

## NEW RADIAL DRILL.

We present an engraving of a radial drilling machine recently perfected by Messrs. Wm. Sellers & Co., Philadelphia. In this machine they have utilized the plan of belt ing so successfully employed on their other forms of ical drilling machines. They claim a gain of from 15 to er cent in the amount of work done by a belted spindle hine as compared with radial drills in which the power nveyed to the spindle through a long train of gears; drills, too, are said to last longer, to be less likely to k, owing to the smooth motion imparted by the belt as pared to that by gearing. The swinging carrying the drill spindle is hung, crane on, to a long saddle; this saddle slides on ice of a stout upright—is, in fact, so long and all fitted as not to need clamping when the is in place. This saddle and arm is raised owered by power, the mechanism for this ose being operated by a hand lever at ide of upright. The saddle carrying the le is moved out and in on the swinging bar diagonal shaft operating a spiral pinion g into a straight rack after the manner so known in the planing machines built by Sellers & Co. The spindle which carries ill passes entirely through its driving sleeve, ence has always the same length of bear-t is also very close to the face of the swing-m; it has a quick hand motion and an ad-le feed by power. This feed is novel and any advantages; it is stopped and started lly by a simple motion of a lever above the wheel in front of the drill spindle. The tained from one of the guide pulley shafts adjustable through a wide range of gra-3, in two series, one for small drills, and a series to be used when the back gear is ed, as when using large drills or when The spindle, although belt-driven, for s of drills under say  $1\frac{1}{2}$  inches, is pro- with back gearing for larger sizes; in this it corresponds and acts as any back-lathe head used for the same purpose. ck gearing of this machine is in a com-position on the saddle and within easy f the workman. The spindle is counter-d up.

great advantage claimed is in the raising ering of the swinging arm as compared machines in which this arm is fixed at gth, and to which the work must be set. In this the work to be drilled can be clamped to a table, l or rested on the bed plate or adjusted on trestles; ase the work, when placed within range of the ma-as the spindle quickly moved to it by power and ing done with the least loss of time possible. urn that the makers claim many new features in this , which they will protect by letters patent. They o sizes, one with 4 feet 6 inches and the other with ius, each with power in proportion.

## IMPROVED STEAM FOG HORN.

Improvements in the fog horn, shown in the engraving, were suggested by Professor Holmes, their ing to secure rce and regu the action of and greater g power to emitted. be operated essed air or ich enters by . The valve, ated by the dmitting the air into the ). At E are disks com-siren, one ched to the other loose. ge from the the large the air or a rotary the free terrupting and pro-e sound, ent is said ounterful. y Messrs. onier & , and has l for use h line of steamers from New York to Havre.

## Domesticated Hornets.

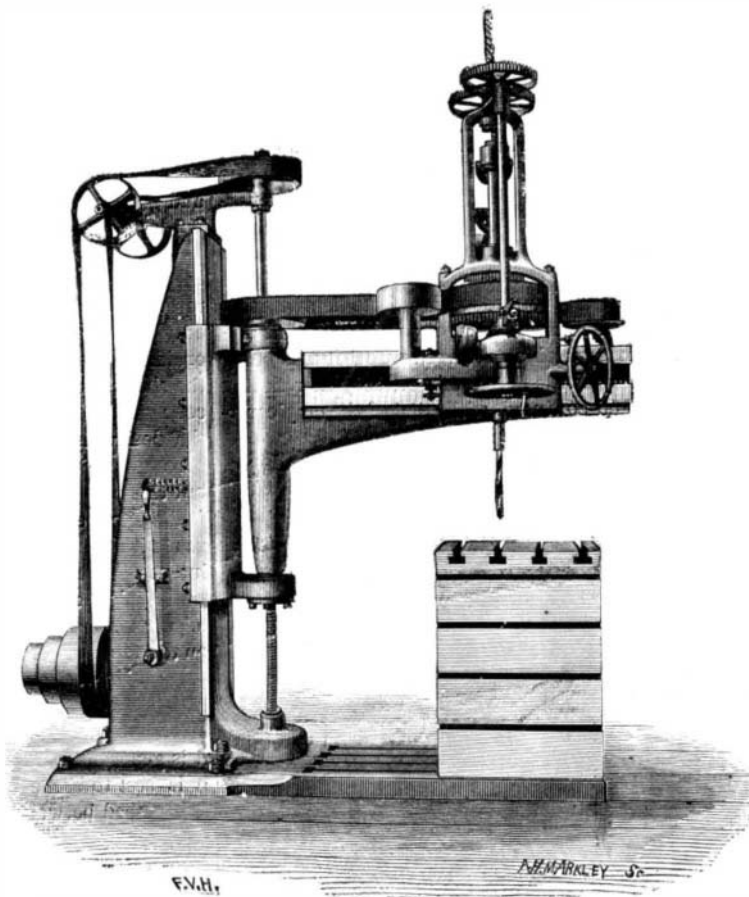
A farmer has adopted an efficient but slightly of ridding his house of flies. He has hung from his parlor a nest of hornets, transferred bodily ls. The removal of the nest did not seriously

displease the hornets, and as they found the house well stocked with flies for food, they soon became familiar and harmless, devoting their energies to the extermination of the flies.

## MISCELLANEOUS INVENTIONS.

Julia A. King, of Sherman, Texas, has patented a cough medicine consisting of a decoction of Indian pleurisy root (*Asclepias tuberosa*), saltpeter, honey, and brandy.

Mr. Walter Savage, of Crookston, Minn., has patented an improved snow plow for removing snow from railroad



WM. SELLERS &amp; CO'S RADIAL DRILL.

tracks. This plow is designed to be made of wood clad with iron to increase its weight, strength, and durability.

An improved cylinder for thrashing or hulling has been patented by Mr. James I. McClung, of Sidney, Ohio. The invention consists in constructing the cylinder with rabbeted and recessed lugs to receive the teeth, and in constructing the teeth with tenons or tongues, so that the teeth may be reversed and replaced.

A combined cradle and carriage has been patented by Mr. George F. Doyle, of Boston, Mass. The invention consists in combining with the rockers of a cradle the axles of a carriage, the axles being concaved to receive the rockers, so that the rockers and axles may be readily attached and detached.

automatic wagon brake for which letters patent No. 196,406, dated October 23, 1877, were issued to W. L. Whitman and E. Manes.

A buckle, especially adapted for fastening and securing rolled cloths and other goods that are put up in rolls, has been patented by Mr. Calvin W. Polen, of Hazel Dell, Ill. The buckle is made of wire, bent so as to form a rectangular frame, having two square loops and a central crossbar that has two downward curved hooks, and it has a double-pointed and barred wire tongue placed on the central cross-bar of the buckle, the tongue points being pointed in the di- kction opposite to that of the frame hooks.

Mr. Louis W. Ott, of Indianapolis, Ind., has patented an improved bedstead lounge which is readily opened and closed and is not liable to get out of repair.

An improved neck yoke has been patented by Mr. John W. Barton, of Emporia, Kan. The object of this invention is to provide an elastic support within the neck yoke for securing and holding the tongues of all kinds of vehicles, including reapers, mowers, and other machines.

Mr. Henry Thompson, of Brooklyn, N. Y., has patented a ventilated can in which milk or other liquid may be filtered and from which it may be drawn free from impurities.

A bath box for the use of photographers and others, by which the escape of poisonous gases, to the injury of the operator, is prevented, has been patented by Mr. James C. Macurdy, of Boonville, Mo.

An improvement in patterns for close fitting sleeves for dresses has been patented by Mary A. Taylor, of New York city. In order to obtain the required fullness for the elbow, sleeves have heretofore been made in two pieces with a seam on the outer curve; but difficulty is experienced in joining the seam neatly on account of the fullness that has to be gathered in the seam. The object of this invention is to obtain a proper fit with the required fullness for the elbow by a pattern that can be readily sewed up at the seams. The invention consists in a sleeve pattern made in a single piece and formed with a dart extending from one side toward the center to form a short seam that extends from the lengthwise seam of the sleeve to near the point of the elbow.

Mr. George P. Cole, of Johnstown, N. Y., has patented a composition for cleansing marble, etc., consisting of lime, whiting, sal soda, soft soap, fine salt, emery dust, fish oil, and water.

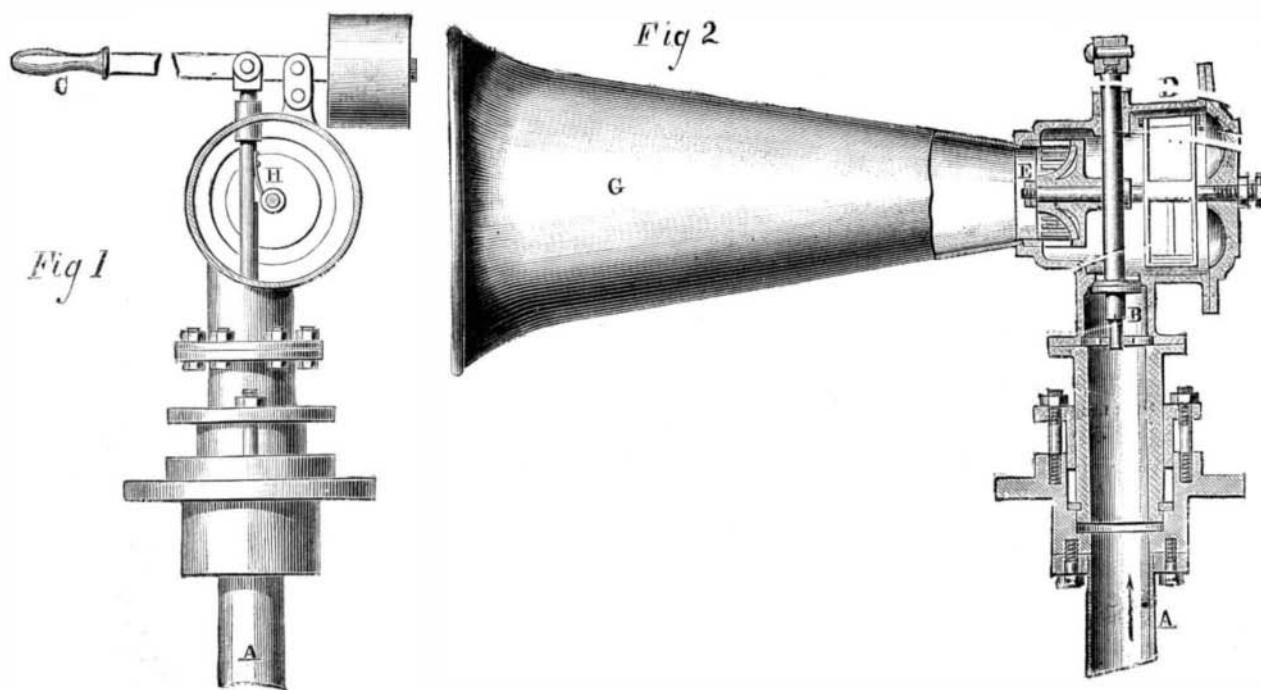
Mr. Thomas Wherritt, of Cynthia, Ky., has patented an improved fire escape which consists in a swinging frame carrying a windlass having reel heads, a rope wound between the reel heads and of a length sufficient to reach to the ground, a set of friction straps fastened to the swinging frame and wrapped once or twice around the windlass on each side of the reel, and connected at their lower ends to a sleeve encompassing the rope, which sleeve is provided with an adjustable friction device, which, binding with the rope as it pays out, regulates the tension or brake action of the friction straps.

Messrs. F. Parker and F. Dumont, Jr., of Jersey City Heights, N. J., have patented a case for key and stem winding watches, the object being to produce light and inexpensive cases.

An improvement in the class of fire escapes adapted to be suspended from a window of a building, has been patented by Messrs. Theodore Lindberg, of Brooklyn, N. Y. It is more particularly an improvement upon such apparatus as consists of a frame that is designed to be attached to a window sill, and is provided with a curved standard, from which a basket or other receptacle for persons and goods is suspended by means of a rope running through a sheave or pulley block.

An improved wrapper for glass bottles for the purpose of obviating the danger of breakage, and also for protecting the labels from abrasion or other injury by contact of the bottles with each other or with other objects while being handled or shipped, has been patented by Mr. Martin V. Kacer, of St. Louis, Mo.

An improved hopple of the kind used for fettering animals to prevent their straying away, and to restrain their



STEAM FOG HORN.

A hat ironing machine, so constructed that the shell can be readily guided to all parts of the sides and crown of a hat body, has been patented by Messrs. R. S. Hedden and L. A. McCormick, of Newark, N. J.

An improved wagon brake has been patented by Messrs. W. L. Whitman, of Ringgold, Ga., and J. D. Igon, of James County, Tenn. This invention is an improvement upon the