

COMBINED BAG HOLDER AND TRUCK.

The truck board, provided at its lower end with wheels and foot piece, has its upper end tapered to form a handle having a head. In each side of the lower part of the handle is a longitudinal groove. A metal rod, Fig. 3, from $\frac{3}{8}$ to $\frac{1}{2}$ inch in diameter, is bent to form a large loop, which may be square, circular, or oblong, and the inner ends are bent down and crossed



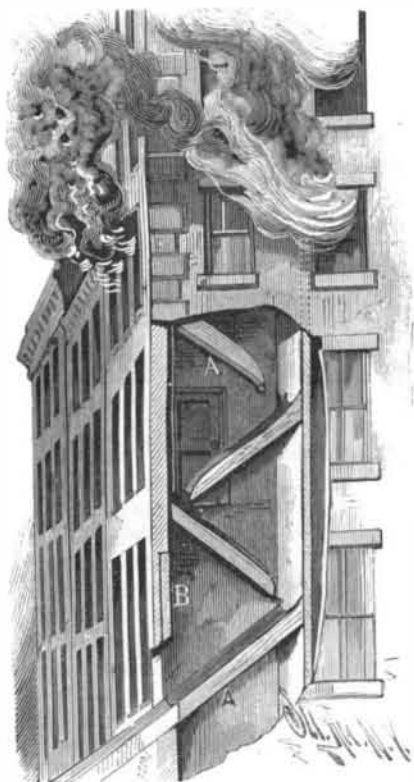
HATZ'S COMBINED BAG HOLDER AND TRUCK.

to form a loop, and are then bent inward to form hooks. The holder is placed on the front of the board at the upper end, the handle portion is passed through the small loop, and the hooks are passed into the side grooves. The open end of the bag is passed through the large loop, and the end seam is turned down over the outside of the loop and over the head. The bag can then be easily filled, as its mouth is held open, and as the weight in the bag increases, the top is held more firmly on the loop. If desired, the loop can be formed as shown in Fig. 2, the ends being bent to form a square frame and the hooks being dispensed with. Moving the filled bag about is facilitated by its being held to the truck.

This invention has been patented by Mr. Casper Hatz, of Big Stone City, Dakota.

FIRE ESCAPE.

In a vertical shaft on the inside or outside of the building, a fire escape is erected consisting of a series of inclined ways or chutes, A, which are secured to the walls or arranged between them, and are alternately inclined in opposite directions, the lower end of one chute being a short distance above the upper end of



GOLLINGS' FIRE ESCAPE.

the next lower. Two chutes are placed for each story, one extending from the floor to the middle of the story below, and the other from the middle to the floor below, and so on. The upper surfaces of the chutes are hollowed out, and carpet or canvas is secured to the top edges of the sides to form an elastic support. At each floor is a door located at the upper end of a chute. At the lower end of the lowest chute is a door, B, sliding vertically in a recess in the wall; attached to this door is a wire extending upward on the side of the shaft and connected by a wire, passing over a pulley, with the swinging edge of the door at each story. By opening any one of the doors the wire

is pulled upward and the sliding door raised. Persons step from the floor upon a chute, and sliding down alternately in opposite directions, are landed on the ground. If desired, a sliding piece may be arranged on the bottom chute in such a manner that it will slide out and form a continuation of the chute when the door is raised.

This invention has been patented by Mr. Henry Gollings, of Beltzhoover, Pa.

How to Keep Moths Out of Carriages.

As this is a subject of very great importance, especially at this season of the year, we will not wait until we have tested the remedy suggested by an old trimmer, who has been using it for a number of years back, and claims for it a comparative victory over those destructive pests known as moths. His plan is an invisible one, and strikes at the very harboring places they infest. The plan is a mixture of the paste, and will not in any way impair the quality of the paste nor stain the linings, as might at first be supposed. The paste is made up in the usual way with fine tar mixed in it, in the proportion of two tablespoonfuls to a gallon of paste.

By putting this in the paste you will readily see that the preventive is distributed throughout the whole carriage. The odor, it is said, remains a long time, but is not sufficiently strong to render it disagreeable to smell; hence the advisability of using it in the carriage business.—*Carriage Monthly.*

Geological Survey of New Jersey.

The Director of the State Survey, Prof. George H. Cook, is now preparing a complete atlas of New Jersey, several sheets of which are already issued. Including the margin, they are each 27 by 37 inches, and are intended to be folded once, making the dimensions of the atlas $18\frac{1}{2}$ by 27 inches. When completed there will be seven of these sheets, drawn to the uniform scale of one mile to the inch. Those so far issued are six in number: No. 2, Southwestern Highlands; No. 3, Central Highlands; No. 4, Northeastern Highlands; No. 6, Central Red Sandstone; No. 7, Northeastern Red Sandstone; and No. 16, Egg Harbor. The remaining eleven sheets are expected to be issued during the course of the next three years. A small map of the State is published on the titlepage sheet, and by its division into numbered rectangles affords an easy key to the system of mapping employed.

It seems to have been the purpose to so divide the State that each separate map should show its territory grouped around some center of either geological or commercial importance. Though the plan necessitates much repetition, many localities being thus made to appear on four different sheets, it possesses undoubted advantages in making the maps more convenient for local use, and this, after all, is the chief object of such surveys, or should be. The topographical part of the work is excellent, and is unsurpassed by that of any State, not even excluding Pennsylvania from the comparison, the maps of which have gained a cosmopolitan reputation.

HARNESS ATTACHMENT.

The engraving represents an invention patented by Mr. John Siebel, of Oskaloosa, Iowa, which consists mainly of an oscillating yoke or frame to which the shafts of the vehicle are attached. Leading from the vehicle, which may be of any approved construction, is a long, upwardly curved reach that extends over the horse to the back pad of the harness. The forward end of the reach is forked, and each piece is formed with an eye. Secured to the back pad are blocks formed with lugs in which the horizontal arms of the yoke are journaled. The ends of these arms are formed with eyes that constitute guides for the lines of harness. The yoke is composed of an upper and lower bow, provided at their centers with studs on which the eyes of the reach are placed. These studs form pivots to permit the horse to turn without cramping the reach, and the yoke arms form horizontal pivots, so that in passing over uneven ground the up and down movement of the horse and vehicle will not cramp the back pad or reach, nor interfere with the free motion of the horse.



SIEBEL'S HARNESS ATTACHMENT.

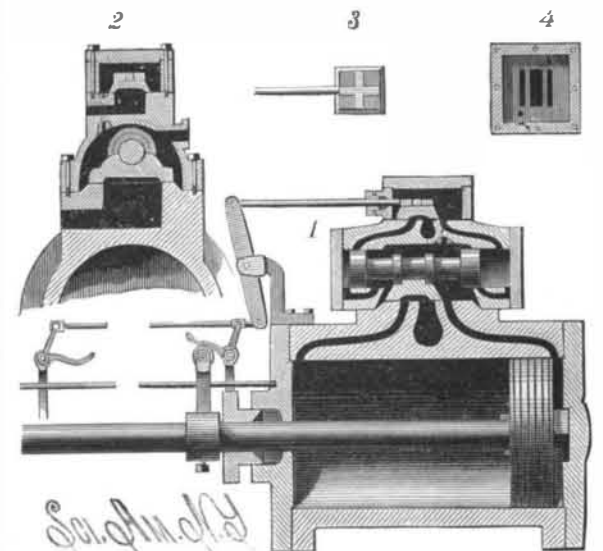
This invention has been patented by Mr. Alfred Horsfield, of Hazleton, Pa.

Tiers-Argent.

This alloy is much employed in the factories of Paris for the manufacture of silverware. As is indicated by its name, it consists of one-third, or 33.33 per cent, silver and two-thirds, or 66.66 per cent, aluminum, and is worked to great advantage both by reason of its cheaper price (the kilogramme [43 ounces 3 dwts.] costing about 90 francs) and its superior hardness; at the same time, it is more easily pressed and engraved than the silver-copper alloys.

STEAM ACTUATED VALVE.

Held on the piston rod outside of the cylinder is a collar, from which projects an arm having a roller pivoted on its upper end. Through an eye in the arm passes a guide rod having one end fixed in the head of the cylinder and the other end fixed in a suitable support, so as to prevent the piston from turning and swinging the arm out of a vertical position. Pivoted on an arm on the end of the cylinder is a lever, whose lower end is connected by a rod with two angle tappets (shown in Fig. 1) pivoted on suitable uprights. The cylinder is provided with steam passages leading from the chest to the two ends, and with the usual exhaust passage. A supplementary steam chest is formed on top of the main one, and contains a slide or other valve (Fig. 3) connected with the upper end of the lever. On the bottom of the main chest is a slide valve moved by a shaft having



HORSFIELD'S STEAM ACTUATED VALVE.

on its ends pistons that fit closely in cylindrical chambers in the ends of the chest. Ports formed in the bottoms of these chambers extend from a point at the bottom near the outer end to a point at the inner end, as shown in Fig. 1. Ports also extend from the bottom of the upper chest down to the top of the other, and establish communication between the two. Live steam is conducted into the lower chest through a side opening, shown in Fig. 2. When the parts are in the position shown in Fig. 1, live steam passes through the channel to the right hand end of the cylinder, and forces the piston forward; the exhaust passage is then open. Live steam is also in the passage leading to the right hand chamber of the main chest, and also between the end of the opposite chamber and its piston, and in the corresponding short passage. As the piston nears the end of its stroke, its arm strikes the tappet, and the valve in the upper chest is shifted; the shifting of the steam actuated valve then takes place. The route taken by the steam upon the return stroke may be easily understood from the drawing. Fig. 4 is a plan view of the bottom of the supplementary steam chest.