G. TRINKS.

Machine for Making Ornamental Chains.

No. 166,432. Patented Aug. 3, 1875.

Fig. 3.

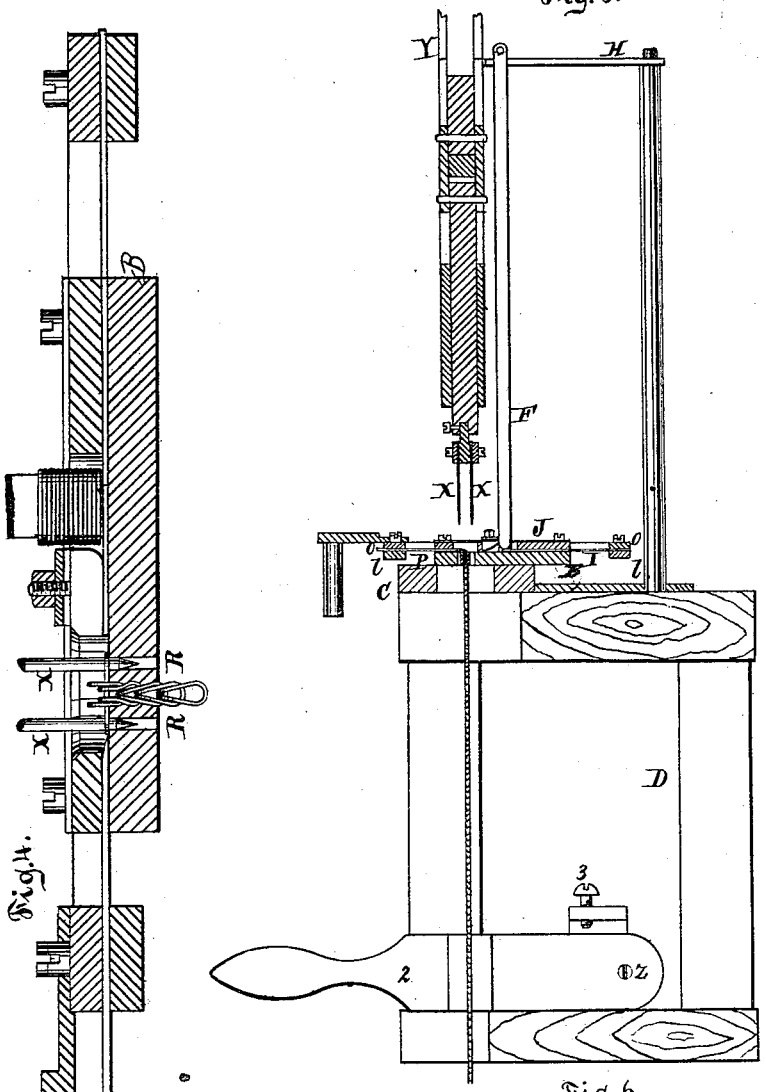


Fig. 4.

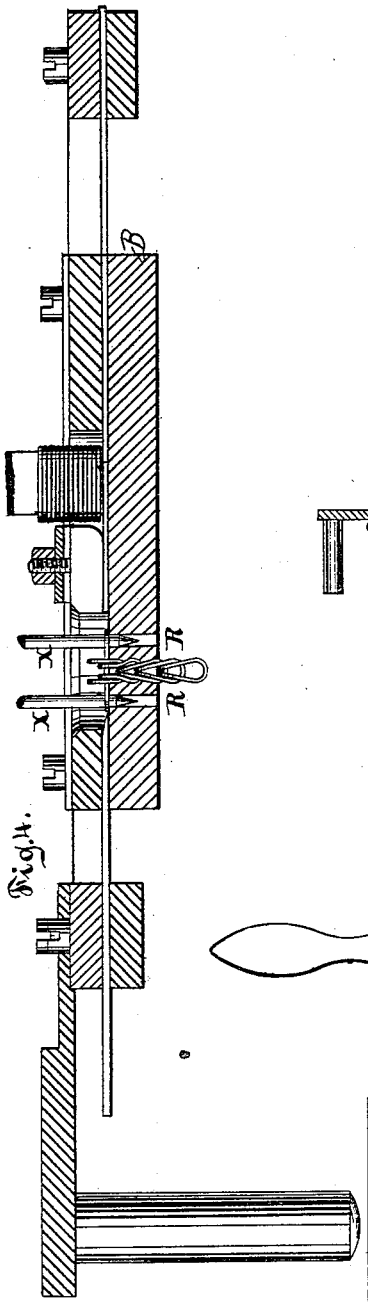


Fig. 5.

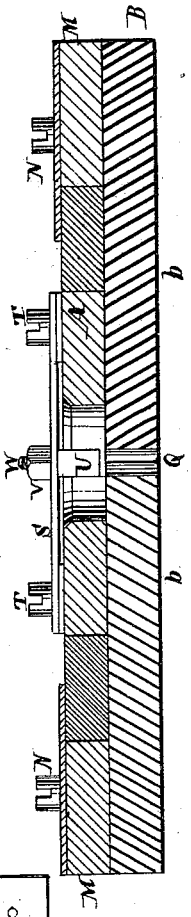
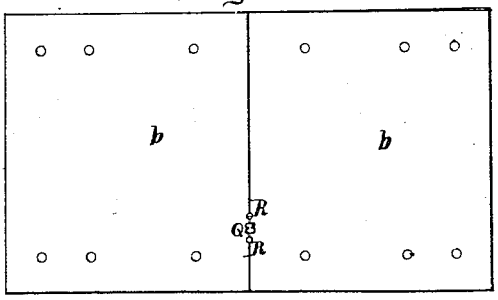


Fig. 6.



Witnesses.
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per
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UNITED STATES PATENT OFFICE.

GREGOR TRINKS, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR MAKING ORNAMENTAL CHAINS.

Specification forming part of Letters Patent No. **166,432**, dated August 3, 1875; application filed June 11, 1875.

To all whom it may concern:

Be it known that I, GREGOR TRINKS, of New York, in the county and State of New York, have invented a new and useful Improvement in Machinery for Making Chains, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 is a front elevation of a machine containing my improvements. Fig. 2 is a horizontal section in the line *x x* of Fig. 1. Fig. 3 is a vertical section in the line *y y* of Fig. 1. Fig. 4 is a vertical section of the bed-plate and receiving-plate of the apparatus in the line *z z* of Fig. 2. Fig. 5 is a vertical cross-section of the same plates in the line 1 1 of Fig. 2. Fig. 6 is an inverted plan view of the bed-plate.

Similar letters indicate corresponding parts.

The object of this invention is the improvement of machinery for making chains.

The invention embraces, among other things, a feeding device, consisting of a flat vertical wire, upon which the links are strung one upon the other, resting upon each other, so that they are fed to the chain-making machine by gravity. The foot of the feeding-wire extends down into a slot in a receiving-plate, below which is a bed-plate, composed of two parts joined to each other edge to edge, along a line coinciding about with the middle line of the slot. The lowest link rests upon the bed-plate, and is stripped off the feed-wire and pushed forward by a reciprocating pusher, which is arranged to move between the receiving-plate and the bed-plate. The forward end of the pusher strikes against the rear end of the link, and pushes it forward beneath a spring-guide, which overlies the central portion of the groove, the bottom of the guide being so formed as, with the surface of the bed-plate, to make a channel of proper diameter to guide the link in its forward movement. The spring-guide is an important part of my invention, inasmuch as it compensates, by reason of its yielding action, for any inequality in the thickness of any part of a link, and allows the links to pass without injury to them or to the mechanism, notwithstanding such inequalities.

The links which I prefer to use are closed at their ends, which are soldered together so as to make an unbroken link, and it is found in practice that some of them are thicker at one end than at the other, as, for example, when the ends to be soldered slip past each other, and not come squarely together. In order, therefore, to provide for the passage through the guide of links of unequal sizes, or whose ends are of varying thicknesses, I have constructed the guide so as to permit the passage of such links, while links of uniform size will also be properly guided.

The link is pushed through the guide-passage, whence it emerges and passes through the ends of the preceding loops, as hereinafter explained, until it encompasses a slot which is made through the bed-plate, in which slot the chain is formed, and through which it descends as fast as it is completed.

The pusher is mounted in the rear end of an open frame, which slides back and forth on the bed-plate. The free end of the pusher extends forward in the sliding frame about half-way to its front end, and from the front end of said frame a needle extends toward the rear, the needle and the pusher being in the same plane, and both being arranged to slide over the surface of the bed-plate as the frame in which they are mounted is reciprocated back and forth.

When the link is in place on the bed-plate, encompassing the slot in that plate, two needle-punches are brought down into the link near its ends, for the purpose of expanding said ends, the points of the punches entering holes made for them in the bed-plate. When the needle-punches are withdrawn the link is pulled down into the slot by a wire or cord attached to the middle of its length, if it is the first link of the chain, and its ends are thereby thrown up at right angles, in readiness to receive the horizontal reciprocating needle, which enters its turned-up ends, and disposes them in a straight line in readiness to receive the next link, which is advanced by the pusher, and caused to enter the opened turned-up ends or loops of the preceding link, going half-way through, so that the new link projects an equal distance on either side of the preceding link. The needle-punches are next brought down into the ends of the new link, and the preced-

2. The combination, with the reciprocating slide J, of the pusher I and needle P attached to said slide, substantially as herein shown and described.

3. The spring-plate S and block U, in combination with the receiving and bed plates A B and pusher I, substantially as shown and described.

4. The clamp 2, for drawing down the chain, arranged below the bed-plate B, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 10th day of June, 1875.

GREGOR TRINKS. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.

UNITED STATES PATENT OFFICE.

EDWARD WESTON, OF NEW YORK, N. Y., ASSIGNOR TO STEVENS, ROBERTS & HAVELL, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF ANODES FOR NICKEL-PLATING.

Specification forming part of Letters Patent No. **166,433**, dated August 3, 1875; application filed July 10, 1875.

To all whom it may concern:

Be it known that I, EDWARD WESTON, of New York, in the county of New York and in the State of New York, have invented certain new and useful Improvements in Anodes or Positive Electrodes for Electro-Plating; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

My invention relates to a new process for forming an anode or positive electrode to be used in the process of electro-deposition, and is especially useful in the case of metals which melt at high temperatures, or are difficult of fusion, such as cobalt or nickel.

The nature of my invention consists in a process for forming an anode or positive electrode, in which the particles of metal are mixed with a suitable cement, so as to form a solid mass, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a perspective view of my improved anode.

In the construction of my anode, the particles of metal *a a* are cemented together, so as to form a solid, compact mass, offering little resistance to the passage of the current, and exposing a suitable surface to the action of the electrolyte.

The cement *b* must not be affected by the solution, and should be capable of holding the particles firm enough to withstand the handling which the anodes will be subjected to in use. For this purpose I prefer to use a mixture of powdered carbon and molasses, or some other substance capable of forming a coherent paste. To this paste the metal is added in fine powder, granules, or fragments, and the mass thus obtained should be placed in molds and subjected to pressure, dried, and then baked out of contact of the air until the mass is thoroughly carbonized, and a solid, compact, coherent mass is obtained.

The anode thus formed is an excellent conductor of electricity, and answers the purpose admirably.

Oxide, carbonate, or any other compound may be mixed with the carbon-paste instead of the metal; but I prefer to use the metal.

The proportions of the various substances will vary according to the degree of fineness of the carbon or the metal; but the paste should be made as stiff as possible, and as much metal added as it will take without being too fragile.

Other substances may be used, and the metal connected in any way that may seem best.

This form of anode is cheaply and easily made. The resistance is less than in those forms of anode in which the particles of metal are simply spread upon the surface of a conducting-plate, since the particles of metal are held firmly together, and are entirely surrounded in the carbon; consequently a much weaker current may be employed, and the operation of plating, &c., will take less time.

The fine particles of metal which, in other forms of anode, gradually detach themselves from the main body of the metal, and either fall to the bottom of the vat and are lost, (as in the case of cast anodes,) or prevent the perfect contact of the particles of metal, and thus increase the resistance, cost, and time of depositing the metal, as in that form of anode in which the particles are placed upon the surface of a conducting-plate, is entirely avoided.

The finest dust can be used in the preparation of these anodes, and, consequently, the anodes can be powdered, mixed with molasses, pressed, and baked, and used again and again, until nearly all the metal is used up, or more metal can be added.

I do not wish to be understood as claiming an anode consisting of a carbon plate having particles of nickel united to the outer surface thereof, as such is not my invention.