

C. SANDOZ-MORITZ.  
METHOD FOR INSERTING WORK PIECES.  
APPLICATION FILED AUG. 9, 1912.

1,066,154.

Patented July 1, 1913.

Fig. 1.

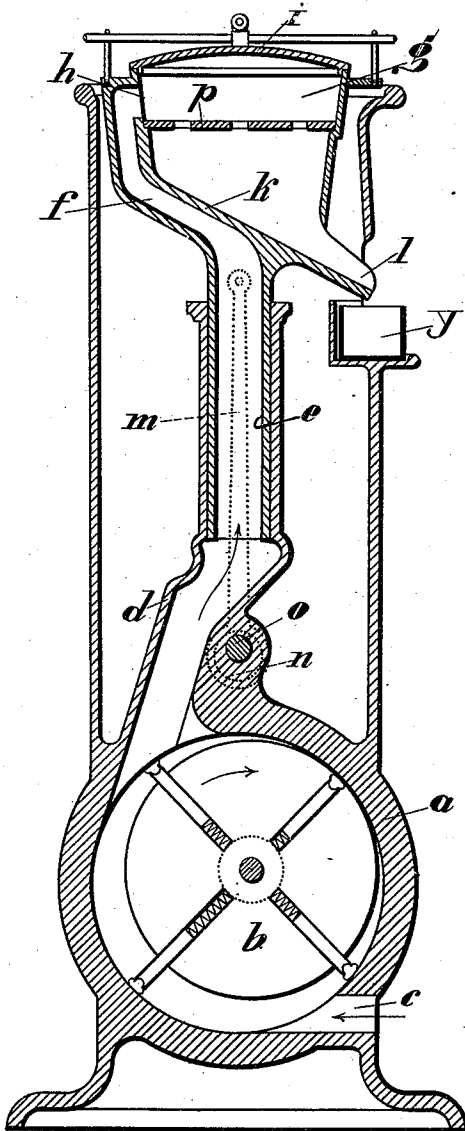


Fig. 2.

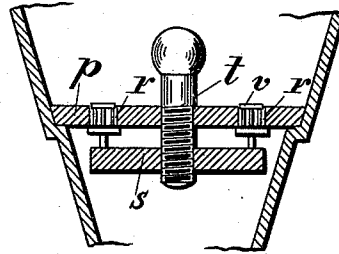


Fig. 3.

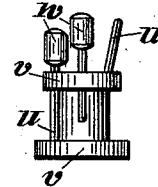
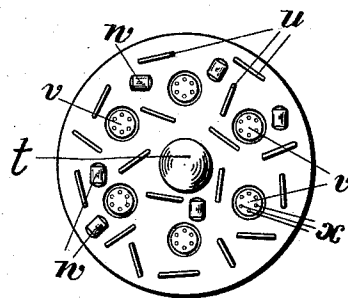


Fig. 4.



Witnesses

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Inventor

Charles Sandoz Moritz  
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his attorney.

# UNITED STATES PATENT OFFICE.

CHARLES SANDOZ-MORITZ, OF TAVANNES, SWITZERLAND.

## METHOD FOR INSERTING WORK-PIECES.

1,066,154.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed August 9, 1912. Serial No. 714,245.

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-Pieces, of which the following is a specification.

The present invention has reference to improvements in methods for inserting work pieces, such as screws, pins, studs, rivets, hands, and the like, into perforated plates, or for assembling work pieces, for instance the bars and heads in lantern pinions, by means of air pressure and simultaneous shaking action.

In a prior application (Serial No. 657,596, filed October 30, 1911) and another application divisional thereof (Serial No. 714,244, filed August 9, 1912) I have described an apparatus and a method for inserting such work pieces by means of air pressure, and the present invention more particularly relates to an improvement of my prior inventions there described.

As I found that in practical operation the parts to be inserted or assembled often are not fully forced home in their seats, so that manual after-treatment is required, I have added to the shaking and pressure action to which the parts to be inserted are subjected, a hammering action, with the result that now the parts are more quickly and completely assembled in one operation without after-treatment.

In order to make this invention more readily understood, I will now describe it with reference to the accompanying drawing, in which—

Figure 1 represents a vertical section through one form of apparatus in which my new method may be carried out; Fig. 2 shows a section through part of the work receiving bowl with the exchangeable false bottom, and two lantern pinions in elevation; Fig. 3 shows a lantern pinion partly assembled, with two battering slugs as they appear in action; Fig. 4 represents a top view of the false bottom with inserted lantern pinion bodies, and bars and slugs scattered promiscuously over it.

In the lower part of the machine housing *a* is provided a blower *b*, which sucks in the air through port *c*, and forces it out through the conduit *d*, in whose upper straight part slides airtightly the tube *e*, which runs out

into the curved passage *f*. This latter opens into the hopper or bowl *g* at *h*. The bowl is provided with an airtightly closable cover *i*, with a sloping bottom *k*, and with a discharge *l* at the lowermost part. To the upper end of the tube *e* are fulcrumed the upper ends of two connecting rods *m*, secured at their other ends to eccentrics *n*, which are driven from the rotary shaft *o*. Upon this shaft revolving, the bowl *g* will be reciprocated in an up and down direction.

Within the bowl, below the orifice *h* is removably secured the perforated plate or false bottom *p*, whose construction may vary greatly according to requirements. In the example shown, the plate is intended for assembling the bars and heads to form lantern wheels such as are extensively used in clock making, and it consists of a plate with a plurality of bores *r*, arranged in a circle. A smaller disk *s* is adjustably suspended below the larger one by means of the screw bolt *t*, which serves also as handle.

The bodies of the lantern pinions are inserted by hand into the perforations *r*, their spindles resting on the lower disk, as shown in Fig. 2. The plate *p* is now placed into the bowl *g*, a lot of bars *u* are scattered over the plate, the cover is closed down, and the machine is started, when a powerful current of pressure air is sent through the perforations *r* in the false bottom which forces the bars *u*, which are kept in constant agitation by the reciprocatory movement of the bowl, into their seats in the heads *v* of the lantern pinions. As the described operation often is not powerful enough to drive the bars entirely home, I employ additional hammering means for this purpose in the shape of small pieces of metal, so-called slugs *w*, which are scattered freely over the perforated plate, as shown in Fig. 4, and which impelled by the combined shaking and pressure action quickly batter the bars home in their seats. Each sudden descent of the bowl, moreover, causes the inclosed column of pressure air to become momentarily still further compressed, and these quickly recurring extra-compressions greatly aid the battering action of the slugs. At the end of the operation, the cover *i* is lifted, the perforated plate *p* is tilted, when the excess bars and the slugs drop down the inclined bottom of the bowl into the tray *y*, and the plate is removed by the handle *t* and replaced by a fresh plate.

What I claim is:—

1. The hereindescribed method for inserting pins or the like in a perforated member, consisting in imparting an up and down reciprocatory movement to the perforate member, confined with a superposed aggregation of the loose pins, and in simultaneously subjecting the assemblage to an air blast within a closed container, the air blast passing through the said perforate member from above downwardly.
2. The hereindescribed method of inserting pins or the like in a perforated member, consisting in imparting an up and down

reciprocatory movement to the perforate member, confined with a superposed aggregation of the loose pins interspersed with relatively heavy elements, and in simultaneously subjecting the assemblage to a current of pressure air within a closed container, the air blast passing through the said perforate member from above downwardly.

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

CHARLES SANDOZ-MORITZ.

Witnesses:

E. C. HÜSSES,  
C. WELLS.

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