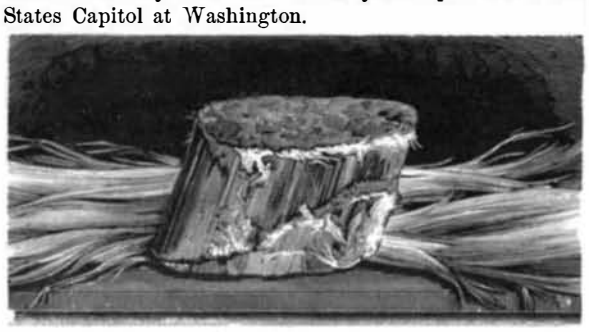
a wide field for future growth. It is worthy of mention that the largest contract ever made for paints, *i. e.*, that for painting the Metropolitan Elevated Railroad of this city, was awarded to this company, and their liquid white has been exclusively used for several years upon the United States Capitol at Washington.



Asbestos.

The New York office of the company is at No. 87 Maiden Lane, where illustrated catalogues, descriptive of their inventions, can be obtained, and their goods are sold by dealers in all the principal cities and towns in this country and abroad. The London house of Messrs. Witty & Wyatt, No. 9 Fenchurch street, E. C., have the sale of these goods in Great Britain and the English colonies.

PENCIL HOLDER AND SCISSORS.

A handy combination of pencil holder and scissors is shown in the annexed engraving. The pencil holder may be of any of the usual forms. The one illustrated is what is known as a pencil-point protector, having a shoulder in the middle to limit the extent to which the pencil can be inserted. The tube beyond the shoulder is fitted to receive a small pair of scissors, which are attached to a block connected with an external sliding sleeve, by means of which they are projected from or drawn into the tube.

Benson's Combined Pencil Holder and Scissors.

This invention was lately patented by Mr. H. C. Benson, of New York city.

Action of Vegetable Acids on Tin.

Professor Charles E. Munroe, of Annapolis, states that the ordinary fruit acids, such as those contained in apples, tomatoes, rhubarb, lemons, etc., all acted upon tin. Some cider which he examined, and which had been stored in a tin fountain, contained 117 milligrammes of metallic tin to the liter in solution. One case was given where persons eating fruit preserved in tin cans were made violently sick, and tin only was found in the fruit. Corrosion of tin pipes by water was referred to, and it was suggested that the corrosion was due to the vegetable acids in the water.

NEW ICE CRUSHER.

We give an engraving of an improved ice crusher made by Thomas Mills & Bro., 1301 North Eighth street, Philadelphia, Pa., which is the result of a long experience both in the practical use and in the manufacture of machines of this class. The machine shown in the engraving is designed to be driven by power, but this firm also make crushers to be driven by hand.

The essential features of this machine are clearly represented. The movable and fixed spiked jaws converge, so that as a piece of ice becomes reduced in size by the crushing action of the jaws it continually falls until it is finally reduced to small pieces which come within the capacity of the speculated rollers at the bottom, which can be adjusted to crush the ice to any degree of fineness. Below the rollers there is a follower which pushes the crushed ice out toward the rear of the machine.

The largest of these machines will receive an ice cake weighing 100 lb., and will crush 10 to 12 tons per hour. The smallest machine takes a cake weighing 10 lb., and there are several intermediate sizes.

The advantage of this machine is that the ice can be rapidly crushed to a uniform size, insuring the degree of compactness most desirable for packing purposes.

These machines are in use by hotels, ice cream factories, fish packers, and private families, and are acknowledged to be efficient and satisfactory.

NEW ADJUSTER FOR MIRROR AND PICTURE FRAMES.

It requires no little skill to hang a series of pictures at a uniform angle, and it is often difficult to attach the cord to a mirror so that it will have the desired inclination without bracing or propping of some sort. To avoid these difficulties Mr. Charles A. Simpson, of Saxonville, Mass., has invented a very simple and inexpensive attachment for frame hangings, which is readily applied and holds the frame at any desired angle.

The frame is hung with cords in the usual way, but the screw eyes are so located that it may hang a little straighter than the desired angle. Near the lower corners, on either side of the frame, is placed a screw eye, C. A cord, D, attached to the picture cord by means of a common hook, A, and passing through the screw eye, C, is provided at the

SIMPSON'S ADJUSTER FOR HANGING FRAMES.

end with a flat hook, B, which clamps the cord by being canted by means of the weight of the frame. The hook, B, may be moved up or down on the cord, D, to alter the inclination of the frame. The adjustment is the same for both sides of the frame.

The advantages of this simple invention are too apparent to need recital here. It enables one to adjust his frames at any desired angle, and it insures their remaining in position.

Test of a Safety Elevator.

The proprietors of the Grand Central Hotel, in this city, recently gave a public exhibition of the efficiency of a safety air cushion which had been affixed to their large passenger elevator by the inventor, Mr. F. T. Ellithorpe. The elevator was, the makers claimed, the largest and heaviest in the world. The safety cushion consisted of a stout rubber bag, so placed beneath the floor of the elevator as to expand by the upward pressure of the air confined in the elevator shaft, and gradually arrest the fall of the elevator by filling the shaft like a piston head, and retarding the escape of the air from a closed well at the bottom.

In making the test the supports of the elevator were severed, and the elevator was allowed to drop a distance of 123 feet, retarded only by the safety cushion. The inventor had faith enough in his protective device to trust his life to it, and made the hazardous trip not only without harm but without serious discomfort. The motion of the elevator was arrested with so little shock that several eggs on the floor were not cracked, nor was a goblet of water overturned. No record was made of the pressure of the air in the well or of the time covered by the fall. The motion of the elevator was very rapid until within a few feet of the bottom. The efficiency of the safety cushion was amply demonstrated.

Iridium for Electric Lights.

The latest material offered for an incombustible "burner" for the electric light is iridium. Mr. Holland, gold pen maker of Cincinnati, claims to have discovered a flux by means of which he is able to fuse iridium in an ordinary draught furnace. He casts the metal in any shape desired, and in bars or ingots weighing as much as ten ounces. The metal thus fused and cast defies the file and resists all acids. The only mechanical way of cutting it is by friction with a copper wheel charged with diamond dust or fine corundum. Mr. Holland claims, further, that the cast iridium makes suitable "burners" for the electric light, and that so used the metal is durable without protection from the atmosphere.

IMPROVED HAND HOE.

The engraving shows an improved hand hoe adapted to universal use in the cutting away of grass or manipulating the soil about plants. The novelty consists in the peculiar form of the blade, which is constructed of a main body portion setting off to one side of the longitudinal axis of the handle in a parallel plane therewith, and a curved or upturned end portion, which, as well as the main portion, is sharp upon both edges.

This useful tool was recently patented by Mr. Robert L. Turner, of Olena, Ohio.

Turner's Hand Hoe.

RECENT INVENTIONS.

Mr. George W. McKenzie, of Dyersburg, Tenn., has patented an improvement in baling presses by which great pressure is exerted upon the bale, and which is easily and rapidly operated. A hinged lever, connected with the follower and provided with a clevis, pulleys, and rope for actuating the same, are the principal features of the improvement.

Mr. Thomas D. Gallagher, of Cleveland, Ohio, has patented an improvement in stock cars, which supplies readily detachable troughs for feeding and watering cattle during transportation. The trough is attached and detachably secured on the outside of the car by flanged edges working over longitudinal braces on the car.

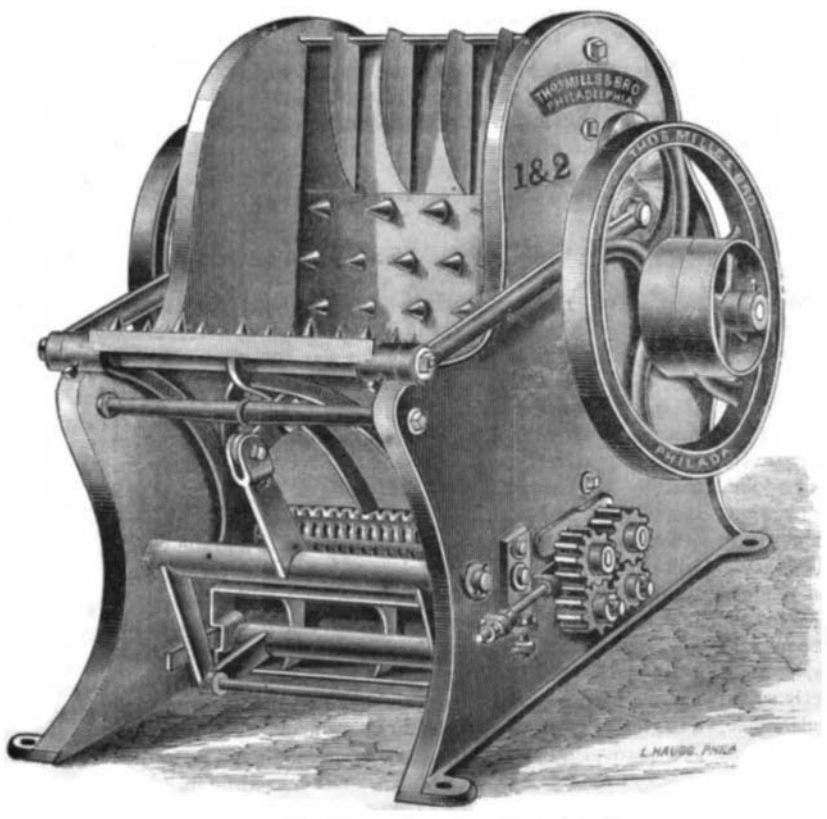
Mr. Ross Hall, of Millersburg, Ohio, has patented an improved stove of that class having exterior attached reservoirs or feeders delivering coal into the lower part of the fire pot. The arrangement is such that the combustible gases evolved by heat from the coal in the lower part of the fire pot pass up through the incandescent coal, where they are consumed and add to the heat of combustion.

Mr. Henry H. Spencer, of Mound City, Ill., has patented a rotary spading machine which imparts to the spades a compound rotary and reciprocating movement, their rotary motion being temporarily arrested while they enter the ground without checking the movement of the carriage or causing strains upon the gearing, and at a suitable moment withdraws the spades, completely frees them from the earth, and turns the latter over.

Mr. Abel Henning, of Easton, Md, has patented an improved carbureting apparatus, in which a peculiar arrangement of parts causes the pump which feeds the oil to a mixing chamber to be operated by the same power which actuates the air blower. Peculiar devices for volatilizing the oil and mixing the vapors with air are also supplied.

Mr. Samuel T. Richardson, of Cambridge, Md., has patented a lever power and dredge winder, designed more especially for oyster dredges, but applicable to analogous purposes, which not only much reduces the very hard labor of dredging in the ordinary way, but also avoids the danger to life and limb caused by oyster dredges catching on a rock.

Mr. Jacob Katzenberg, of New York city, has patented an improvement in suspenders



IMPROVED ICE CRUSHER.