

March 15, 1938.

K. K. LEDIG

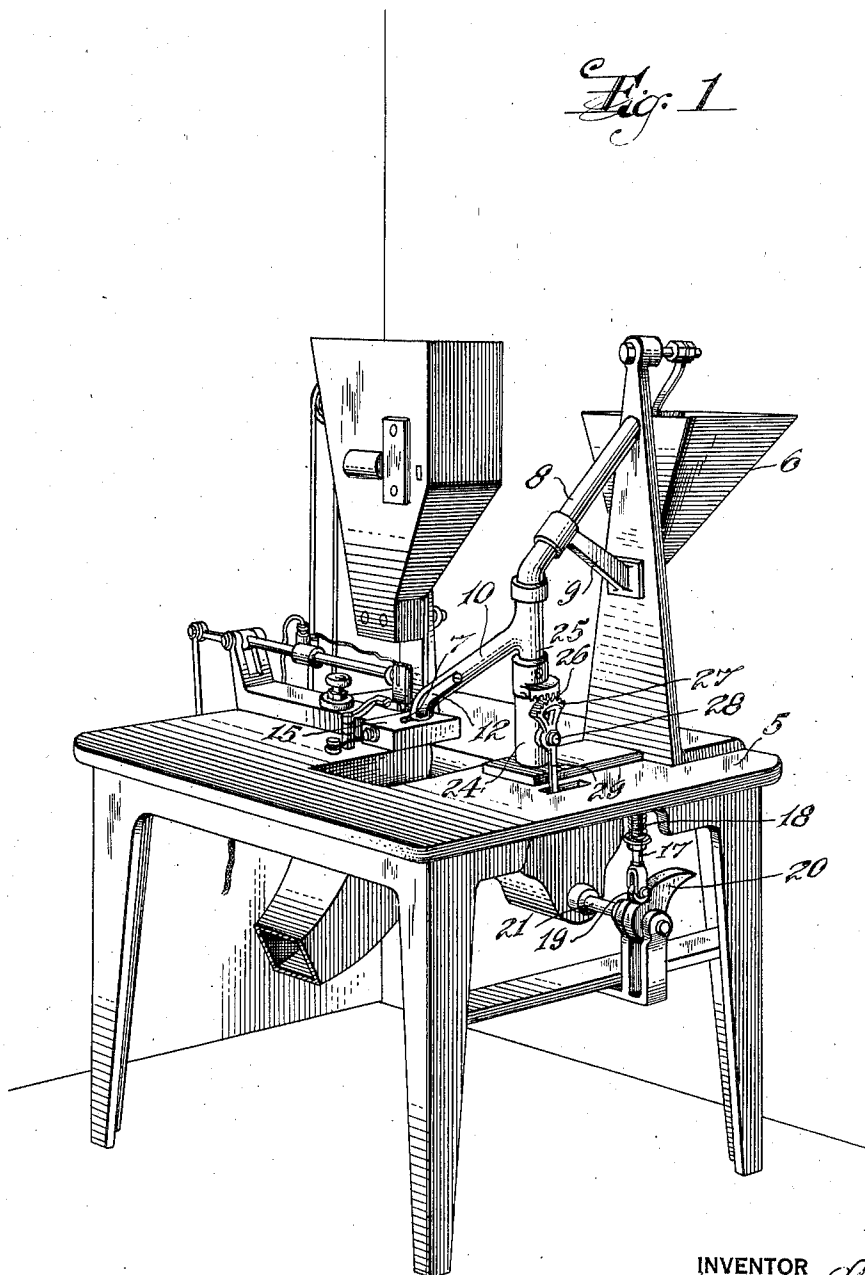
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APPARATUS FOR FEEDING PEN POINT TIPS

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2 Sheets-Sheet 1

Fig. 1



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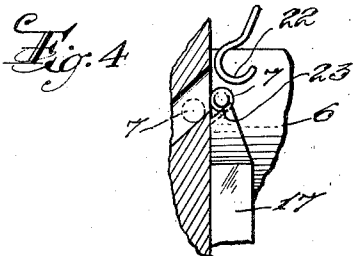
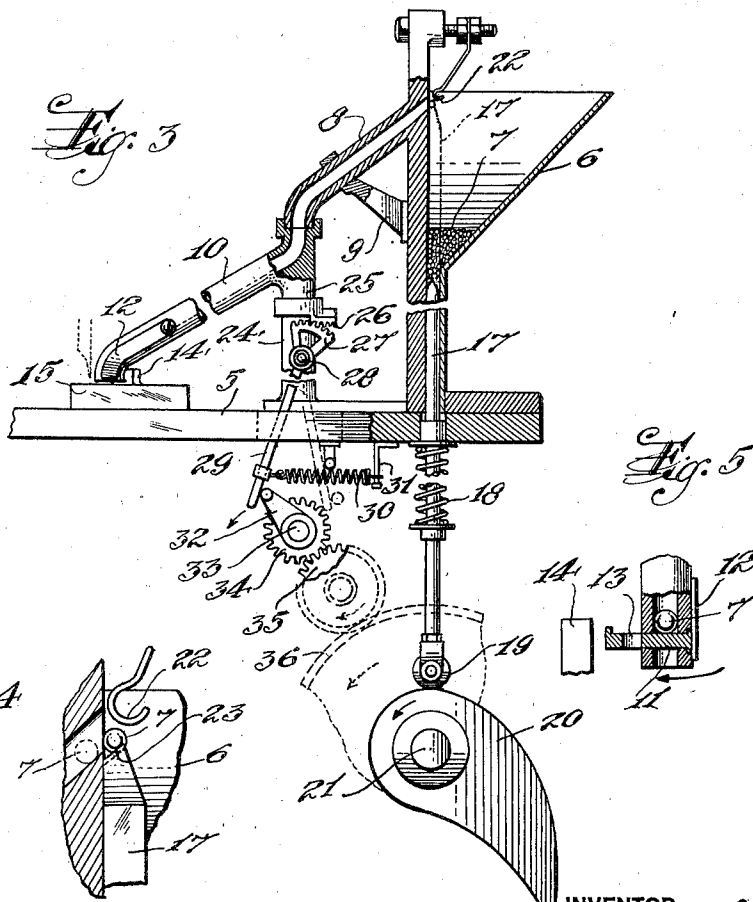
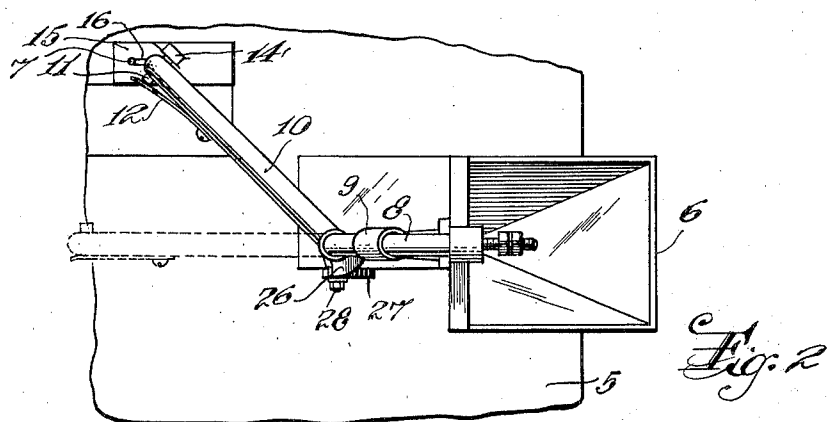
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APPARATUS FOR FEEDING PEN POINT TIPS

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2 Sheets-Sheet 2



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APPARATUS FOR FEEDING PEN POINT TIPS

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3 Claims. (Cl. 193—22)

This invention relates to the manufacture of pen points and more particularly to an apparatus for automatically feeding tips to a position where they can be attached to pen nibs.

In the manufacture of pen points, it is the practice to attach to pen nibs, tips of iridium or similar metal by causing an electric current to flow through the tip and nib for a predetermined length of time. Inasmuch as the tips of iridium or similar metal are relatively small, and in order that the manufacture of the pen point can be economical, it is necessary to feed the tips and nibs in the contact with an appreciable amount of speed, and the feeding operation obviously must be automatic.

It is therefore, an object of this invention to provide an apparatus for automatically feeding tips of iridium or similar material into a position whereby they can be readily attached to pen nibs.

A further object is the provision of an apparatus for feeding tips so that they can be attached to pen nibs, which apparatus has its various parts synchronized so that only one tip can be fed at a time.

These and other advantageous objects, which will later appear, are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawings, forming part hereof, and in which:

Fig. 1 is a perspective view of a feeding apparatus embodying my invention,

Fig. 2 is a plan view of the feeding apparatus,

Fig. 3 is an elevational view, partly in section, showing details of the apparatus,

Fig. 4 is a side view showing details of a feeding plunger used in the apparatus, and

Fig. 5 is a sectional view showing details of a spring pressed normally closed door which enables the feeding of only one tip at a time.

Referring to the drawings, in Fig. 3 a feeding apparatus is shown to include a hopper 6, carrying a plurality of tips 7. The hopper 6 communicates with a downwardly inclined chute 8 supported by a bracket 9, the chute 8 communicating with a similar chute 10, the latter being rotatably mounted so that it can be swung in a plane transverse to the plane of the chute 8.

The lower end of chute 10 has slidably mounted therein a plate 11 which is normally forced by a flat spring 12 mounted on the chute 10, to a position to close the lower end of chute 10. The plate 11 has an aperture 13 which registers with the opening in the chute 10 when the latter is moved to a position to cause the plate 11 to

abut a stop 14 mounted upon a block 15, the latter having a groove 16, in which the tips are deposited so that they can be attached to pen nibs.

Projecting into the hopper 6 is a plunger 17 which is encircled by a compression spring 18, tending constantly to force the plunger downwardly. The lower end of the plunger is provided with a roller 19 engaging a cam 20 fixed to a shaft 21.

As the shaft 21 rotates the plunger 17 is forced upwardly in the hopper 6 carrying with it one of the small tips 7 until the opening in the chute 8 is reached, at which point the tip engages a stop in the form of a hook 22, and the tip is forced downwardly into the chute. The upper end of the plunger 17 is inclined and provided with a slight groove 23 to hold the tip in position as it is being raised by the plunger to the mouth of the chute 8.

Mounted on the base 5 of the apparatus is a cylindrical post 24 which rotatably receives a collar 25, the latter being integral with the chute 10, and having on the lower surface thereof a toothed segment 26 in mesh with a segmental gear 27 the latter being pivoted to the post 24 at 28 and having an integral arm 29 attached to a tension spring 30, the latter being also attached to a bracket 31 mounted on the base 5 and tends to normally pull the arm 29 towards the plunger 17 (see Fig. 3).

The arm 29 engages an arm 32 fixed to a shaft 33, to which is fixed a gear 34 in mesh with a gear 35 the latter being in mesh with a gear 36 mounted on shaft 21. As the gear 34 is rotated, the arm 32 will periodically engage the arm 29 to cause the segmental gear 27 to rotate the chute 10 to a position shown in dotted lines in Fig. 2.

In operation, a tip is fed through chutes 8 and 10, and falls upon the plate 11. The plunger then descends to pick up another tip; in the meantime the chute 10 has been swung over to cause the plate 11 to engage the stop 14, to move the plate 11 against the action of the spring 12 whereby the apertures 13 will register with the passage in chute 10 and allow the tip to fall into the groove 16 in the block 15. The motions of the plunger 17 and the swinging of the chute 10 obviously, are timed and in synchronism as they are controlled by the rotation of the same shaft 21.

From the above description it will be seen that I have invented a simple, yet effective and efficient apparatus for rapidly feeding tips so that

they can be attached to pen point nibs by electrical or other means.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which
5 obviously embodiments may be constructed including many modifications, without departing from the general scope herein indicated and denoted in the appended claims.

10 Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In an apparatus for feeding pen point tips, an inclined chute positioned to receive tips from
15 a hopper, a second chute communicating with the first chute and swingably mounted with reference thereto, means to swing said second chute between two predetermined positions, spring controlled means for closing the mouth of
20 the second chute until it has been swung to a position for depositing a tip, and means to automatically open said mouth when the second

chute is swung to one of said predetermined positions.

2. In an apparatus for feeding pen point tips, a chute communicating with a hopper and adapted to receive tips therefrom, a second chute
5 communicating with said first chute and swingably mounted with reference thereto, spring controlled means for closing the lower end of the second chute, means to swing said second chute to a position for depositing a tip, and means op-
10 posing said spring controlled means to open the second chute to allow a tip to be deposited.

3. In an apparatus for feeding pen point tips, a chute communicating with a hopper and adapted to receive tips therefrom, a second chute
15 communicating with said first chute and swingably mounted with reference thereto, means normally closing the mouth of the second chute, and means to automatically open said second chute when it has been moved to the position for
20 depositing a tip.

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