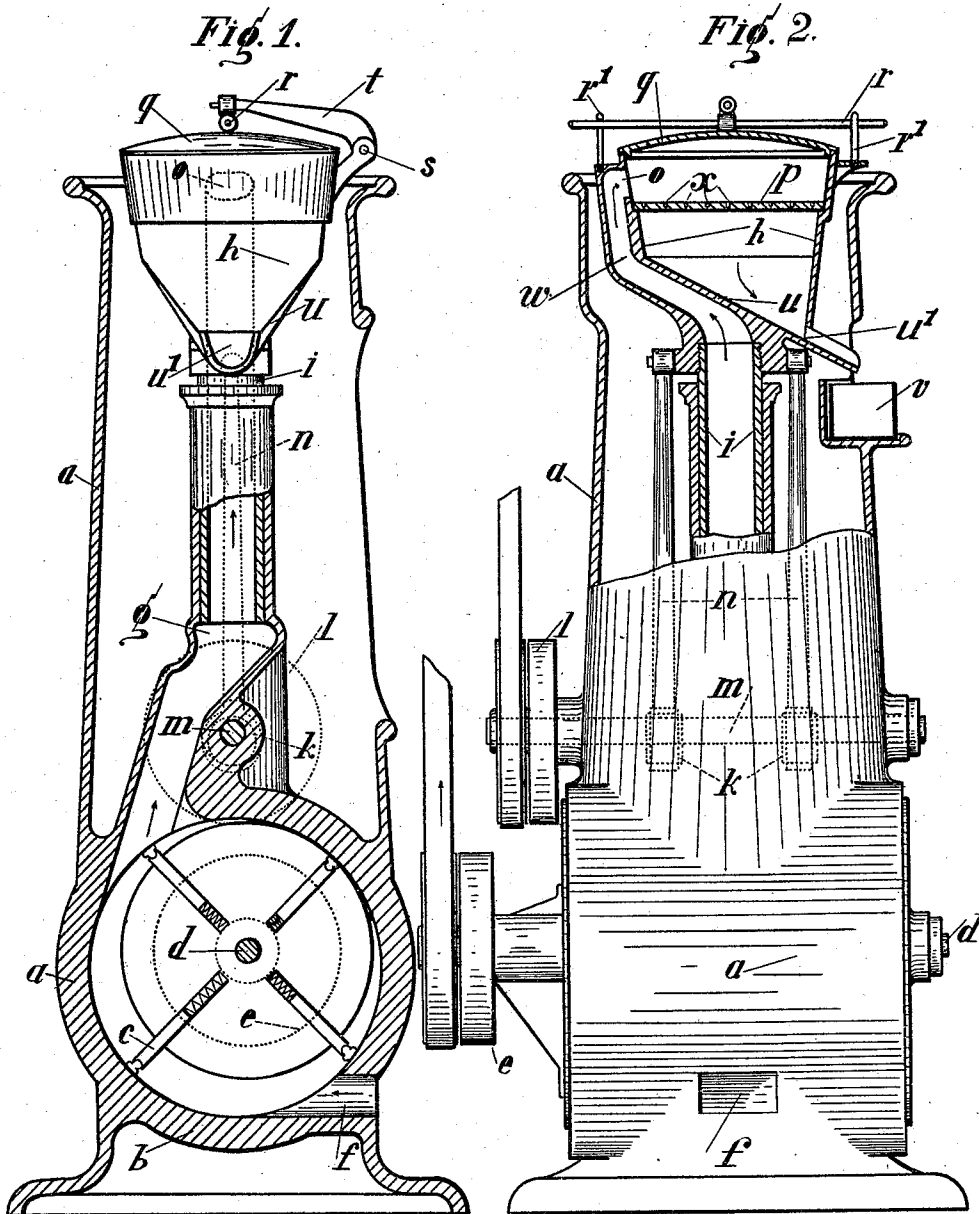


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METHOD FOR INSERTING WORK PARTS.
APPLICATION FILED AUG. 9, 1912.

1,066,327.

Patented July 1, 1913.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES SANDOZ-MORITZ, OF TAVANNES, SWITZERLAND.

METHOD FOR INSERTING WORK PARTS.

1,066,327.

Specification of Letters Patent.

Patented July 1, 1913.

Original application filed October 30, 1911, Serial No. 657,596. Divided and this application filed August 9, 1912. Serial No. 714,244.

To all whom it may concern:

Be it known that I, CHARLES SANDOZ-MORITZ, a citizen of the Republic of Switzerland, and residing at Tavannes, Switzerland, have invented certain new and useful Improvements in Methods for Inserting Work Parts, of which the following is a specification.

This application is divisional of a co-pending application filed by me October 30, 1911, Serial No. 657,596.

The present invention relates to an improved method for assembling work parts or for temporarily inserting them in holders, by means of pressure air.

In various arts, and particularly in the manufacture of watches and clocks, it is the custom to insert small work pieces, such as studs, pins, screws, rivets, and the like, into suitably perforated plates or the like by means of a strong current of suction air, in which plates then the inserted parts either remain or are only temporarily retained to facilitate handling in a polisher or other apparatus. It has been found, however, that the use of suction air in such apparatus has various disadvantages, the most serious one being the tendency of the exhauster to become clogged with the aspirated dirt, grit, filings, shavings and the like waste detaching from the parts under treatment.

The object of the present invention is to do away with the objections against the use of suction air by using pressure air for forcing in the parts, instead of sucking them in as heretofore.

Another object of the invention is to aid the parts to be inserted in working home in their seats by imparting to the bowl or hopper a reciprocatory up and down movement; and to still further enhance this combined pressure and shaking action I cause the air pressure to be momentarily increased on each descent of the bowl, so that the parts are battered home so to say.

In order to make this invention more readily understood, I will now describe it with reference to the accompanying drawing, which shows one preferred construction of apparatus for carrying out my method, and in which—

Figure 1 represents a vertical section through the apparatus, with the work receiving bowl in elevation; Fig. 2 shows a side elevation, partly in section.

In the lower part of the main machine housing *a* is provided the blower-housing *b*, in which rotates the fan *c* whose shaft *d* is driven from the pulley *e*. The rotation of the fan takes place in the direction of travel of the clock hands, and the air blast passes through the apparatus in the arrow-indicated direction, through the air canal *f*, *g* into the head or bowl *h*, into which the parts to be treated are placed, and finally out of the bowl. A tube *i* airtightly slides within the vertical part of the canal *g* and communicates above with a curved conduit *w*, which in turn opens into the bowl at *o*. To the member *i* are fulcrumed the upper ends of the connecting rods *n*, *n*, secured to the eccentrics *k*, *k*, which latter are driven from the shaft *m* with driving pulley *l*. Upon the shaft *m* revolving, the bowl *h* will be reciprocated in an up and down direction. Below the orifice *o* is provided the perforated plate or false bottom *p*, upon which the parts to be treated are placed. The plate *p* is provided with a number of perforations or air passages *x* to receive therein the work parts, such as screws, pins, studs, rivets, hands, and the like. After the perforations are filled, which requires but a very short time, the plate is removed to a buffer or polisher or other apparatus for further treatment, and in the meantime a fresh plate is introduced, so that the work suffers little interruption.

A cover *q* airtightly closes the bowl, and I preferably employ a locking device which operates by swinging the locking bar *r* about the center of the cover, away from or toward the retaining brackets *r'*. The cover can also be swung open or closed by means of the bracket lever *t* fulcrumed at *s*. The bottom *u* slopes toward the front of the bowl, as shown in Fig. 2, and just above the lowermost point there is provided at *u'* a discharge opening, from which issues the spent pressure air and from which are also delivered the excess parts after each operation, falling in a tray *v*.

The operation of the described mechanism is the following:—The perforated plate or false bottom *p* is placed into the bowl *h*, the parts to be treated are placed on top of the plate and the cover *q* is closed down. Upon the fan being started, air is sucked-in through port *f* and forced through the canal *g*, *i*, *w* and the orifice *o* into the bowl, passes

through the perforated plate, through the lower part of the bowl, and finally out at *w*. To the bowl in the meantime is imparted a vibratory up and down movement, with the result that the loose parts in the bowl are thoroughly shaken and alternately thrown upwardly and then again pressed home into the perforations in the false bottom. Upon each descent of the bowl there will always ensue a momentary extra compression of the air current, acting like a hammer blow on the parts, and greatly aiding in forcing the parts into the perforations. At the end of each operation, the false bottom, before being taken out completely, is tilted a little, when the excess pieces will fall onto, and slide down, the slanting bottom *u* of the

bowl, and finally be discharged into the tray *v*.

What I claim is:—

The herein described method for inserting screws, pins, studs, rivets, and the like parts into suitably perforated plates or the like, which consists in forcing air into and through the bowl containing the parts to be treated; and imparting simultaneously to said bowl a reciprocatory up and down movement.

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

CHARLES SANDOZ-MORITZ.

Witnesses:

E. MUSSER,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."