new milk; in preparing porridge, gravies, etc., salt should not be added until the dish is prepared.