

E. HEUSCH.  
 APPARATUS FOR THE MANUFACTURE OF NEEDLES.  
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1,259,982.

Patented Mar. 19, 1918.

Fig. 3.

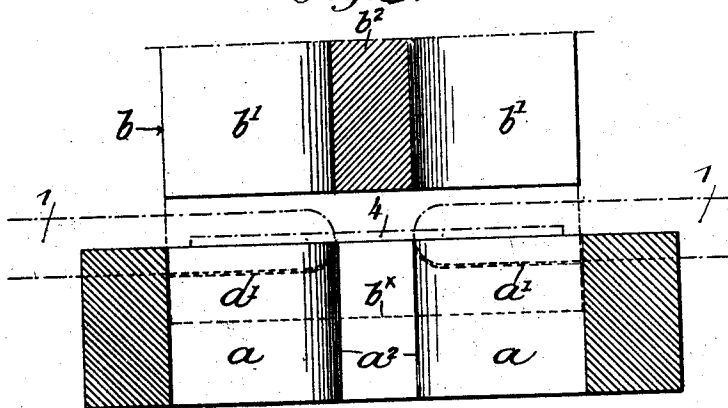


Fig. 4.

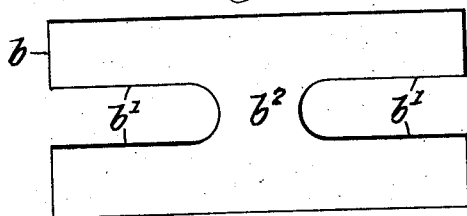


Fig. 5.

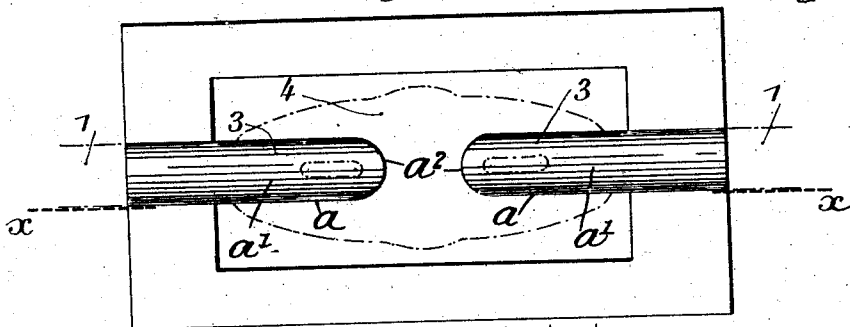
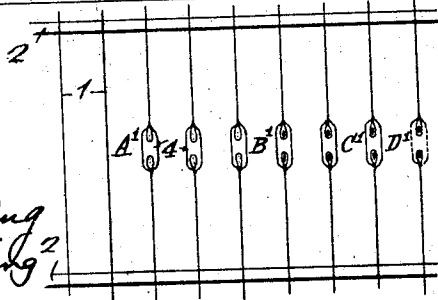


Fig. 1.

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# UNITED STATES PATENT OFFICE.

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APPARATUS FOR THE MANUFACTURE OF NEEDLES.

1,259,982.

Specification of Letters Patent.

Patented Mar. 19, 1918.

Application filed April 25, 1913. Serial No. 763,633.

To all whom it may concern:

Be it known that I, EDOUARD HEUSCH, a subject of the Emperor of Germany, residing at Paris, 84 Rue Michel-Bizot, in the Republic of France, manufacturer, have invented certain new and useful Improvements in Apparatus for the Manufacture of Needles, of which the following is a specification.

This invention relates to improvements in the mechanical manufacture of needles, for the purpose of rendering such manufacture more economic on account of the mechanical execution of certain finishing operations hitherto made by hand.

Figure 1 shows diagrammatically a part of the process of the present invention;

Fig. 2 shows a blank produced by the new process;

Fig. 3 is a vertical section through  $w-w$  of Fig. 5 and shows male and female dies on which lies the needle blank connected by a fin.

Fig. 4 is a plan of the male die.

Fig. 5 is a plan of the female die.

The male die or punch is H shaped, its transverse part having a width which corresponds to the interval or space between the needle heads, and the interval between its parallel members corresponding to the width of the heads. The female die has an opening so shaped as to correspond to that of the male die; it possesses grooves on its upper face in order to receive the needle heads.

$a, a$  designate the two matrices in the shape of vertical plates arranged in alignment with a space in between; in the top of each plate there is provided a recess  $a'$  adapted to serve as a seat for the two needles connected head to head as shown in Fig. 2, the adjacent ends  $a^2$  of the two plates  $a, a$  have a section which is rounded to conform with the shape of the head of the needles.

The punch  $b$  is H shaped, in two of its opposed faces there are provided slots the cheeks  $b'$  of which are adapted to slide against the lateral faces of the plates  $a$ , while the central part or core  $b^2$  is adapted to slide against the rounded surfaces of said plates. One of the pairs of needles having been placed on the matrices  $a, a$  and their fins 4 being in the position shown in dotted lines in Fig. 5, the punch when moving downward will cause the fin to separate from the two needles and to slide downward along the matrices, leaving upon the lat-

ter the needles, separated and perfectly trimmed around the entire contour of their heads. The dotted line  $b^x$  (Fig. 3) shows the lower limit of movement of the lower face of the punch  $b$ .

As shown diagrammatically in Fig. 1 of the accompanying drawings, the machines of the most improved type now in use are so fitted that steel rods 1 pointed at both ends are brought by an endless conveyer 2 firstly to A under a die which so stamps the middle as to form the heads 3 of two needles, without piercing their eyes; the flattened metal around the heads and between the latter forms a bur 4 which unites the two needles, as shown on a larger scale in Fig. 2; the needles are then advanced under perforating dies which perforate the eyes 5. Afterward the needles are thrown out of the machine, the work of which has now been done.

The needles are then taken up by women operators who thread the needles on a string, separate the same by breaking the burs 4 between the heads 3 and then grind off such burs. It is to be observed that the portion of the bur comprised between the heads 3 is rendered as thin as possible in order not to increase uselessly the grinding-off work, and to facilitate the breaking of such portion.

According to my invention, for operations by hand which follow the perforation of the eyes there are substituted different mechanical operations, while the stamping operation must be so conducted as to produce between the heads a long bur, that is to say so as to give a result exactly the inverse of the one sought after by the method of manufacture now in use.

The invention consists in advancing the needles coupled together by their burs 4, after the perforation of the same, firstly to a flame located at  $C^1$ , as diagrammatically shown in Fig. 1, so as to anneal the metal crushed by the previous stamping, and then to a cutter member located at  $D^1$  and so shaped as to detach at a single stroke the bur 4 from the needles. Such cutter member comprises of course male and female dies so shaped as to correspond to the forms of the heads 3 and of the burs 4 to be cut off. The said cutter member may be mounted on the machine whereby the previous stamping and perforating operations have been performed. However, in the case of a machine

now in use which cannot be transformed, such cutter member may be mounted on a separate machine.

By means of such a cutter member, the needles are separated and the burs are cut off directly, which does away with the work by hand required by the machines now in use, work which is both a long and costly one.

The carrying out of such a process requires, of course, for the purpose of facilitating the construction and the work of the cutter members, the provision between the heads of the needles of a space larger than before, as clearly shown in Fig. 2; the stamping tools now in use must therefore be modified.

**Claim:**

A device for separating and trimming the heads of pairs of needles which are united by fins resulting from the stamping, said device comprising two vertical plates or matrices each plate having a width equal to the diameter of the needle heads and having a

groove at its upper side shaped so as to receive a needle head, both of said plates being placed in alinement and spaced the one from the other, their adjacent ends having a rounded section which corresponds to the shape of the end of the needle heads, and an H shaped punch or cutting instrument having recesses at two opposite sides, the cheeks whereof are adapted to slide against the side faces of the said matrices whereas the central part of the said punch between said grooves is adapted to slide against the adjacent ends of the said matrices, the transverse section of said grooves corresponding to that of the matrices and to the shape of the needle heads, substantially as described and illustrated.

In testimony, that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EDOUARD HEUSCH.

Witnesses:

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