

REPORTS ON AWARDS.

GROUP XXI.

I. Pratt & Whitney Co., Hartford, Conn., U. S.

MACHINE TOOLS FOR WORKING METALS.

Report.—This company exhibits forty-nine (49) machine tools for working metals. These tools are to be commended for the admirable character of their general design, which shows the result of careful study and large experience applied to the determination of the proportion and union of parts in the several tools, with the view of eliminating unnecessary details, thus at once cheapening their construction and improving their qualities as working machines. In fact, the simple method adopted for attaining the desired ends is one of the conspicuous merits of this magnificent collection of machine tools.

This feature of simplicity is exemplified to a greater or less degree in all the tools and machines composing this exhibit, but it is especially manifested in the very ingenious and thoroughly efficient device for conical or taper turning, which can be attached to all of their lathes, as well as in the general design and working details of the lathes themselves; in the ingenious mechanism for shifting the belts on the planer exhibited, as also in the novel means devised for changing the traverse of the planer-bed without loosening the stops on its side, which enables the work in hand to be run out from under the tool for such a distance as suffices for a convenient examination, after which the work can be resumed with precisely the same traverse of bed as before.

The upright drill has a very simple and effective power "feed," and also an ingenious method of determining the depth of the hole as the work progresses. The gang or multiple spindle drills exhibited are simple in design, of excellent workmanship, and convenient in manipulation.

Included in this exhibit are a number of tools designed for use in the manufacture of fire-arms, sewing-machines, and other small varieties of mechanism. These are well thought out, and are constructed in a faithful and workmanlike manner. They contain very many ingenious methods of adjustment tending to facilitate the execution of work and to preserve the original accuracy of the tool itself. Among these may be mentioned a peculiarly simple and efficient vise, which can be used either on the planer or shaping machine for holding work,—a very satisfactory method of securing the tool holder of the shaping machines at any desired angle,—and an index scale for facilitating the adjustment of the proper length of stroke of the slide bar. This index scale is situated on one side of the slotted lever by means of which the slide bar is moved.

They exhibit a large variety of milling machines which are characterized by simplicity and originality of design coupled with excellent workmanship. Among the smaller of the machines they exhibit is a very simple and original mechanism for grinding the cutters of milling machines, which is adapted to grinding either cylindrical or conical cutters.

The various bolt-cutters shown are well-built and efficient machines, and contain some