



Figure 13
Tool Stand, with height gauge and packing piece racks and rack for holding drawing and instruction card for work in progress.

Any one of the examples cited above would in itself furnish the substance for a paper.

Machine shop practice affords a rich field for machine standardization and in this field Mr. Barth's work is pre-eminent.

Two machine tools of the same size and presumably of the same capacity built by different makers will be found to vary greatly in the range of speeds and feeds provided and in pulling power. It is highly desirable—more obviously so under scientific management—that they should be the

same, or as nearly so as possible, in order that jobs may be routed to either one indiscriminately and done as efficiently in one as the other, the same instruction cards and the same tool lists serving either one. By judicious and inexpensive changes in pulleys, belts and gears, Mr. Barth not only brings this about, but what is of greater importance, provides a range of speeds, of feeds and of pulling power suited to the predominating product, taking into account size, material and kind of work, in place of the combination provided

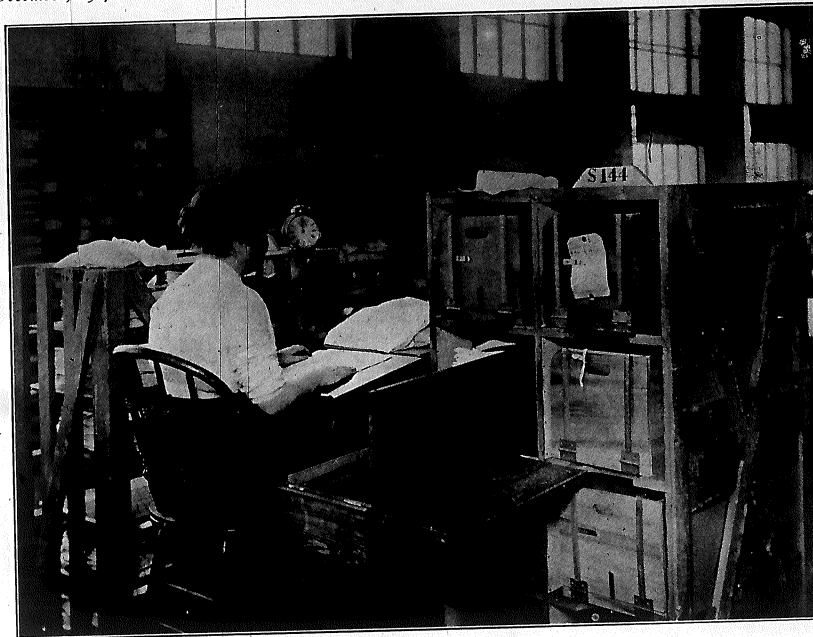


Figure 14
Standard Work-Place, Trucks and Containers for Folding Handkerchiefs.

by the maker which aimed to provide for *everything* within the machine's capacity, from the largest to the smallest. For example in a twenty-four inch engine lathe one may turn a piece twenty-four inches in diameter or one-half inch in diameter, but it is not good practice to do either; therefore, why try to provide speeds suitable for these extremes at the expense of speeds for the range of diameters that should properly and will as a rule be handled in a machine of that size?

Bolt slots for clamping work on the tables of drill presses, milling machines and boring mills and on the face plates of lathes seem to have been a detail considered of little importance by machine designers. Two different machines built by the same maker will be found to take bolts of the same

diameter but with heads of a different size; two machines of the same kind and size built by different makers will be found to call for bolts different in diameter as well as in the dimensions of the heads. I have even seen a drill press with slots provided to take bolts three-quarters of an inch in diameter, but a different size head in the table from that provided for in the base plate.

From what I have said about bolts under the head of standard tools, I think you will appreciate the difficulties, the loss of time and of production which such an unstandardized condition entails. Even supposing that a supply of ordinary bolts for each machine were kept in the tool room, resulting in a much larger stock and more work in the tool room, that they were kept in first-class con-