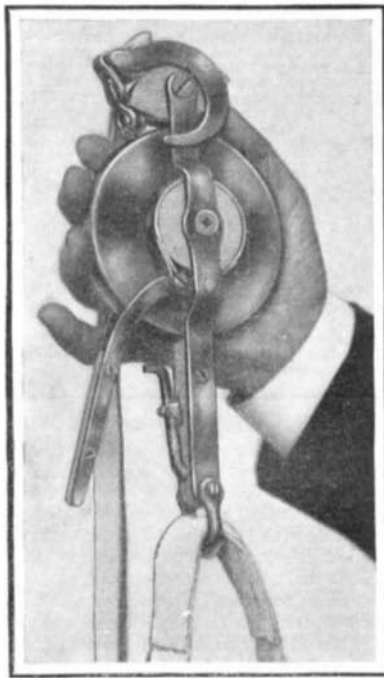


AN EFFICIENT PORTABLE FIRE ESCAPE.

In the accompanying engraving we illustrate a small but very efficient fire escape, which will be found useful in hotels, or may be kept in the home, ready for use in case of emergency. No hotel is perfectly fireproof, and



AN EFFICIENT PORTABLE FIRE ESCAPE.

a traveling man is constantly exposed to the danger of fire. For such a person this fire escape is particularly advantageous, because it occupies a minimum of space in the valise or trunk. It consists essentially of a roll of steel tape, coiled on a drum, and having a grapple attachment to the free end, which may be hooked over the window sill. The drum is completely inclosed in a casing, except for a pair of hubs which project on opposite sides, and carry a pair of brake bands attached to a brake lever, as shown more clearly in our enlarged view of the fire escape. The drum is mounted on a shaft, which has bearings in a pair of side straps. The latter extend below the drum, and form a handle by which the apparatus may be grasped. A shackle is attached to the lower end of the handle, and this carries a belt, which may be passed around the body of the escaping person. In use with the grapple hooked over the window casing, and the belt buckled around the body, the operator seizes both the handle and brake lever in his hand, and lowers himself out of the window with an extra strap hooked at one end to the grapple. When ready, this strap is released, and the tape is then let out under control of the brake bands; that is, the downward motion can be entirely arrested or varied in speed by varying the grip on the brake lever. The weak point in many fire escapes is to be found at the points where the tape or rope is attached. In the present case the attachment is so made that the tape is not weakened in the least. At the point where the tape issues from the casing, a guide roller is provided to prevent its being bent too sharply. The fire escape may also be used to lower a child, or a person who has lost control of his senses, by inverting the device and attaching the person to the strap hooked to the grapple. In such case, the brake lever is operated by a person remaining at the window above. A crank handle is provided, which may be fixed to the drum shaft to rewind the tape. A patent on this fire escape has been granted to Mr. David N. Luse, of Carroll, Iowa.



METHOD OF USING THE FIRE ESCAPE.

A NOVEL TOBACCO PIPE.

A pipe has long been considered the ideal means of smoking tobacco, except for certain objections which inventors have for years been endeavoring to overcome. The jet of hot smoke issuing from the pipe stem and striking the tongue usually at one spot is apt to produce great irritation and generally induces an abnormal flow of saliva which enters and clogs the pipe stem. In the accompanying illustration we show a novel pipe recently invented by Mr. C. Elkin, Times Building, New York, which is so constructed as to cool the smoke before it issues from the stem. Furthermore, a mouthpiece of peculiar design is provided, which deflects the smoke and directs it in several tiny jets toward the roof of the mouth, and not against the tongue. The mouthpiece is also adapted to prevent entrance of saliva into the stem, or if by chance any does enter, it entirely prevents the saliva from being drawn out again. Our engraving shows the bowl and stem partly broken away to indicate the course of the smoke through the pipe. It will be observed that a small smokeway leads from the bowl to a large chamber at the rear, thence the smoke is drawn up through a small opening into an inverted conical chamber in the stem, whence it passes through a small bore to the nozzle, entering there a cap or mouthpiece from which it is finally drawn into the mouth through orifices in the upper wall of the cap. It will be evident that as the hot smoke enters the first large chamber it immediately expands, giving off a portion of its heat, when in the stem chamber a second expansion results in further cooling the smoke, and finally at the cap a third expansion takes place, so that when it enters the mouth it is materially cooler than smoke drawn through an ordinary straight stem. Furthermore, the several orifices distribute the smoke over a broader area. The usual oily deposit collects largely in the first chamber, from which it may be readily removed with a strip of blotting paper. The upper walls of the stem chamber, and also the rear wall of the cap, act as baffles, producing a whirling of the smoke and causing a certain amount of deposit, which,



A NOVEL TOBACCO PIPE.

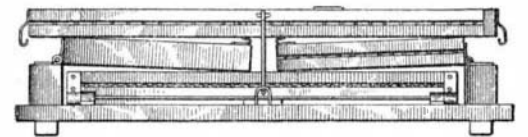
however, cannot in any way be sucked into the mouth. A small air hole is drilled into the stem just above the nozzle. Ordinarily this is covered with the lip, but, when desired, this hole may be uncovered, permitting the entrance of air into the stem, which mixes with the smoke and further cools and dilutes it. In this way the smoker can vary the strength of the smoke he is drawing in.

IMPROVED FOLDING COOP.

An improved folding coop adapted for the transportation of poultry by boat or rail, is illustrated in the accompanying engraving. While similar in many respects to certain folding coops now in general use, it embodies some additional details of construction, which render it very substantial either when erected for service or when folded into a compact package, and which enable the production of the coop at a moderate cost. The general construction will be evident by a glance at the engraving. A rectangular base of thin boards, batted together, has hinged to it at each end a pair of end walls comprising the usual frames and wire screen fillings. Similar walls are provided at the sides, but these are hinged to the posts at such a height that when the end walls are folded down the side walls may be folded to lie flat over them. The cover of the coop is made of a single large frame with panels of wire filling in it. It is provided with stout hooks at each end, which, when the coop is folded, are hooked into staples on the baseboard, and lock the parts firmly together in folded condition.

In setting up the coop, the top is first removed, then the side and end walls are swung up. Hasps are hinged to the side walls, and hook over staples on the end walls being locked in place by hooks. After the sides are secured, the top is slid endwise into position. Along the top of each side piece is a hook plate adapted to engage a corresponding hook plate on the cover, as shown in the engraving. This holds the top from being lifted off, and prevents side movement, but to prevent end movement, a latch bolt is mounted at one end of the cover, and this may be moved down into engagement with a staple or a keeper-loop on one of

the end walls. A hand hole provided in the cover consists of a pivoted door, which may be rocked open by pressing on one end. The coop when used for temporarily housing live fowls is provided with sheet metal receptacles for food and water, above each of which a canopy projects to prevent entrance of dirt. Messrs. Robert Yoakum and Patrick C. McKee, of 4514

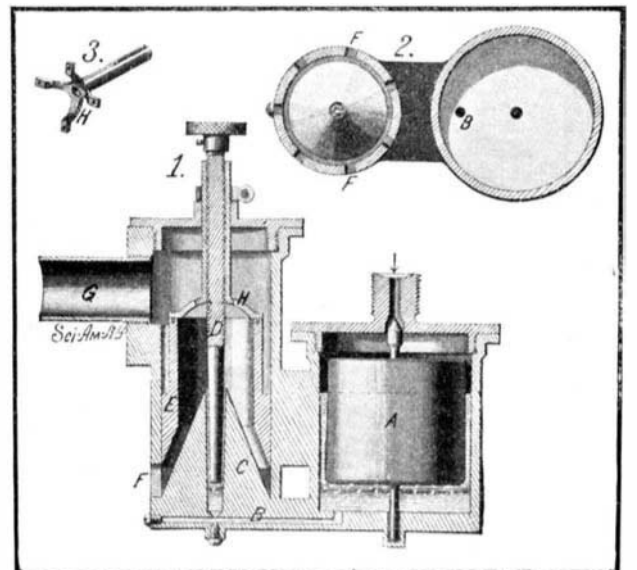


IMPROVED FOLDING COOP.

Wood Street, Brumer, Texas, have recently secured a patent on this improved coop.

AN IMPROVED CARBURETER.

A carbureter of new design has recently been invented by Mr. John T. Orr, of Dillon, Mont., Box 245. This carbureter has for its main object to secure an absolutely intimate association of the sprayed hydrocarbon and the air, and to provide devices facilitating the absolute control of the carbureter, so that the volume of air and fuel admitted to the engine may be regulated at will without varying the proportions of mixture. As indicated in the accompanying engraving, the construction includes a float chamber in which there is a float, A, adapted to regulate the supply of gasoline. The float chamber is connected by a passage B with the carbureter chamber. The bottom of this chamber is formed with a cone, C, in the center of which is a gasoline passage. This passage is tapered, and operating in it is a pin valve, D, which is correspondingly tapered, so that by adjusting the valve upward or downward, the area of the gasoline passage may be regulated. Over the cone, C, is a tubular member, E, provided at the lower end with a tapered surface, the pitch of which corresponds with that of a cone. The annular passage between this surface and cone connects at its lower end with the air inlets, F. Fastened to the upper end of the tubular member is a spider, H, formed with a hollow shank, which is threaded over the stem of the pin valve. The hollow shank is held by friction in the cover of the carbureter, and may be adjusted to open or close the annular passage to any desired extent, and at the same time, it is evident, it will open or close the gasoline passage. It will thus be seen that the invention provides first for independent adjustment of the valve and sleeve, to attain the proper proportion of air and oil, and then for a combined regulation of the quantity of mixture which may be drawn up by the engine sucking through tube, G. The invention may be used to great advantage in connection with a governor for automatically controlling the fuel supply, and in this case the governor connection will be attached to the tubular shank of the spider.



AN IMPROVED CARBURETER.