E. F. KLEPPINGER.

CEMENT PACKER.

APPLICATION FILED APR. 17, 1908.

904,334.

Patented Nov. 17, 1908.

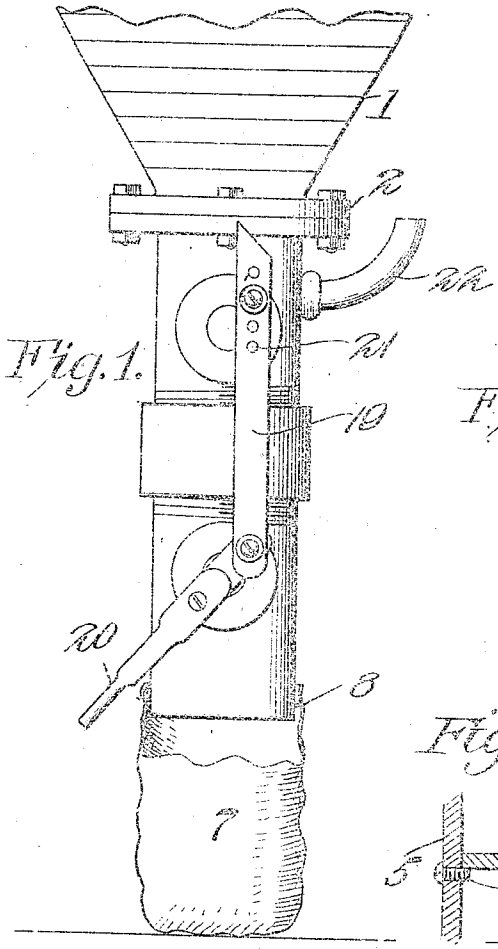

Fig. 1.

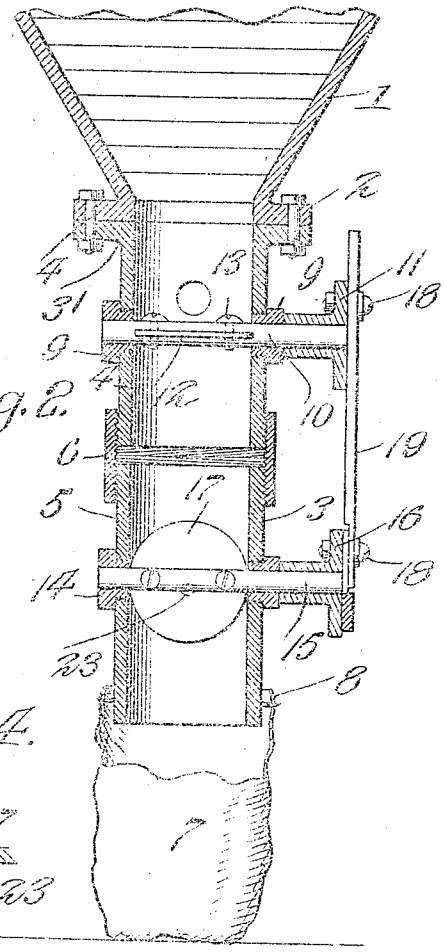

Fig. 2.

Fig. 4.

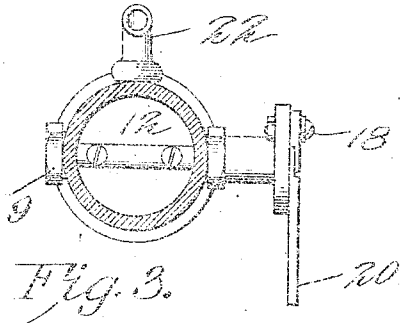

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD P. KLEPPINGER, OF NORTHAMPTON, PENNSYLVANIA.

CEMENT-PACKER.

No. 904,834. Specification of Letters Patent. Patented Nov. 17, 1908.

Application filed April 17, 1908. Serial No. 427,664.

To all whom it may concern:

Be it known that I, EDWARD P. KLEPPINGER, a citizen of the United States, residing at Northampton, in the county of Northampton and State of Pennsylvania, have invented new and useful Improvements in Cement-Packers, of which the following is a specification.

This invention relates to an apparatus for use in filling or packing cement and similar materials into bags, boxes or like receptacles.

The object of the invention is to provide a device of this character which is simple of construction, durable and efficient in use and comparatively inexpensive of production, and whereby bags or other containers may be filled with a prescribed quantity or weight of the material in a rapid and convenient manner and with but little manual labor.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a side elevation of a packer or filler embodying my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a horizontal section. Fig. 4 is a detail section showing the valve stop.

Referring to the drawing, the numeral 1 designates a hopper or supply tube provided at its lower end with an annular flange 2, and 3 designates a delivery chute or conduit for conducting the material to the bag or other receptacle, said delivery chute or conduit being provided at its upper end with a flange 3' secured to the flange 2 of the hopper by bolts or equivalent fastenings 4, whereby the delivery chute or conduit is suspended in position from and below the hopper.

The delivery chute is preferably of cylindrical form and comprises upper and lower tubes or sections 4 and 5 threaded at their adjacent ends for engagement with a coupling band or collar 6 by which they are detachably connected, this construction adapting the chute to be readily and conveniently set up or taken down when occasion requires, as well as permitting the parts thereof to be stored in close compass for transportation. The lower end of the delivery chute may be located a desired distance above the floor or surface upon which the bag 7 or other container is to be supported, and in practice the upper end of the container, when in the form of a paper or other kind of bag, is fitted about the lower end of the delivery chute and is detachably retained in position by retaining pins 8 or the like at the lower end of the chute. After the bag is filled, the mouth thereof may be conveniently disconnected from said pins and tied, and the bag removed in a convenient manner. The device may, of course, be employed for filling other kinds of receptacles with a measured quantity of cement or any other kind of loose material of a similar nature.

Threaded into opposite sides of the section 4 are bearing plugs or bushings 9 in which is journaled a transverse shaft 10 projecting at one end beyond the adjacent sleeve and carrying a disk 11 suitably fixed thereto. The inclosed portion of the shaft is slotted to receive a disk valve 12 which extends therethrough and is secured thereto by screws or other suitable fastenings 13. This valve is of circular form and adapted when horizontally disposed to close the tube 4 against the passage of the material beyond the point at which it is arranged.

The lower section 5 is provided with bearing plugs or bushings 14 in which is journaled a shaft 15 similar in arrangement to the shaft 10, and upon the outer end of which is fixed a disk 16. Upon the inclosed portion of the shaft is mounted a valve 17 corresponding in form and construction with the valve 12 and adapted to snugly close the section 5 against the passage of material below the point at which said valve is arranged. The disks 11 and 16 carry eccentrically arranged screws 18 operating as crank pins, and which are connected by a rod or link 19, so that when motion is transmitted to one shaft the other will operate synchronously therewith to operate the two valves in timed accord. A lever 20 is fastened to the disk 16 and connected with the pin 18 for manually operating the shaft 15 and transferring motion through the rod or link 19 to the shaft 10.

The valve 12 operates in the nature of a cut-off valve and the valve 17 as a discharge valve, and said valves preferably consist of disks having comparatively sharp edges to close tightly against the surfaces of the conduit and prevent leakage of material past the same. The disk valves are also pref-

erably sharp edged to cut through or compress strings or other foreign materials which may pass into the conduit with the cement or other material, in order that such foreign substances may not interfere with the movement of the valves to their fully closed positions.

In practice, the valves are so arranged upon their respective shafts that when one valve is fully closed the other will be fully opened, in order to prevent the leakage which would occur if both valves were opened to any great extent at the same time.

In operation, assuming a bag or other receptacle to be arranged for the delivery of a specified quantity of the material thereto, and the apparatus to be set as shown with the valve 12 closed and the valve 17 opened, it will be understood that the material from the hopper 1 will fill the upper portion of the conduit to the line of the valve 12, and that upon operating the lever 20 in one direction the valve 12 will be opened to permit the material to feed downward, while the valve 17 will be closed to prevent the discharge thereof. The material will fill the portion of the conduit above the valve 17, so that when the lever 20 is operated in the reverse direction and the valves 12 and 17 are respectively closed and opened, the further feed of the material from the hopper will be prevented, while the material previously fed into the conduit below the valve 12 will drop into the receptacle 7. Inasmuch as the valves open and close in timed relationship, it will be understood that a portion of the conduit will form a measuring receptacle controlled by the valves, and that accordingly through the operation of the latter a definite quantity of material will be discharged on each operation thereof.

In order to regulate the action of the valves relative to each other, the rod or link 19 may be provided with a series of openings 21 for adjustable connection with the pin 18 of the crank disk 11, thus allowing the angular relation of the valve 12 to the valve 17 to be varied as circumstances may require. The upper portion of the conduit is provided with a vent tube or pipe 22 for the exhaust of air therefrom. Hence the air displaced by the feeding material may freely discharge to allow the material to pack solidly in the measuring space. A stop pin or screw 23 may be employed for contact with the valve 17 so as to limit the closing movement of the valves, thus preventing the valves from being swung beyond their fully closed position.

While the device is primarily adapted for filling or packing cement into bags or barrels, it will, of course, be understood that it may be employed for filling containers with flour or other ground material.

Having thus fully described the invention, what is claimed as new is:—

1. An apparatus of the character described, comprising a feed conduit, a cut-off valve in the upper portion of the conduit, a discharge valve in the lower portion of the conduit, said valves being at an angle to each other, transverse shafts on which the valves are respectively mounted, disks upon said shafts provided with crank pins, a rod pivotally connected with the crank pin of one disk and having an adjustable pivotal connection with the crank pin of the other disk, whereby the angular relation of said valves may be varied, and an operating device connected with one of the disks whereby the disks may be simultaneously operated to transfer motion to the valves.

2. An apparatus of the character described, comprising a feed conduit formed of sections, means detachably connecting the sections, bearing bushings upon the respective sections, shafts journaled in the said bushings, disk valves carried by said shafts, said valves being set at an angle to each other, disks upon the outer ends of the shafts provided with crank pins, a rod pivotally connected with the crank pin of one crank disk and having an adjustable pivotal connection with the crank pin of the other crank disk, and a lever connected with one of the disks for operating the same to transmit simultaneous motion to the valves.

3. An apparatus of the character described, comprising a feed conduit formed of sections, a coupling detachably connecting the sections, bearing bushings upon the respective sections, shafts mounted in said bearing bushings and extending at one end beyond the conduit, disk valves mounted on said shafts and arranged at an angle to each other, disks upon the projecting ends of the shafts and provided with crank pins, a rod pivotally connected with the pin of one crank disk and having an adjustable pivotal connection with the crank pin of the other crank disk, a stop device upon the lower section of the conduit for engagement by the valve therein, and a lever connected with the lower crank disk for manually operating the same to transfer simultaneously motion to the valves.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD P. KLEPPINGER.

Witnesses:

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