J. Repetti.

Lead-Cutting Machine.

No. 91,267. Patented Jun. 15, 1869.

Fig. 2.

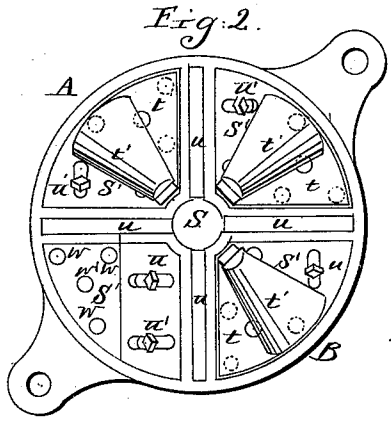


Fig. 3.

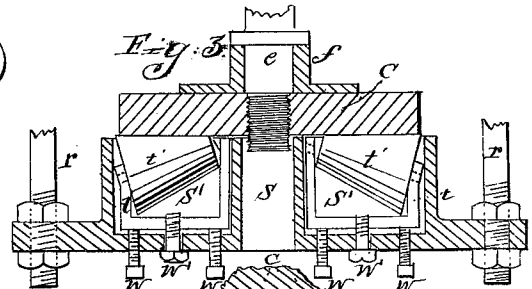


Fig. 4.

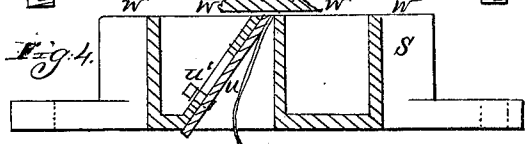
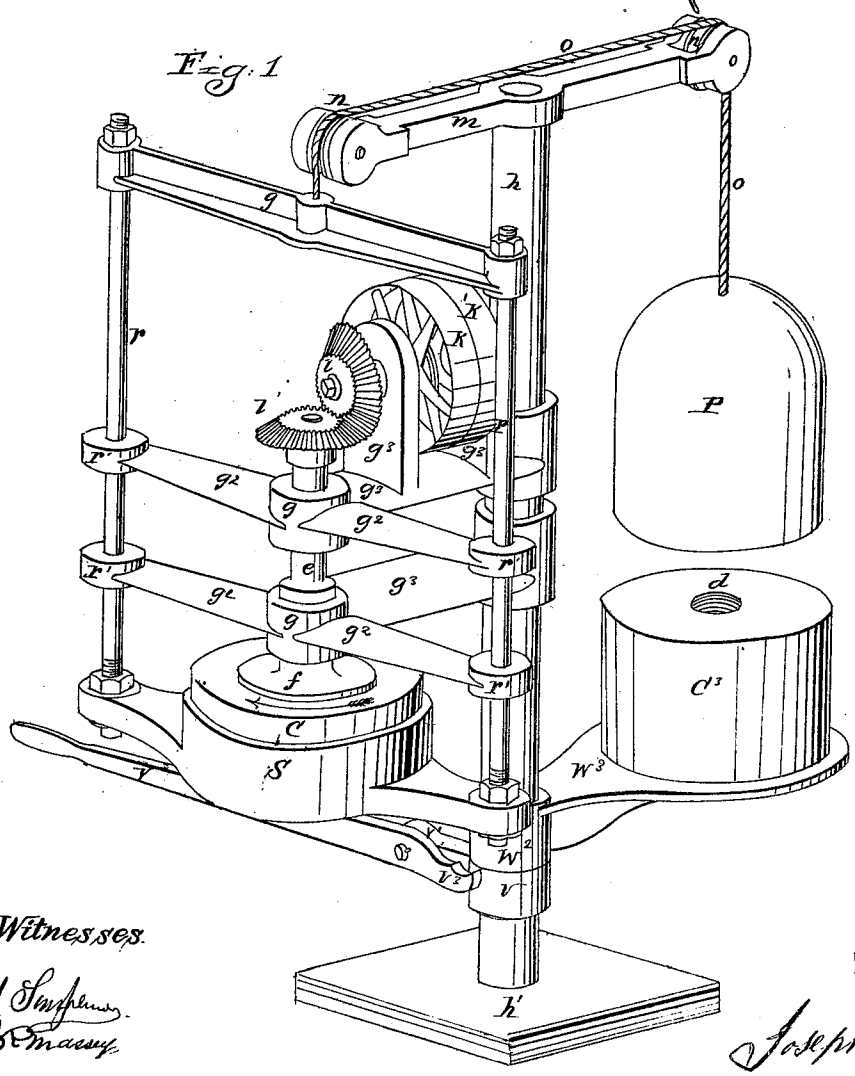


Fig. 1



Witnesses.

A. Simpleus.

H. C. Massey.

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JOSEPH REPETTI, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 91,267, *dated June* 15, 1869.

IMPROVED MACHINE FOR MAKING LEAD SHAVINGS.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, JOSEPH REPETTI, of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Machine for Slicing Lead for manufacturing white lead, and for other useful purposes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view;

Figure 2, a plan of the knife-box;

Figure 3, a section of the same through A B; and

Figure 4, a section, showing one of the knives.

In the manufacture of white lead, it is desirable that as much surface of the lead as possible should be exposed to the acetic acid, and, heretofore, this object has been accomplished by finely dividing the lead, whilst in a fluid state, either by centrifugal force, or otherwise; but the process was not only imperfect, but also very wasteful, on account of the large amount of lead lost by oxidation during the time of manipulation.

In this invention, the metal is melted, and cast into cylindrical blocks or ingots, *c*, fig. 1, the central hole running concentric with the axis through the whole body of the lead.

The upper portion *d* of this hole is provided with a screw-thread, fitting that on the lower end of the spindle *e*, fig. 3, for the purpose of screwing the ingot on *e*, as in fig. 1, until it bears squarely against the surface of the face-plate *f*, which is fastened to the spindle *e*, directly above the screw.

The spindle *e* revolves in bearings, *g g*, on the extremities of the arms g^1 g^1, which latter are fastened to the column *h*, by means of their hubs or bosses.

The upper one of the arms g^1 is provided with standards, g^3 g^3, which support the driving-shaft *i*, with the driving-pulleys *k* and k^1, and bevel-wheel *l*, which latter is fastened to *i*, as is also one of the pulleys, the other pulley, k^1, revolving loosely on the shaft.

The wheel *l* drives a similar one, l^1, fastened to the upper extremity of the spindle *e*.

The top of the column *h* carries the head *m*, the jaws of which support sheave-pulleys, *n n*, over which a rope, cord, or chain, *o*, runs.

To one end of this rope the weight *p* is fastened, and, to the other, the cross-head *q*, which latter is connected with the knife-box *s*, by parallel rods, *r r*, sliding freely through bosses, r^1 r^1, on the cross-arms g^2 g^2, which are cast in one piece with g^1 and *g*.

The knife-box *s* has one or more compartments, s^1 s^1, &c., fig. 2, for the purpose of receiving stands, *t t*, &c., figs. 2 and 3, which support the conical friction-rollers t^1 t^1 t^1, of which three only are shown in fig. 2.

Between the compartments s^1 s^1 are recesses, which admit the knives *u u u u*, figs. 2 and 4, the latter being fastened to the inclined back of the recesses, by bolts or screws, w^1 w^1.

The holes through which these screws pass are slotted or elongated toward the edges of the knives, so that the latter may be adjusted in that direction, for the purpose of regulating the thickness of the shaving cut.

The stands *t t* admit not only of a vertical adjustment, but the cones can also be brought to a perfect bearing against the lower surface of the ingot *c*, by means of the adjusting-screws *w w*, &c., which screw into the bottom of the knife-box, and the tightening-screws w^1, which screw into the bottom of *t t t*.

As the axes of the cones t^1 t^1 terminate in the centre of the lower surface of the lead ingot *c*, it follows that the increasing diameters of the cones, and the increasing angular velocities of their periphery toward their bases, are in exact proportion to those of the ingot *c*, fig. 3, and hence, no rubbing friction takes place between *c* and t^1.

Immediately above the bed-plate h^1, the column *h* carries a collar, *v*, having an ear or lug, v^1, into which the fulcrum-stud of the lever v^2 is fixed.

The collar also supports the hub or boss w^2 of the table w^3, by means of which the latter may be swung around the column *h*, at will, and when it is brought directly opposite to where it is shown in fig. 1, that is, when the centre of the table coincides with the centre of the spindle *e*, the rib underneath the table comes directly above the jaw v^3 of the lever v^2, and, by depressing the arm v^2, the whole table is raised, the hub w^2 sliding freely up on the column *h*.

By reference to fig. 2, it will be seen that the knives *n n* do not extend to the centre of the knife-box *s*, so that they may cut around the screw on the spindle *e*, and up to the face-plate *f*.

The operation of the machine is as follows:

The power applied to the fast pulley *k* is communicated to the spindle *e* by means of the shaft *i* and bevel-wheels *l* and l^1, causing *e* to revolve, and the ingot *c*, fig. 1, being screwed tightly to the lower end of *e*, must revolve with it. The edges of the knives *u u* in the knife-box *s*, being constantly pressed against the lower side of the ingot by the weight *p*, it follows that each knife will cut a shaving from said ingot proportionate in thickness to the projection of the knife-edges above the upper surface of the cone-rollers.

When the ingot has been partly consumed, as *c*, figs. 1 and 3, another, c^1, fig. 1, is in readiness on the table w^3, and as soon as *c* has all been sliced, the knife-box *s* is forced down to its lowest point, the table w^3, with the lead, is swung over the knife-box, and in line with the spindle *e*, raised by means of the lever v^2, and the machine started, when the screw of the spin-

dle *e* will instantly enter into the nut *d* of the ingot, until the latter bears against and revolves with the face-plate *f*.

The weight *p* is now again allowed to pull the knives against the lead, and thus the operation is continued.

I claim, as my invention—

1. The combination of the knife-box *s*, rods *r r*, cross-head *q*, cord or chain *o*, and weight *p*, with the head *m*, sheave-pulleys *n n*, and column *h*, substantially as and for the purpose specified.

2. The combination of the compartments *s' s'*, recesses and knives *u u u u*, with the knife box *s*, substantially as and for the purpose specified.

3. The combination of the stands *t t t t*, cones *t' t t'*, adjusting-screws *w*, and fastening-screws *w'*, with the knife-box *s*, substantially as and for the purpose specified.

4. The cylindrical lead ingot *c'*, fig. 1, with the axial hole and screw-thread *d*, substantially as and for the purpose specified.

5. The use of shaved metallic lead, for the manufacture of white lead, and other useful purposes, when the same has been produced by the machine, and in the manner substantially as described in this specification.

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Witnesses:
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J. R. MASSEY.