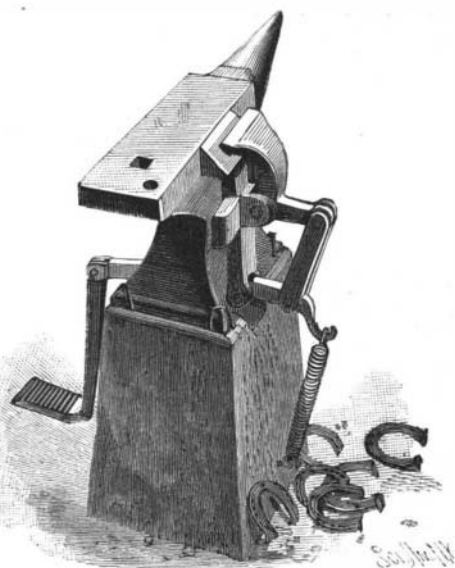


A LIGHT AND SIMPLE MOTOR.

A motor to be operated by the hands and feet, which may be used for driving flying machines and other purposes, and is designed to bring into play all the muscles of the body, is shown in the accompanying illustration, and has been patented by Mr. Theodore A. Stark, of Ottawa, Ill. In use for a flying machine, as shown, the motor is provided with a light open frame having an open central space large enough to receive the body, the frame being suspended from an aeroplane, which may or may not be inflated. The motor consists of a straight hollow bar, with a central slot for a driving shaft and pulley, an endless belt wound once or twice around the pulley running also over pulleys journaled in forks at the ends of the bar, the forks being adjustable to give the proper tension to the belt. On the bar near its ends are slides, one to be moved by the hands and the other by the feet, and the slides have on each side projecting grooved abutments through which passes the driving belt, a swinging leaf or link being so arranged in each abutment that when the slide is pulled in one direction the leaf on one side will permit the slide to move freely along the belt, but when moved in the other direction the leaf binds the belt in the abutment, and the movement of the slide is imparted to the belt. In side extensions of the frame are journaled propelling wheels, whose hubs have grooved pulleys connected by a belt with the driving pulley, whereby the motor is operated as a flying machine, the propeller blades being arranged at such angle that they will lift upward on the machine, and also move it forward.

A HORSESHOE SHARPENING APPLIANCE.

A novel anvil attachment designed to facilitate the sharpening of horseshoes is shown in the accompanying illustration, and has been patented by Mr. Jerome W. Rapp, of Pineville, Pa. A vertically adjustable keeper is fastened to the front of the anvil by a bolt passed through a slot, and on the face of the keeper are teeth engaged by teeth on a shank which carries at its upper end a die at the side of and at an angle to the top or face of the angle, the same bolt also fastening the shank in place on the keeper. On the sides of



RAPP'S HORSESHOE SHARPENER.

the shank are lugs carrying a pivot for a lever which has an upper curved end extending opposite the die, the lower end of the lever being connected by a link with a pivoted lever passing through a slot in the foundation, and having at its end a downward extension and footpiece. The clamping lever is normally held away from the die by a spring, until the operator presses upon the foot piece, after the shoe has been placed in position to sharpen the calks. With this construction the operator has both hands free to manipulate and work on the shoe, which is held securely in place on the anvil by simple pressure on the foot piece.

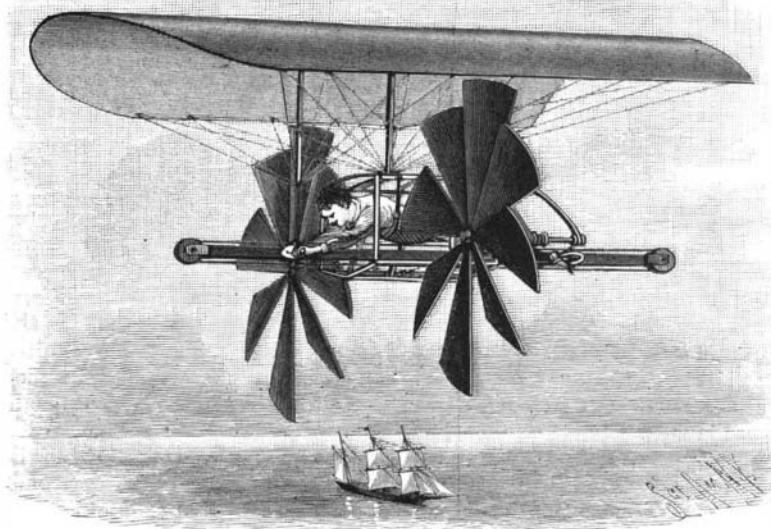
Cold Storage for Silks.

The cold storage of furs and woollens as a preventive against moths is now quite familiar to the public, but the cold storage of silks is, we apprehend, a new suggestion for which the trade has to thank the observing New Yorkers. The theory and practice are thus described by a recent writer:

"Raw silk is sold by weight, and when stored in ordinary warehouses the silk dries and naturally decreases in value. By storing it in a cold vault the moisture is preserved and the silk keeps its weight. There is another curious fact in regard to the cold storage of silk. Many large dealers in silks and ribbons keep their bales and bolts in cold storage with the temperature reduced below the freezing point. It was discovered some years ago that silk in winter usually had a

finer luster than in summer. The cold air was supposed to be accountable for the change, and an experiment was tried in keeping bales of silk in cold rooms for comparison with others on the store counters.

"The cold silk then appeared to be of a much finer quality, when in reality it was from the same loom. As soon as this fact became generally recognized the large



STARK'S MOTOR FOR FLYING MACHINES, ETC.

silk dealers went to the cold storage warehouses and had their silks placed in freezing vaults. In some cases the thermometer is kept as low as 10°, and when the bales are taken out they feel like blocks of ice. Some firms keep most of their stock in storage, and only take silk out in quantities equal to the anticipated sales of the day, for the luster acquired by freezing soon disappears after exposure on the bargain counter. It is asserted that an inferior grade of silk while extremely cold has the feeling and appearance of a much higher grade which has not been frozen; while, on the other hand, it has been found that the best grades are not improved by the arctic treatment."

AN IMPROVED FIRE APPARATUS.

The accompanying illustration represents a combined fire escape and fire extinguisher patented by Mr. M. A. Pauly, of Eau Claire, Wis. It is designed to be raised in the center of the street, so that the firemen may work over telegraph and other wires strung on poles, and is provided with insulated shears for cutting all kinds of interfering wires. The apparatus is carried by a frame upon a wagon body, the wheels being mounted to make short turns. At one end of the body is a shaft to which is secured the lower section of an extensible ladder whose sections slide one upon another. The lower ladder section is raised to the desired angle by means of a bowed rack bar, acted upon through a crank and connected gearing, and at the top of each ladder section except the top one is an arrangement of cables and pulleys whereby a crankshaft may be worked at the top of one section to raise the next section, and so on until all the sections are raised. Near the top of each ladder section is a swinging platform, connected with which are detachable ladders, bracing the main ladder and connecting it with the ground, to facilitate the carrying up of hose and afford further means of escape. In the upper end of each ladder section is a drum carrying a strong rope adapted to serve as a track for a life car, one end of the rope to be thrown to a window in the building, where it is to be made fast, when the drum is turned to take up any slack. Beneath this drum is another on which is the carrying rope for a life car, the arrangement being such that by turning the drum the car will be moved quickly backward and forward to convey people from the building to the landing. The car is also supplied with a small rope with which a fireman may raise a line of hose, to direct a stream upon the building from the car. When not in use the sections are run down to make the ladder as short as possible, and so that all will lie horizontally on the frame.

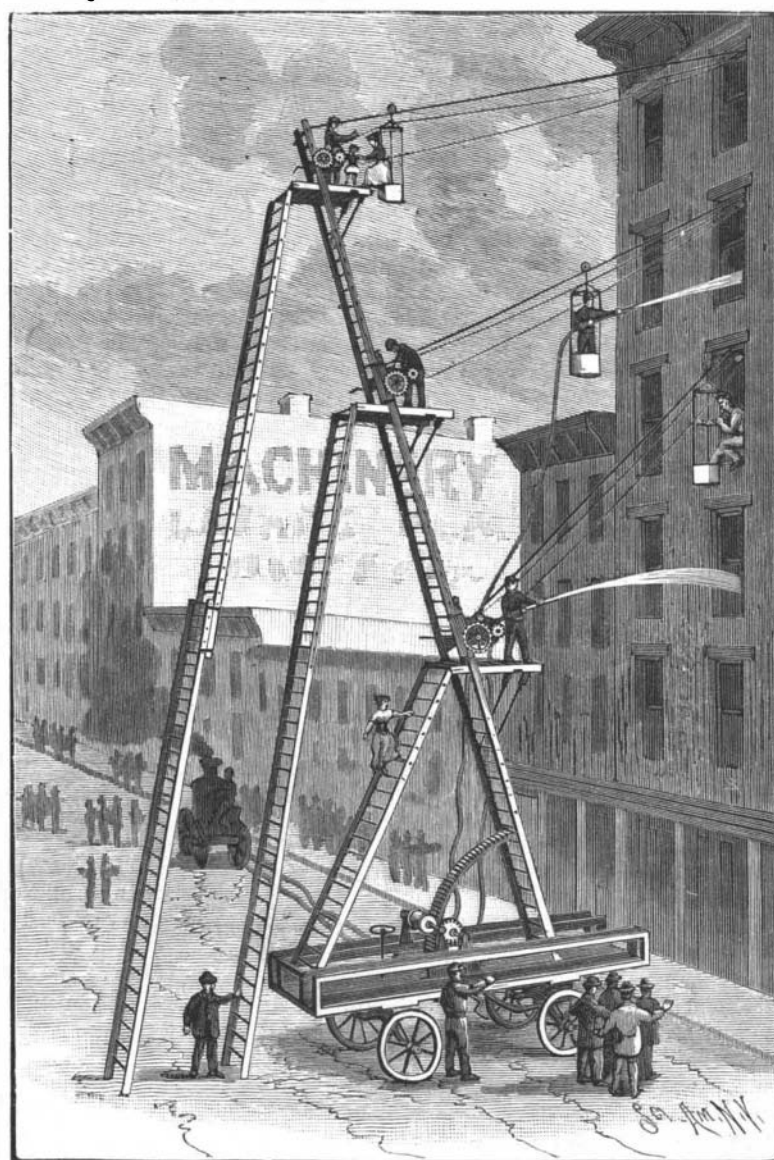
The apparatus being placed in position the gears upon the frame are turned to actuate the rack bar, raising the sections to the desired angle, when a fireman goes up the first section, cuts interfering wires, and runs up section two to its position, swinging the plat-

form of the first section horizontally, adjusting its front standards, and fastening the back short ladder to the back end of the beams of the platform. A small rope tied to a hook and pulley at the loose end of the life lines is then thrown to a window in the building, where the hook is placed in a ring in the window casing or ceiling, after which the life lines are adjusted to the proper tension, and the fireman begins to operate the gears above the platform to move the car back and forth. Another fireman, in the meantime, runs up the third section, and in a similar manner adjusts its platform and back ladder, and makes the life line connection. To overcome any liability to sag back of the section being raised, a triangular arm ending with a gear wheel runs in a rack bar in the outside of each side frame of a section, being firmly fastened to the outside of the side frames near the top of the stationary section. The platforms are designed to be sufficiently strong to prevent the sectional ladders from being pulled forward or sagging backward.

Anticholerin of Klebs.

Professor Klebs, reasoning that every organism during its lifetime produced substances which if allowed to accumulate would result in the death of such organism (in the case of man and animals these products are carbonic oxide, bile, urine, etc.); has realized success in the treatment of tuberculosis by a preparation, "*tuberculocidin*," made from the cultures of the tuberculosis bacillus (*Am. Jour. Pharm.* 1891, 599); the failure of Koch's *tuberculin* is explainable by the presence of products which have specific toxic action upon man along with the products which are destructive to the bacilli; by removing the former substances (called alkaloids) a preparation is obtained not injurious to man, but fatal to the bacilli. *Anticholerin* is a preparation in which these reasonings are applied in the purification of an extract from the culture of the comma bacillus, and which has given very encouraging results in the treatment of cholera in a Hamburg hospital; while only the most serious cases were treated with it, the number of fatal cases was 16-17 per cent less than was the case with other treatment. The preparation is a clear, brown-yellow viscid liquid, having an odor reminding of cholera patients; it is injected into muscular tissue of the stomach, or into the subcutaneous tissue of the thigh. —*Dr. Manchot (D. Med. Wochenschr.), Pharm. Ztg., 1892, 719; Am. Jour. Pharm.*

THE newest walking-stick is verily a light unto his feet and a lamp unto his path—an electric light is hidden in the handle.



PAULY'S FIRE APPARATUS.