

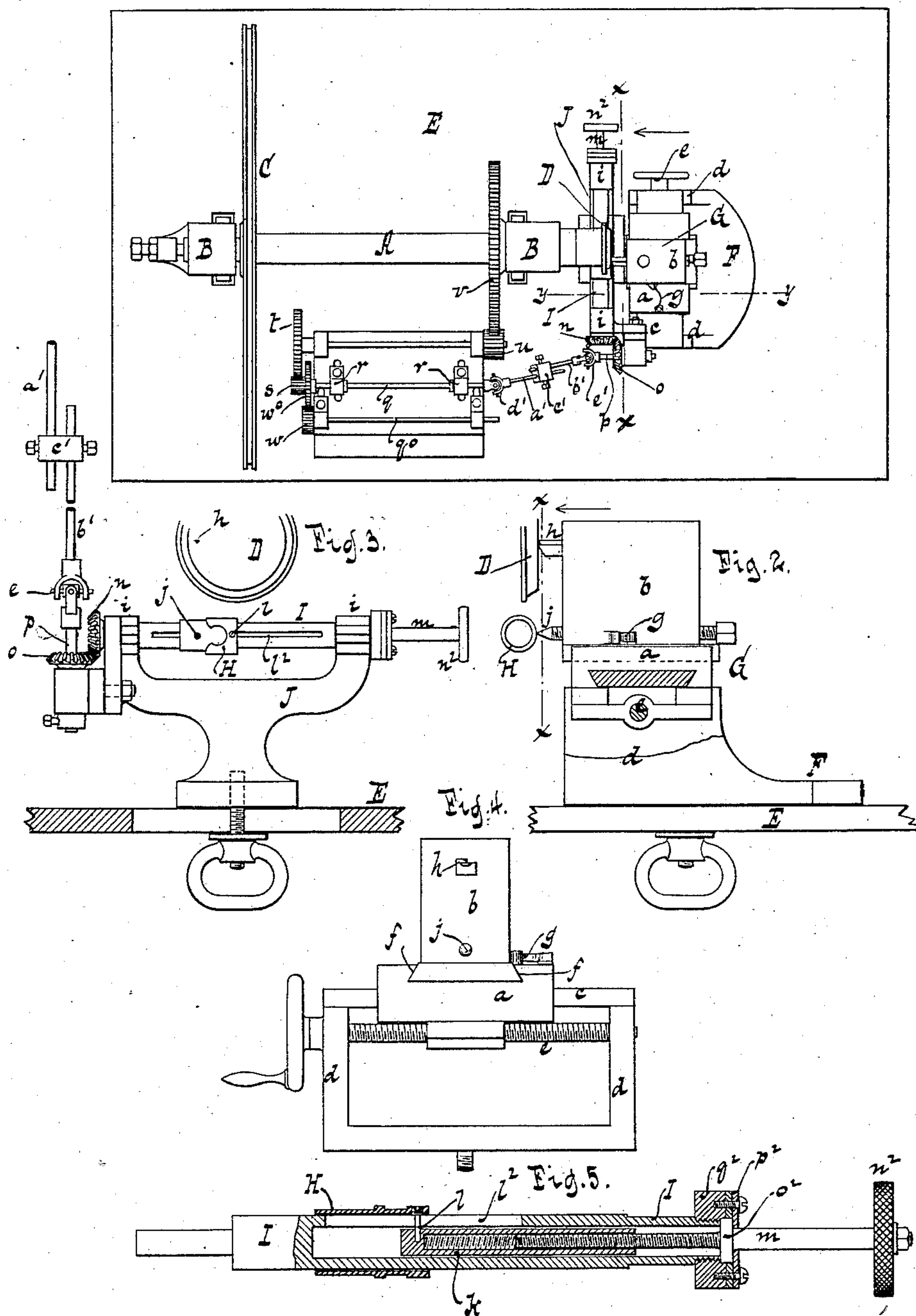
(No Model.)

A. SCHWITTER.

ROSE ENGINE.

No. 307,340.

Fig. 1. Patented Oct. 28, 1884.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ANTON SCHWITTER, OF BROOKLYN, NEW YORK.

## ROSE-ENGINE.

SPECIFICATION forming part of Letters Patent No. 307,340, dated October 28, 1884.

Application filed May 15, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ANTON SCHWITTER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Rose-Engines, of which the following is a specification.

This invention relates to an improvement on the rose-engine described in Letters Patent No. 297,454, granted to me April 22, 1884. The precise nature of my present improvement is pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a plan or top view. Fig. 2 is a partial longitudinal section in the plane  $y y$ , Fig. 1, on a larger scale than the previous figure. Fig. 3 is a transverse section in the plane  $x x$ , Figs. 1 and 2. Fig. 4 is a face view of the slide-rest. Fig. 5 is a sectional view of the pattern-spindle.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates an arbor, which has its bearings in standards B, and to which a revolving motion is imparted by a belt-pulley, C. On one end of this spindle is secured the article to be ornamented. In the example shown in the drawings this article consists of a metallic disk, D, which may form the back plate of a watch-case. The standards B, which form the bearings of the arbor A, rise from a bed-plate, E, and on this bed-plate is adjustably secured a secondary bed-plate, F, which carries the slide-rest G. This slide-rest consists of two slides,  $a b$ , the slide  $a$  being fitted on a guide,  $c$ , which is firmly secured to standards  $d$ , rising from the secondary bed-plate F. A screw,  $e$ , serves to adjust the slide  $a$  on its guide  $c$ . The slide  $b$  is fitted in a guide-groove,  $f$ , extending transversely across the slide  $a$ , and it is pressed toward the end of the arbor A by a spring; or, if desired, this spring can be omitted, and the slide  $b$  can be pressed toward the end of the arbor A by hand, as will be hereinafter more fully explained. In the head of the slide  $b$  is secured the tool or graver  $h$ , and also the tracer  $j$ , which graver and tracer extend longitudinally from one face or side of the slide in the direction of the length of the arbor, in order to adapt the graver to operate on the outer face of an article carried directly on the

end of the arbor, and also adapt the tracer to co-operate with a pattern-die which is adjustable in a direction transversely to the axis of the arbor, as hereinafter explained.

H is the pattern-die, which is fitted on a spindle, I, and this spindle has its bearings in boxes  $i$ , supported by a standard, J, which is adjustably secured to the main bed-plate E, (see Fig. 3,) and which is situated beneath the end of the arbor A, Figs. 1, 2, and 3, the center line of the pattern being on a level with the tracer  $j$ . The frame J and spindle I are arranged transversely, or at right angles to the axis of the arbor, which adapts one end of the arbor to be geared (as hereinafter set forth) to and revolved by a drive-wheel,  $v$ , adjacent to the end of the shaft which carries the article to be ornamented. The pattern-spindle I (see Fig. 5) is hollow throughout the largest portion of its length, and into its bore is fitted a slide,  $k$ , which connects by a pin,  $l$ , with the pattern-die, said spindle being provided with a slot,  $l^2$ , in which the pin  $l$  moves. The slide  $k$  is provided with an internal screw-thread to engage with a screw-rod,  $m$ , on the outer end of which is secured a finger-button,  $n^2$ .

On the screw-rod  $m$  is formed a collar,  $o^2$ , which is confined between the end of the spindle I and a plate,  $p^2$ , said plate being secured to a ring,  $q^2$ , which is firmly fastened on the end of the spindle by screw-threads or otherwise. By turning the screw-rod  $m$ , therefore, a positive motion can be imparted to the pattern-die in either direction, and said pattern-die can be moved to the extent of the slot  $l^2$  in the pattern-spindle.

On one end of the spindle I is mounted a bevel-wheel,  $n$ , Figs. 1 and 3, which gears into a bevel-wheel,  $o$ , mounted on a shaft,  $p$ , which has its bearing in a box adjustably secured to the standard J, and to which motion is transmitted from a shaft,  $q$ , which has its bearings in standards  $s$ , rising from or firmly secured to the main bed-plate E, and which is geared together with the arbor A by cog-wheels  $s$ ,  $t$ ,  $u$ , and  $v$ . (See Fig. 1.) These cog-wheels are so proportioned that the pattern-spindle I revolves at a greater velocity than the arbor A, which carries the work, (represented in this example by the disk D,) and in the example shown in the drawings an additional shaft,  $q^0$ , is shown, which is geared together with the



shaft  $q$  by cog-wheels  $w w^0$ , so that by transmitting motion to the pattern-spindle I from the shaft  $q^0$ , instead of from the shaft  $q$ , the relative velocity between the arbor A' and the pattern-spindle I is changed. Of course, the same effect may be produced by providing several sets of gear-wheels, so that the speed of the pattern-spindle can be adjusted to a variety of work. The shaft  $q$  (or  $q^0$ ) is connected to the shaft  $p$  by two rods,  $a' b'$ , which are connected by a coupling,  $c'$ , so that their combined length can be increased or decreased, as may be requisite. The rod  $a'$  is connected to the shaft  $q$  by a universal joint,  $d'$ , and the rod  $b'$  is connected to the shaft  $p$  by a universal joint,  $e'$ , such being necessary because the two shafts  $p$  and  $q$  are not situated in line with each other; neither are they at all times in the same plane, since the standard J must be adjusted on the main bed-plate F in accordance with the shape of the article to be ornamented. It will be seen from this description that the pattern-die is situated beneath the work and the tracer  $j$  directly beneath the graver  $h$ . By this arrangement the adjustment of the pattern-die, the tracer, and the graver in relation to the work is facilitated, particularly if the work has oblique surfaces, and by mounting the pattern-die on its spindle in such a manner that it is firmly retained in its state of rest the work produced is more correct than it is if the pattern-die is liable to yield to the thrust of the tracer, which is the case if it is retained in position by a spring.

I do not claim in this application anything shown and described in Patent No. 297,454, heretofore mentioned.

I do not broadly claim a graver and a tracer arranged one above the other on a slide-rest, combined with a pattern-die adjustable longitudinally on a slotted shaft containing a screw-rod connected with the pattern-die, so that the latter is adjusted by rotating the screw-rod.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the revolving arbor for carrying at one end the article to be ornamented, the spindle I, journaled in the frame transverse to the axis of the arbor under one end of the latter, the pattern-die H, adjustable

longitudinally on the spindle, the slide arranged in advance of the spindle and movable toward and from the end of the arbor in the direction of the length of the latter, and the graver  $h$  and tracer  $j$ , both carried by said slide and arranged longitudinally in the direction of the length of the arbor, substantially as described.

2. The combination of the revolving arbor for carrying at one end the article to be ornamented, the slide-rest G, comprising the adjustable slides  $a$  and  $b$ , the graver  $h$ , and tracer  $j$ , both carried by the slide  $b$  and arranged longitudinally in the direction of the length of the arbor, the frame J at one side of the slide-rest transverse to the axis of the arbor, the transverse spindle I, journaled in the frame, and the pattern-die H, adjustable on the spindle in a direction transverse to the axis of the arbor, substantially as described.

3. The combination of the arbor A, having a drive-wheel at or near one end and a drive-wheel,  $v$ , adjacent to its other end, the spindle I, journaled transverse to the axis of the arbor beneath one end thereof, gearing connecting the spindle with the drive-wheel  $v$  on the spindle, a pattern-die, H, adjustable on the spindle, a slide-rest, G, and the graver  $h$  and tracer  $j$ , both projecting from one side of the slide-rest in the direction of the length of the arbor, substantially as described.

4. The combination, with the arbor A, the slide-rest G, and the graver  $h$  and tracer  $j$ , both carried by the slide-rest, of the hollow slotted spindle I, the pattern-die H, movable thereon, the slide  $k$  in the spindle connected with the pattern-die, the ring  $q^2$  on the end of the spindle, the plate  $p^2$ , secured to the ring, the screw-rod engaging the slide and having a collar,  $o^2$ , loosely confined between the plate and the end of the spindle, and a finger-button,  $n^2$ , on the outer end of the screw-rod, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

ANTON SCHWITTER. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.