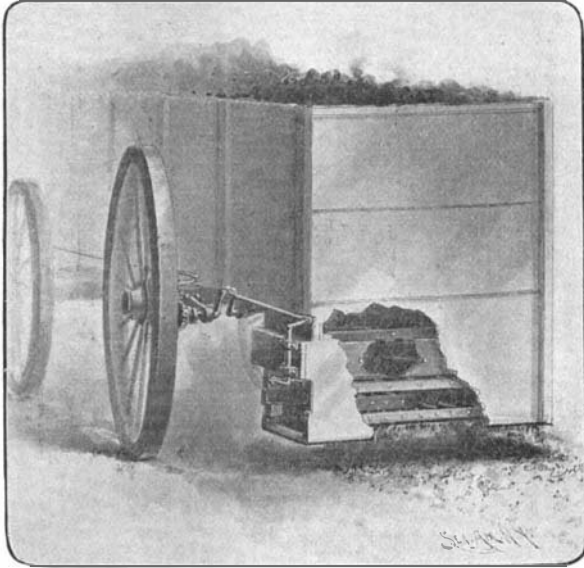


**MANURE SPREADER.**

It is important that manure and other fertilizer of a lumpy nature be crushed before spreading on the ground, and with this in view Mr. O. L. Stadig, of St. Francis, Me., has invented a simple crusher which may be readily attached to any wagon or cart. As

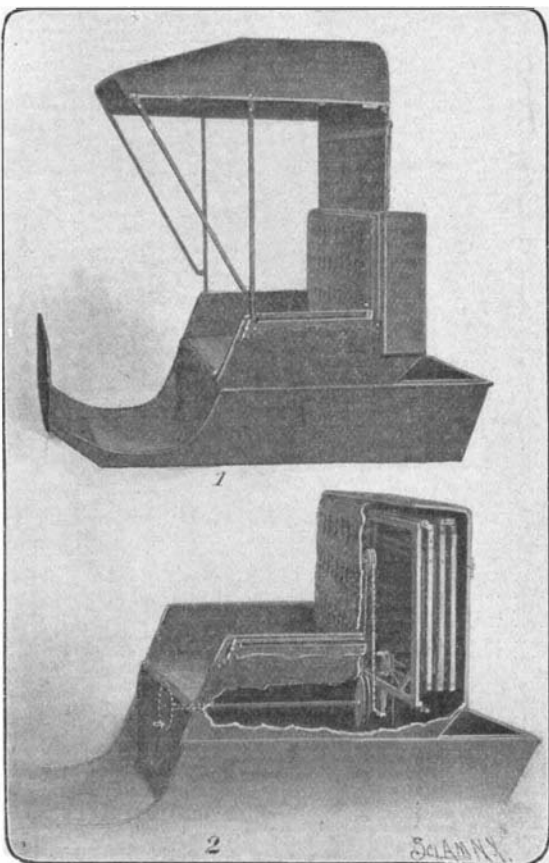


**MANURE SPREADER.**

illustrated the crusher comprises a number of reciprocating frames mounted in grooves at the rear of the wagon body. The frames are composed of longitudinal and transverse bars and pass between similar stationary frames in the wagon. The reciprocating frames are operated from one of the rear wheels of the wagon as follows: Near the axle of the wheel a crank shaft is journaled, on the outer projecting end of which a pinion is mounted. The pinion is not fixed to the shaft but may be moved thereon into or out of engagement with a gear ring bolted to the spokes of the wheel. This action may be governed by a lever at the driver's seat. With the gears in mesh the crank shaft will be rapidly rotated when the vehicle is in motion and the pitman on the crank portion will be reciprocated. This motion is transmitted by means of levers to the movable frames, causing them to reciprocate and grind or crush the manure in the wagon against the stationary frames. The manure then falls through and is distributed evenly on the ground in the proper broken condition.

**FOLDING TOP FOR VEHICLES.**

A convenient way of disposing of a buggy top when it is not in use has been provided by the recent invention of Messrs. William T. and Edward Y. Temple, of Trenton, N. J. The top is moved back to folding position, and then by the manipulation of a crank under the buggy seat is lowered into the hollow seat-back. The operating crank is secured to a shaft, which is provided at its opposite ends with a grooved pulley. A chain secured at one end of this pulley passes over a sprocket wheel at the top of the seat-back and is fastened to the lower end of the rear frame of the buggy top. This frame is also provided with a disk, as illustrated, from which two rods ex-

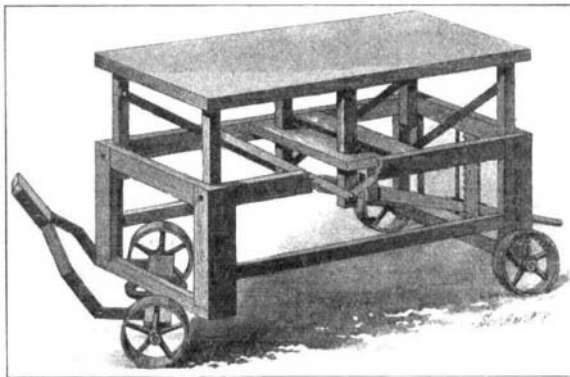


**FOLDING TOP FOR VEHICLES.**

tend to the spring bolts located one at each side of the frame. The spring bolts are adapted to enter notches in the seat-back when the frame has been sufficiently elevated. When it is desired to lower the frame, the disk is rotated by means of a handle in the back of the seat, which causes the connecting rods to withdraw the bolts from their notches. The upright members of the middle bow, it will be observed, are each provided at the lower end with a guide piece adapted to slide in a T-shaped groove in its respective seat-arm. At the rear end of the grooves hinged blocks are provided which, on folding up the buggy top, are swung open to allow removal of the guide pieces from the grooves and permit the upright members to be folded back into the hollow seat-back. The location of joints in the buggy frame has been carefully planned to permit of folding the top as compactly and neatly as possible. With the buggy top stowed away within the hollow seat-back, free access is permitted to the rear portion of the vehicle body, which is often used for carrying packages and other articles.

**ELEVATING TRUCK.**

A large proportion of the damage done to baggage in transportation is due to the fact that the floors of the baggage cars are much higher than the platform of the usual hand truck, and consequently the trainmen are apt to carelessly throw out trunks, boxes and packages regardless of their weight or the nature of their contents; but as the train must keep its schedule, and every minute counts, we cannot blame the baggageman for unloading the luggage in the very shortest time possible. An improved type of hand truck, which is calculated to do away with this objectionable feature, is illustrated herewith. It is the invention of H. F. Broyles, of Western Port, Md. This truck is provided with a platform which can be raised up to any desired height by the simple manipulation of a lever, and as easily lowered. With the platform on the level of the car floor, the trunks or other bag-



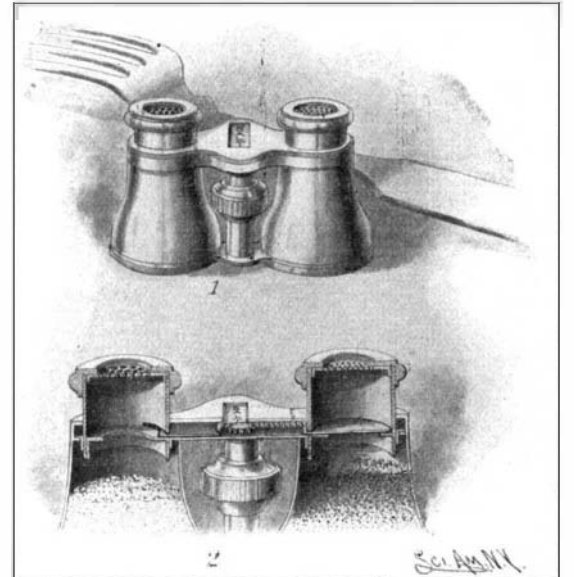
**AN ELEVATING TRUCK.**

gage can be easily slid along on to the truck, and the platform may then be let down for unloading, or may be adjusted to the level of an express wagon if the baggage is to be delivered immediately. The platform is supported on posts which fit in between the corner posts of the truck frame. The bars which are secured at their outer ends to the platform posts are connected at the center by a rod supported in brackets projecting downward from the platform. This rod passes through the inner end of the operating lever. A forked bracket extending downward from the truck frame affords a bearing for the fulcrum pin of the operating lever. The pin passes through a slot in the lever, which allows necessary play. A plate is fastened to the forward end of the lever, and is adapted to engage the teeth of a ratchet plate to hold the platform at any height desired. A guide rod at one side serves to hold the plate on the lever in engagement with the ratchet teeth. This rod being made of spring metal may be easily sprung outwardly to permit raising or lowering of the lever. Aside from its uses in connection with baggage transfer, this truck will obviously be found very useful for many other purposes.

**AN OPERA-GLASS CONDIMENT HOLDER.**

A novel form of salt and pepper holder has recently been invented by Lieut. J. W. Graeme, care of the United States Navy Department, Washington, D. C. The holder has the form of a pair of opera glasses, being about half the size of the actual article. One of the cylinders is filled with salt, and the other with pepper. The parts which correspond with the eyepieces of opera glasses form the perforated tops, through which the salt and pepper may be shaken. To prevent both salt and pepper from being discharged at the same time, the inventor provides a plate which is adapted to close the neck of either one or the other cylinder. A rack is formed on one edge of this plate, and is engaged by a pinion at the upper end of what corresponds to the focusing-wheel shaft. By turning the focusing-wheel this cut-off plate may obviously be moved to close either the salt or pepper box. The words "Salt" and "Pepper" are engraved on the plate

in such positions that when the salt box is uncovered the word "Salt" will be exposed through a slot in the casing between the eyepieces, and when the other box is uncovered the word "Pepper" will appear. Imitation of the opera glass is heightened by making the bottoms of the boxes in the form of lenses, which con-

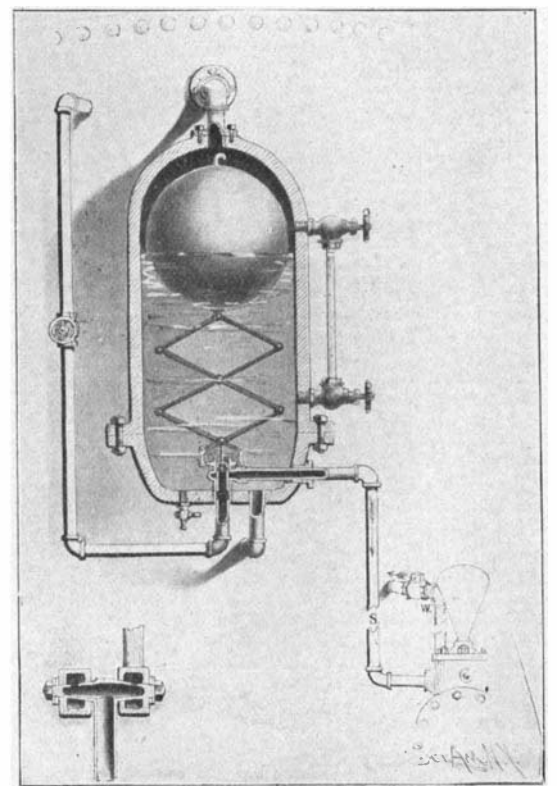


**AN OPERA-GLASS CONDIMENT HOLDER.**

struction also enables one to see at a glance whether the holder is empty or not.

**WATER REGULATOR FOR STEAM BOILERS.**

In the accompanying illustration we show an automatic water regulator for steam boilers, which embodies a number of important new features. The float controlling the valve is so constructed as not to be liable to fill with water by sweating or actual leakage, and means are provided whereby the float will not be liable to collapse by reason of the high pressure at the boiler. The inventor, Mr. Benjamin Walker, Jr., of Austin, Texas, has aimed to make the regulator as neat and light as possible. The cylinder or shell of the regulator is made in two sections connected in a water and steam tight manner. A tubular piece screwed into the bottom of the shell, and provided near its upper end with an annular chamber, serves as a casing for a cup-valve. The annular chamber opens into a pipe connected with the injector or pump, which is supplied with steam when the openings in the cup-valve register with this annular chamber. The valve is connected to the float by means of a lazy-tongs made up of tubular members. These are so constructed as to conduct any water which may have accumulated in the float of the valve. Fig. 2 shows the form of connection used for insuring proper communication at the joints of the lazy-tongs. The curved or gooseneck tube at the top of the float admits air or steam therein, to enable it to withstand the high pressure from the boiler. With the parts in the position illustrated the pump or injector is idle, for its steam supply is cut off by the cup-valve. However, as soon as the water in the boiler has dropped sufficiently, the float will lower the valve, permitting steam to flow out through the annular chamber of the valve casing and into the pump. The latter will then pump water into the boiler until the float has again been raised to its normal position.



**WATER REGULATOR FOR STEAM BOILERS.**