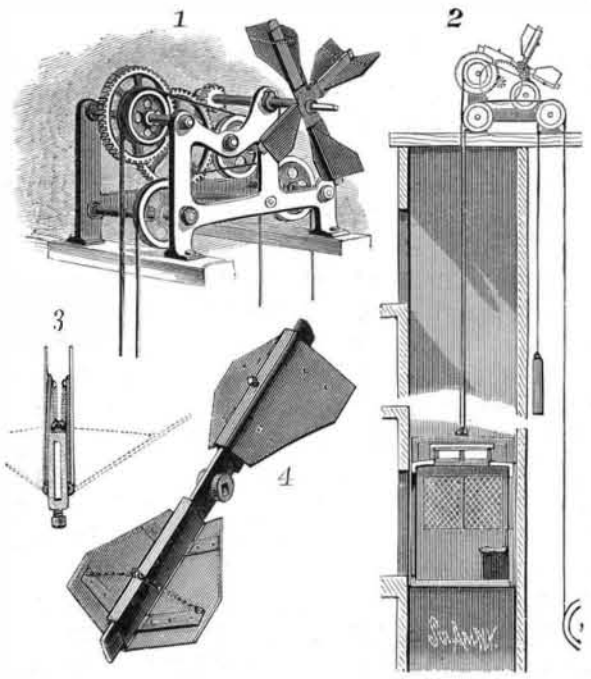
A NEW SAFETY REGULATOR FOR ELEVATORS.

A new system to prevent the falling of elevator cars from any cause whatever has recently been patented by Mr. Adolphe Gallinant, of 862 Palisade Avenue, West Hoboken, N. J.

The arrangements for raising and lowering the car are similar to those in common use, the hoisting ropes being secured to the cross head of the car, thence passing over pulleys located at the top of the shaft and then down to the hoisting engine. A second or auxiliary rope is secured to the car, passed twice or more times around a drum mounted on a shaft journaled in a frame placed at the top



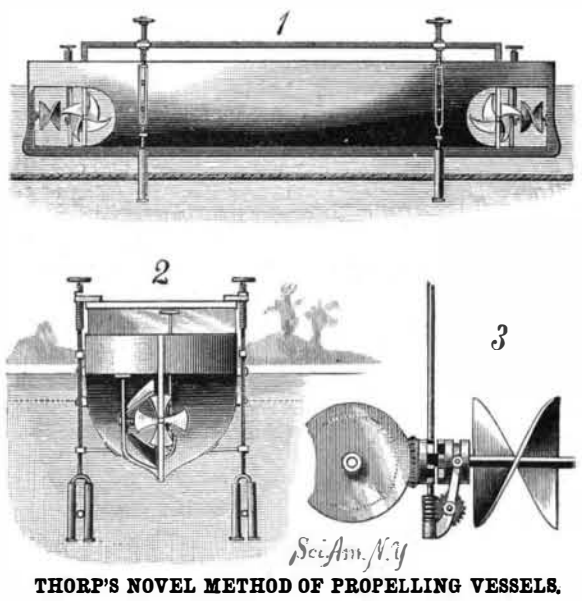
GALLINANT'S SAFETY REGULATOR FOR ELEVATORS.

of the well, thence over a pulley in the frame and down to a counterbalance weight. This weight is not heavy enough to offset the weight of the car, but is designed to always keep the rope taut, so as to prevent all possibility of its slipping on the drum. Mounted on the same shaft with the drum is a gear wheel that meshes with a pinion on a shaft carrying a second gear wheel; this meshes with a pinion on a shaft carrying the fans. The fans are made of light wood backed with canvas, and are so hinged to a bar, as shown in Figs. 3 and 4, that they will be closed (as indicated by the full lines in Fig. 3) during the ascent of the car, and will be opened (as indicated by the dotted lines) during the descent.

In case the hoisting ropes should break, the fans would be brought into operation to sustain the car, which would descend at a perfectly safe rate of speed; and the auxiliary ropes, having no work to perform except carrying the small counterweight, would not be liable to wear, and could always be relied upon to accomplish this. In general practice the length of the fans—from out to out—should be one-half the width of the shaft, but it will be readily perceived that by changing the number and size of the fans the speed of the car while descending may be perfectly controlled. This device may be easily adapted to any of the elevators or dumb waiters now in use without changing any of the existing parts. Among the many advantages it possesses are its non-liability to get out of order, wear upon the reserve ropes is reduced to a minimum, it is automatic in action, and requires little or no attention.

NOVEL METHOD OF PROPELLING VESSELS.

An invention patented by Mr. L. Charles Thorp, of Port au Prince, Hayti, provides improvements in vessels used on



THORP'S NOVEL METHOD OF PROPELLING VESSELS.

ferries in crossing rivers, whereby they can be propelled across the stream by the action of the current. Fig. 1 is a side elevation of the vessel, Fig. 2 is an end view, and Fig. 3 shows the propeller screw and the device for throwing it in and out of gear. The vessel is guided by cables, stretched across the river below the surface, which pass through forks on the lower ends of vertical rods which are swiveled to the lower ends of screws held on the sides of the vessel, and provided with hand wheels at their upper ends, by means of which the forks can be adjusted higher and lower, according to the tide. In each end of the vessel is a propeller screw mounted upon a horizontal shaft. On the inner end of each shaft is a loosely mounted beveled pinion, which engages with a wheel mounted on a shaft placed at right angles to the screw shaft. On the second shaft is a water wheel or bucket wheel, so arranged that it revolves in a vertical plane at right angles to that in which the screw revolves. Clutch teeth formed on the beveled pinion engage with the teeth of a clutch collar mounted upon the shaft so that it can slide on, but revolve with, the shaft. The clutch collar is shifted by means of a fork, on the pivot of which is mounted a worm wheel which engages with a worm on the lower end of a vertical rod, provided at its upper end with a hand wheel. The current, which, as a rule, flows at right angles to the direction in which the vessel is to move, strikes the water wheel and revolves the propeller, thereby moving the vessel across the stream. As each end of the vessel is provided with this device, one of which will propel it in one direction and the other in the opposite direction, and which act independently of each other, it is apparent that the to and fro motion across the stream can be easily effected by throwing the proper wheels into gear while the others remain idle.

Ammonia for Flowering Plants and Strawberry Plants.

A writer in London *Gardeners' Chronicle* says: Last year I was induced to try an experiment in chrysanthemum growing, and for this purpose purchased one pound of sulphate of ammonia, which I bottled and corked, as the ammonia evaporates very rapidly. I then selected four plants from my collection, putting them by themselves, gave them a teaspoonful of ammonia in a gallon of water twice a week. In a fortnight's time the result was most striking; for though I watered the others with liquid cow manure they looked lean when compared with the ammonia watered plants, whose leaves turned to a very dark green, which they carried to the edge of the pots until the flowers were cut. As a matter of course the flowers were splendid. The ammonia used is rather expensive, as I bought it from a chemist's shop; this year I intend getting agricultural ammonia, which is much cheaper. I have also tried it on strawberries, with the same satisfactory result, the crop being nearly double that of the others; it is very powerful, and requires to be used with caution.

Tempering Thin Mills.

It is a somewhat risky job to harden and temper, without springing, thin lathe saws, or milling tools, made from sheet steel. When sprung, they *may* be straightened, if not too much out, by hammering; but not one machinist in ten knows just how to do it, and no verbal instruction can teach the trick.

But a good workman, who is not afraid to tell his secrets, says that he never fails. His plan is to have two disks of cast iron, preferably of a size small enough to allow the teeth of the saw to project beyond their rims. The inner face of these he scores (in the pattern, of course) into radial and annular scores, so that the engaging faces will present only minute points. These castings are chucked and faced so as to be true, and the saw placed between them and held by a nut and bolt passing through a central hole. Plates and saw are heated together and chilled together in the oil, which, by means of the scores, is allowed to reach nearly the entire surface of the saw. There is no springing of the saw under this treatment.

A CROW HUT.

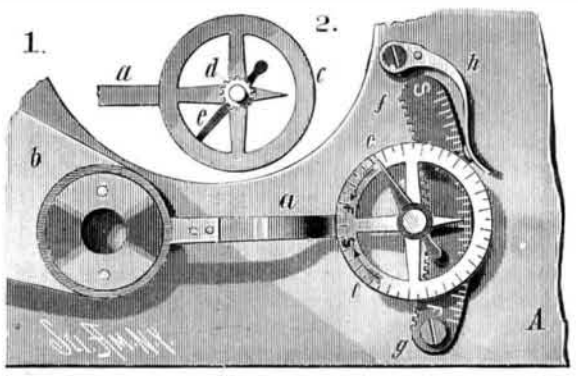
It is well known that crows, buzzards, ravens, and other similar birds attack all owls, even the largest, in the daytime, as they are well aware that the bright daylight blinds owls to such an extent that it is impossible for them to defend themselves; and for this reason the huntsman uses a chained owl for attracting crows and other birds that he wishes to destroy. The owl is chained on an upright post or rod provided with a crotch or small platform on which the bird can sit. This post or rod is connected with a rope or chain passing over suitable pulleys and extending to a hut, so that by pulling the rope or chain the support or platform on which the owl rests can be moved up and down, thus causing the owl to move about, flap his wings, and create a commotion to attract the other birds. A short distance from this post a low shanty or hut is erected, the side toward the post, on which the owl is chained, being provided with small openings, through which the barrels of the guns can be thrust. The hut should be erected at the base of a large tree, as many birds of prey prefer to take a short rest before attacking their enemy, the owl.

A short time after the owl has been chained, it is surrounded by a flying mob that begins to bother and pester it, the large birds being very bold and audacious in their attacks. The hunter in the shanty or hut can take good aim, and kill a large number of birds in a very short time, for it seems that the killing of some of the birds does not disturb the rest, and those dispatched by the hunter are immediately replaced by others.

The engraving on next page, taken from the *Illustrirte Zeitung*, is a copy of a drawing by the well known painter, Ludwig Beckmann.

WATCH REGULATOR.

The engraving shows a regulator, recently patented by Mr. George I. Tuttle, of Aurora, Ill., that will allow of the finest and most accurate adjustment, and one that can be readily used without risk of injury to the parts of the watch. The regulator arm, *a*, is hung on the balance bridge, *b*, as usual. On the outer end of the arm is fixed a graduated dial, *c*, of circular form, that carries an arbor at its center, and on the arbor beneath the dial is a pinion, *d*, shown in Fig. 2, which is a back face view of the arm. A curved rack, *f*, of suitable length, is attached at one end to the watch plate, A, by a screw, *g*; and a spring, *h*, attached to the plate, bears on



TUTTLE'S WATCH REGULATOR.

the free end of the rack, so as to retain it in mesh with the pinion at all times, while allowing a certain amount of elasticity. The rack plate has a graduated scale on its face for indicating the extent of movement of the arm, *a*, the end of which extending over the rack is pointed.

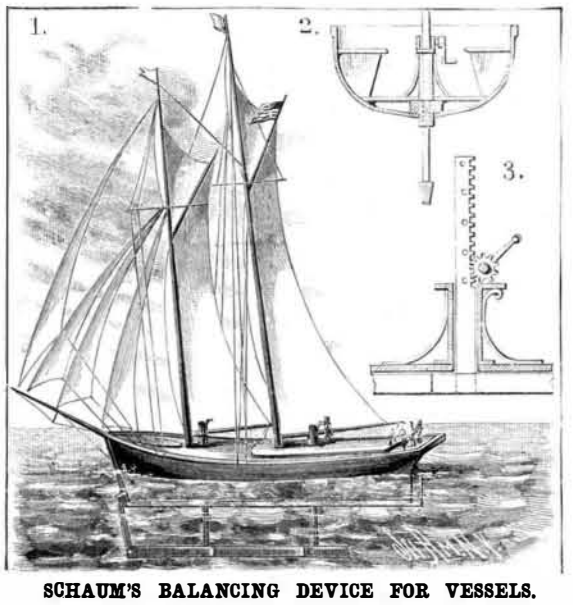
In order to operate the regulator, the pointer, *e*, is turned by using any simple instrument, and the pinion, turning on the rack, causes the arm, *a*, to travel in either direction as the case may be. The movement of the pointer will be considerable to obtain a slight movement of the regulator arm, so that fine adjustment is possible, and the extent of movement is determined by the scale. The dial, being at a distance from the balance, there is no risk of injuring the spring or wheel.

A Splendid Aerolite Secured.

The *Telegraph* reports that an aerolite fell on the farm of C. Francois, at Chateau Richer, a short distance from Quebec, at 3 A.M., on Saturday, Dec. 13, 1884. It was dug from the ground, in which it had embedded itself, and was found to measure about a foot in diameter. The people were so startled by the intense light that many rushed out of their houses to ascertain its cause. They say that the falling meteor presented the appearance of a huge ball of fire, which lighted up the whole country side almost with the brilliancy of the noonday sun.

BALANCING DEVICE FOR VESSELS.

Two or more hollow standards are erected on the keel of the vessel. On each standard is journaled a shaft provided with a crank handle and carrying a pinion, which engages with a rack passed loosely through a standard. The lower ends of the rack bars are connected by a longitudinal bar, parallel with the keel, and having its top edge adapted to rest in a groove in the keel. To the front end of the bar is pivoted a link, the upper end of which slides on a guide bar secured to the prow of the vessel. A heavy bar is fastened to the connecting bar between the racks. During a storm or very strong wind, when there is danger of the vessel being capsized, the crank handles are turned in such a manner as to cause the pinions to move the racks and connecting bar downward; the bar may be lowered more or less, as required. By moving the bar downward the center of gravity of the



SCHAUM'S BALANCING DEVICE FOR VESSELS.

vessel is lowered, the metacenter is raised, and the stability of the vessel materially increased. Of course the weight of the bar and distance it can be lowered are varied according to the size and shape of the vessel.

This invention has been patented by Mr. Rudolph Schaum, of Tell City, Ind.