

assistant clerks. The work is arranged in four parts—sorting schedules, preliminary examination of schedules, tabulation and comparative results.

Tabulating the Facts.

The tabulation division is a remarkable illustration of how the census is made not only possible but the results verified and its accuracy proved. Prior to the census of 1890 when the schedules containing farm data were received, to be summarized in tables and the totals of the items given, each one had to be read and its information copied or extracts made with the pen or pencil. So it was with the schedules of population and the other papers filled out by the enumerators. Now, however, machinery has taken the place of the human hand to such an extent that this transcription is no longer needed.

Here is what becomes of the schedule when it reaches the tabulation stage. Placed on a table beside a machine that looks something like a typewriter, the girl behind the keyboard glances over it and notes merely the spaces that are filled with items of information. As fast as she glances at an item she presses a key that looks like a typewriter key. It remains depressed until she has come to the last item. As she pushes down a little lever one hears a clicking motion and from a slit in the side of the machine drops a pasteboard card into a receiver. This card is ruled off into sections, and in some are single letters or single figures, sometimes two letters or two figures. There are just as many spaces or sections on that card as on the schedule and more, for it may be intended to give additional data. It is a form on which every item of information on the schedule is "copied" by merely punching a hole in the space on the card which corresponds to the space which the item fills on the schedule.

A fair expert girl with one of

these machines will punch 3,000 schedule copies in eight hours, while 500 cards an hour have been recorded.

The mechanical tabulator which completes the work begun by the puncher is very compact and simple in appearance, considering the variety of work it performs. The punched card is sent to the tabulating section. Some of the spaces marked with the holes bear symbols in letters or figures which means bushels of wheat in farmer's crop, number of cows in herd, value of last harvest, acreage of farm. As we have said, spaces have been arranged on the card for all of this and much more. If a table is to be made up from totals of the figures to go into the census reports, the cards corresponding to the state or section, or the millions of cards which give the figures of the whole country are brought to the tabulating room. Again the cards are set under pins connected with keys. One pin point is provided for every space on the card, but only the keys are pressed connecting with the pins that are over the holes punched. Another lever push and the pins drop through the card holes into tiny cups filled with mercury. In the machine are a series of recording dials with movable pointers. The forcing of the pins into the mercury moves the pointers upon the dials by the electric current. The dials are so arranged that one is provided for every hole or space on the card—for every item of information on the census schedule. Actuated by the electric current these dials actually count like the adding machine in a bank, only far more rapidly, registering every figure. To them are attached rolls of "tape" which are operated like the familiar stock ticker.

At any time the tabulator wants to know how much he has added, he presses the lever and the exact total of acreage or crop or value