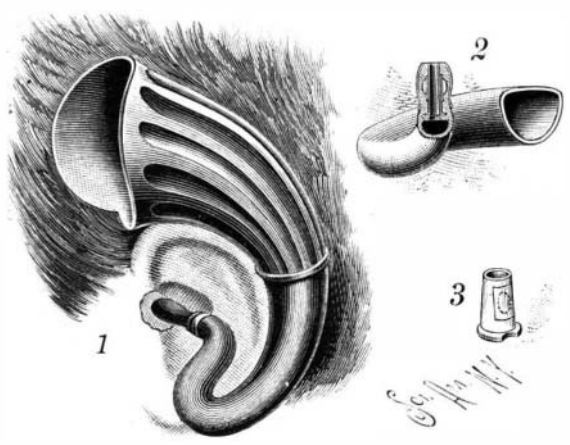
Icebergs.

The formation of icebergs was watched, last summer, by Mr. H. B. Loomis and Prof. Muir, while staying seven weeks near the Muir glacier (*Amer. Jour. of Science*). The falling of blocks from the terminal wall was very irregular; at times, about every five minutes; while at other times the observer might wait an hour without seeing one fall. One day, in twelve hours, 129 thundering reports from the falling bergs were heard at camp, about a mile off. In heavy rain, especially, it seemed as if a thunderstorm or cannonade were going on. Sometimes a block, breaking off, bursts into fragments, and falls like a cataract. Again, an enormous block will sink unbroken into the water, then rise, perhaps 250 feet, even with the top of the glacier, the water pouring off it; then topple on its side with a heavy thundering roar, scattering spray in all directions, and wallow about among other icebergs like a huge monster.

A CONVENIENT EAR TRUMPET.

An ear trumpet which may ordinarily be carried and supported about the ear in position for service without inconvenience to the wearer is shown in the accompanying illustration, and has been patented by Dr. F. M. Blodgett, aurist, of No. 1286 Broadway, New York City. The receiver or bell is of volute form, as shown in Fig. 1, the outer curve being of gradually increasing radius, while the inner curve is adapted to fit around the back and over the top of the ear, so that the trumpet stays in place without holding. A further parabolic curve in the diminishing end of the trumpet terminates in a horizontal tip to enter the ear orifice, a sectional view of the tip being shown in Fig. 2. In the interior of the tip is placed a small metal tube, Fig. 3, having side apertures over which are placed diaphragms of rubber or other tissue, these diaphragms covering inside spaces or chambers in the tip, to



BLODGETT'S EAR TRUMPET.

modify or augment the sound waves as they pass through the trumpet and enter the ear. On the outer surface of the tip is a covering of soft rubber or other suitable material, to protect the ear orifice and partially adhere to it to assist in holding the receiver in place.

AN IMPROVED COPY HOLDER.

The device shown in the illustration is designed for the use of all copyists, but especially for recorders, and has been for some time in use in the office of the inventor, who is a recorder. By its use the copy can be conveniently followed down the page, and when the copyist is interrupted, the indicator may be made to point out the exact place at which he left off. Two longitudinally tapering boards are employed, one being used as a base board and the other as a copy support, and the copy-supporting board is connected with the base board by a spring metal strap having at one end a clasp adapted to be slipped upon one end of the base board, the other end of the strap having a clasp to be slipped on the lower end of the copy-supporting board, as shown in full and dotted lines in Fig. 1. A spring wire frame is attached to the front face of the copy-holding board, the lower portion of the frame having a bend near the bottom, while the ends of the wire are doubled under the lower end of the board, the extreme ends being bent inward and driven into the back side of the board. A cross bar, preferably made of spring metal, extends across the frame, and is doubled under at one end and returned upon itself and bent to form a slideway for one member of the frame. This bar, of which a section is shown in Fig. 3, has a spring clamp adjacent to the slideway, the clamp and bar being preferably formed of a single piece of metal. An indicator, shown in Fig. 2, is mounted to slide on the cross bar, the indicator being made of a single piece of spring metal doubled upon itself.

For further information relative to this invention address the patentee, Mr. George H. Seymour, Newark, Ohio.

A Spider's Engineering Feat.

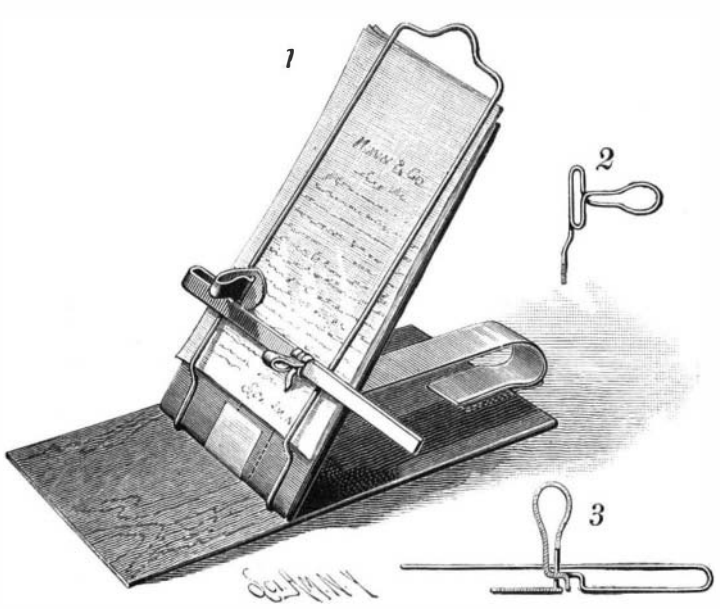
Popular interest at Syracuse, N. Y., has centered during the past few days in the operations of a spider of the *Tegenaria medicinalis* species over a bar in a saloon in that city. Thousands of people have gone into the place to watch the spider accomplish an engineering feat which displays in the insect almost human capacity, and the saloon keeper is becoming rich by the patronage of his visitors during the star engagement of the spider. The insect set out on Tuesday to lift a kernel of popped corn from a dish on the bar to its web attached to an electric light wire on the ceiling. It descended on the kernel by spinning a cable of the necessary length. It was evident, however, that when the spider hoisted the load clear from the dish, its uneven weight would cause it to lop to one side so suddenly as to probably snap the cable. To prevent such an accident the spider attached two smaller sized cables to projecting parts of the kernel and made them fast to the main cable about five inches above the burden.

All being ready, the spider returned to his headquarters and started its windlass, and the kernel began to rise. That was the situation when the people in the saloon first discovered what was going on. After getting the corn up about a foot, work was suspended for a time. The spider had begun to mistrust some of the machinery. It made an investigation, repaired a slight break or two above in the guys, and then slid down to the corn. Everything there was all solid, but the engineer thought prudence a mark of wisdom, and doubled up the cable where the main weight was seen to hang. This was at 11 o'clock on Tuesday night, and, with a more cheerful air of confidence than it had before displayed, the spider ran lightly aloft to the hoisting apparatus. The machine started, and so did the corn, and so did the eager throng of spectators, who burst into applause. Inside of a minute the corn was raised at least four inches. Then there was another delay, which was only short.

At midnight on Tuesday the corn had risen two feet. At daylight on Wednesday it was up thirty-six inches. There it seemed to stick. All day Wednesday only slight progress was made, though the spider never relaxed its efforts. Sometimes the burden even receded. Then there was a series of jerks, but the machinery overhead seemed to slip a cog, and no headway was made. Late on Wednesday night operations were temporarily suspended, and the spider retired to its inner chamber for contemplation. Thanksgiving day was spent in the completion of further plans or in rest, and Friday morning the work rested where it had stopped on Wednesday night. The spider went up and down the main cable time and time again, apparently mending it, and finally, toward evening, began to draw up, but with only partial success, though it was cheered on by a crowd of spectators. The sporting fraternity are backing the spider at 10 to 5.—*N. Y. Sun.*

Prepared Pumpkin Pulp.

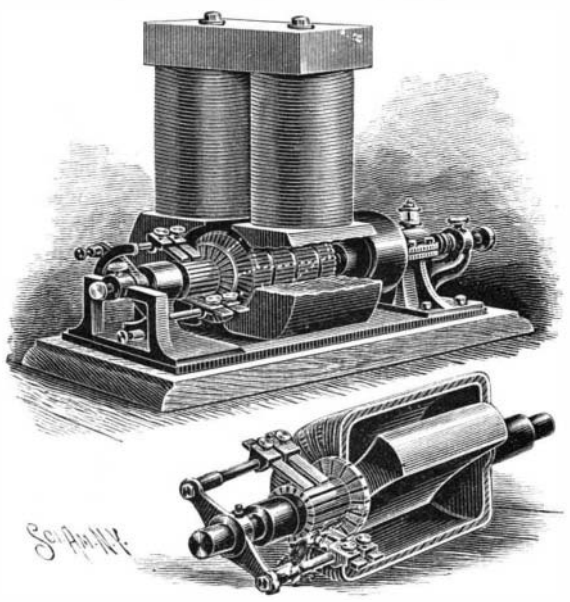
The following method is by Gustav Bartel, of New York: Take pumpkins or squashes, open and peel them, and remove the seeds and all other parts which are of no use in the subsequent preparation of marmalade. The purified flesh of the fruit thus obtained is then cut up into small cubes and placed in a vessel with a sufficient quantity of water to cover the fruit. To this water add a small quantity of borax—about one ounce to five pounds of the purified fruit—and then heat the vessel till the water boils. By the action of the borax the peculiar unpleasant taste of the pumpkin or squash is extracted, and after the boiling has been continued for some time—say ten minutes—separate the pulp from the liquid, which can be done by pouring the contents of the vessel upon a suitable filter. The pulp obtained in this manner is free from the peculiar, unpleasant taste of a pumpkin or squash, while the same retains all its nutritious qualities, so that it can be used with great advantage for the preparation of marmalades of various kinds.



SEYMOUR'S COPY HOLDER.

A REGULATOR FOR DYNAMOS AND MOTORS.

The illustration represents a regulator in which the armature core is designed to shift automatically in accordance with the drag or lead of the armature, always taking up its position with its poles in the strongest part of the field, the brushes being held to the point of the least sparking, and the adjustment of the brushes being effected automatically by every



CLEAVER & FASSOLD'S AUTOMATIC REGULATOR FOR DYNAMOS AND MOTORS.

change of load upon the dynamo or motor. The improvement has been patented by Mr. Fremont J. Cleaver, electrician of the Second Avenue Electric Power Railroad Company, Pittsburg, Pa., and Mr. George Fassold, of the same city. The armature has circular end pieces mounted on tubular shafts, and to these end pieces is secured a hollow cylinder of non-magnetic material, wound with the conductor in the usual way, as shown in the broken-away portion of the main view in our illustration, the terminals of the coil being connected with the commutator cylinder. Upon the central shaft, and loosely fitting the hollow cylinder, is an armature core consisting of the segment of a cylinder of iron having concave sides, as shown in the small view. The central shaft is prolonged beyond the tubular armature shafts, the ends of the central shaft being supported on pointed screws in yokes attached to the supports of the journal boxes of the tubular shafts. To the central shaft at its commutator end is secured a cross arm of insulating material in which are held rods carrying the commutator brushes. The cross arm also carries metallic contact plates electrically connected with the rods, and which touch curved bars which receive the current from the brushes, the curved bars having binding posts for receiving the conducting wires leading from the dynamo. On the end of the central shaft opposite that carrying the cross arm is attached one end of a spiral spring, attached by its other end to the yoke, to oppose the pull of the armature on the segmental core, and to return the core and the brushes to their original position when the machine is idle, so that the brushes will always occupy the same position relative to the segmental core.

The Fireless Locomotive.

M. C. Rolland, in Mons, Belgium, has constructed a fireless locomotive for use in mines. It is provided with a tank that holds 0·550 cubic meter. The water is heated to 205° C. (or an absolute tension of 16 atmospheres) by a boiler placed on the surface; it is sufficient for a steady run of 3 to 4 kilometers. The heating is brought about by means of steam jets, as first proposed by Mr. Bede, Belgium. The heat thus stored up in the rather small space gradually evaporates the water required to run the machinery. At a speed of 2 meters per second, the locomotive works with 6 horse power, that of a horse being generally estimated at from 0·9 to 1·0 m., so that the locomotive, working day and night uninterruptedly, takes the place of from 12 to 18 horses, besides a good many laborers. The saving is calculated to be $200 per horse dispensed with. As a further advantage, this locomotive secures better ventilation. The weight of the locomotive is 3,000 kg.