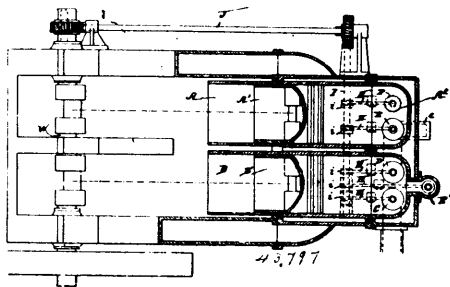
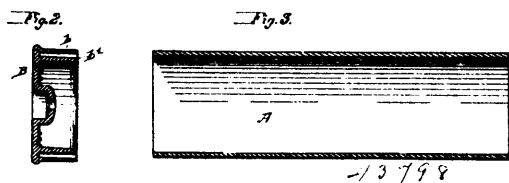


pansion cylinder, each having a piston connected with the engine shaft and operating in unison in the same directions, a combustion



chamber in the end of the power cylinder, a communication passage with controlling valve between the adjacent end of the expansion cylinder and the combustion chamber, an air passage with controlling valve into the combustion chamber of the power cylinder, a gas inlet passage with controlling valve into the air passage, an air admission valve to the expansion cylinder and an exhaust valve therefrom, and means for operating said valves, substantially as herein described.

**No. 43,798. Cartridge Shell. (Elui de cartouches.)**



Charles E. Overbaugh, Jersey City, New Jersey, U.S.A., 1st August, 1893; 6 years.

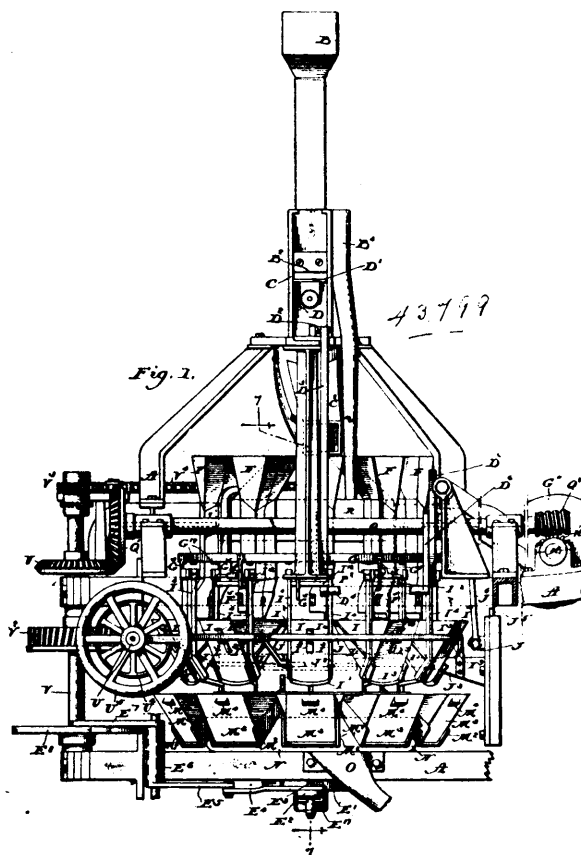
*Claim.*—1st. In a cartridge shell, the combination of a paper body, and a metal breech portion having the integral jaws movable laterally one towards the other for compressing a portion of and permanently clamping the paper body, the said paper body having an annular head formed at its end to engage an annular shoulder of a jaw, substantially as specified. 2nd. In a cartridge shell, the combination, with a paper body having an inwardly turned lip or flange, of a metal breech portion having a jaw surrounding the body for a part of its length, and provided with a central bevelled opening, and a second metal breech portion having an outwardly swaged hub, the lip or flange of the paper body being held between the two metal breech portions, substantially as set forth. 3rd. In a cartridge shell, the combination, with a paper body having an inwardly turned lip or flange, of a metal breech portion connected to the body and having a central bevelled opening, and a second metal breech portion having the undercut S, the undercut S', and the hub portion, all arranged substantially as set forth.

**No. 43,799. Automatic Weighing Machine. (Bascule automatique.)**

Henry Eyster Smyser, Germantown, Philadelphia, Pennsylvania, U.S.A., 1st August, 1893; 6 years.

*Claim.*—1st. In an automatic weighing machine, the combination with a series of stationary scales, of a series of receptacles adapted to receive the weighed charges from the scales, and mechanically driven mechanism for automatically dumping the receptacles in regular succession. 2nd. In an automatic weighing machine, the combination with a series of stationary scales, of a series of carriers adapted to receive the weighed charges from the scales, and movable to convey the charges away, and mechanism for automatically dumping the carriers successively. 3rd. In an automatic weighing machine, the combination with a series of stationary scales of a corresponding series of movable carriers, mechanism for dumping the scale pans simultaneously into the carriers, and mechanism for dumping the carriers successively at a given point. 4th. In an automatic weighing machine, the combination with a circular series of stationary scales, of a circular series of carriers adapted to receive the weighed charges from the scales, a rotary shaft on which said carriers are mounted, and mechanism for dumping the carriers successively. 5th. In an automatic weighing machine, the combination with a circular series of stationary scales, of a circular series of carriers adapted to receive the weighed charges from the scales, intermittent driving mechanism for moving the carriers step by step from one scale to the next, mechanism for dumping the scale pans simultaneously, whereby all the carriers are filled, and a mechanism for dumping the carriers as they reach a given point, whereby they are successively emptied. 6th. In an automatic weighing machine, the combination of a series of station-

ary scales, means for supplying material thereto, means operated by the deflection of the scale beams for cutting off the supply there-



from, means for simultaneously dumping the scale pans, a series of receptacles adapted to receive the weighed charge dumped from the pans, and a dumping mechanism for dumping the receptacles successively. 7th. In an automatic weighing machine, the combination of a series of stationary scales, a measuring mechanism for delivering charges of the material to be weighed at intervals, and a movable chute over said scales arranged to receive the charges from said measuring mechanism, and moving to deliver the successive charges to the respective scales successively. 8th. In an automatic weighing machine, the combination of a circular series of stationary scales, a revolving chute mounted above them, and movable to deliver into them in succession, a mechanism for feeding charges of material to be weighed into said chute, a series of receptacles arranged to receive the weighed charges from the respective scales, and means for dumping said receptacles in succession. 9th. In an automatic weighing machine, the combination of a series of stationary scales, a corresponding series of stationary chutes delivering into the respective scale pans, mechanism for dumping charges of material to be weighed into said chutes, mechanism for dumping the scales, a series of receptacles adapted to receive the weighed charges therefrom, and mechanism for automatically dumping the receptacles successively. 10th. In an automatic weighing machine, the combination of a series of stationary scales, a series of stationary chutes leading to the respective scale pans, means for supplying material to the pans through said chutes, means for conducting an additional supply to the pans, operated by the deflection of the scale beams for cutting off the supply from each pan upon its descent under full weight, a series of carriers adapted to receive the weighed charges from the scales, and means for dumping said carriers successively. 11th. In an automatic weighing machine, the combination of a series of stationary scales, a corresponding series of stationary chutes delivering into the respective scale pans, a measuring mechanism operating intermittently to deliver measured charges of material and a movable chute receiving said charges therefrom and coinciding in its successive movements with the successive stationary chutes, whereby it delivers the measured charges to the stationary chutes in succession. 12th. In an automatic weighing machine, the combination of a series of stationary scales, a corresponding series of stationary scales, a corresponding series of stationary chutes delivering into the respective scale pans, and having mechanism for closing them, means for delivering charges of material into the chutes successively, and mechanism for automatically dumping the contents of the several chutes simultaneously into the scale pans. 13th. In an