

hours. It was patented in the United States, No. 147,372. The machine exhibited was somewhat modified and simplified from the construction shown in the patent.

NEEDLE-MAKING MACHINERY.

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The display of needles for hand-use and for the various styles of sewing-machines was ample and admirable, exhibits having been furnished by England, Germany, and the United States. The list of awards states the conclusions arrived at by the group having this branch of manufacture in charge. It was not always easy to arrive at a conclusion; but by dint of severe tests and microscopic examination, a determination was reached, based upon the quality of the metal, evenness of shape, excellence of shape, and variety of display. More than a hundred different kinds of needles were shown, the distinctions being founded upon size, sharpness of points, and adaptation to various purposes. Among the latter may be cited the ordinary domestic needle, sewing-machine, tambour, embroidery, darning, packing, surgical, etc. Allied with the needles were numerous other articles associated with them, such as bodkins, and needles for knitting, crochet, and tatting.

The foreign exhibits of needles were far in excess of the home display, as the awards will indicate; but the most interesting exhibit in the class was the machinery for making sewing-machine needles, from the National Needle Company, of Springfield, Massachusetts.

The machines were arranged in Machinery Hall, in the vicinity of the Corliss engine, and the series operated in a regular succession. The list of conditions of the needles is a long one, but may be summarized as:

Blank.	Brass brushed.
Reduced blank.	Eye-polished.
Reduced and pointed blank.	First inspection.
Grooved.	Hard straightened.
Eye-punched.	Finish-pointed.
Hardened and tempered.	Finished.
Hard-bur dressed.	

Speaking generally, the needles are of various lengths and patterns, to suit the requirements of different sewing-machines; they are also of various sizes for different grades of sewing. Besides the generic differences, such as straight or curved, and the specific variations, such as long, short, round, pointed, or chisel-pointed, there are