

A GRAPHICAL COMPARISON OF RAW AND FINISHED PRODUCTS IN THE PRINTING AND PAPER-MAKING TRADES.

When figures get beyond a certain point they lose their concrete value, and it is necessary to resort to some other means if we wish to make comparisons involving figures that run up into millions and billions. Therefore, we adopt the method of representing these figures by comparisons of bulk and form. The basis for the comparison which we have worked out is the Twelfth Census of the United States. In the opening article of this issue, devoted to the "Economic Side of the Industry," we have given a considerable number of the figures which are here also used.

The manufactures of paper and wood pulp have become so closely related that they are now usually treated as a single industry. Over 1,986,000 cords of wood were used in 1900 in the production of paper pulp. This would make a cube 634 feet high, and is a pretty large wood pile when compared with Trinity Church, New York. Straw comes next, 367,305 tons being consumed annually, and making a pile of bales 607 by 405 by 270 feet. We have not considered the subject of chemical fiber, owing to the diverse forms in

with printing presses denote the relative number of periodicals of various kinds. Thus the square marked "Monthly" stands for 1,817 periodicals; the "Daily" stands for 2,226 periodicals; and the "Weekly," 12,979 publications. To print the finished product requires the services of 204,791 printers. If they were combined to make one man, he would be a Colossus 338 feet 4 inches high, and would reach well up toward the top of the Park Row Building. The value of printing products, excluding the value of the paper and pulp product, which amounts to \$127,326,162, is \$347,055,050, which would make a solid silver column 100 feet high and 27 feet in diameter. This is compared with the Statue of Liberty. We feel that the presentation of these enormous figures graphically will prove interesting to many of our readers.

One lesson of the recent disaster on the Paris Metropolitan Railway is to emphasize the importance of a special fire helmet for irrespirable atmospheres. It seems that a helmet of the kind has been designed, and the Paris Municipal Council have voted \$600 for the manufacture and experimental use of a number of helmets in the principal stations. The helmet consists of a glazed cir-

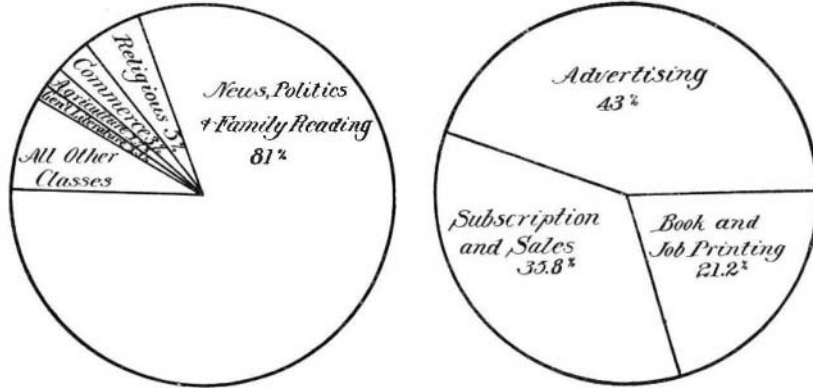
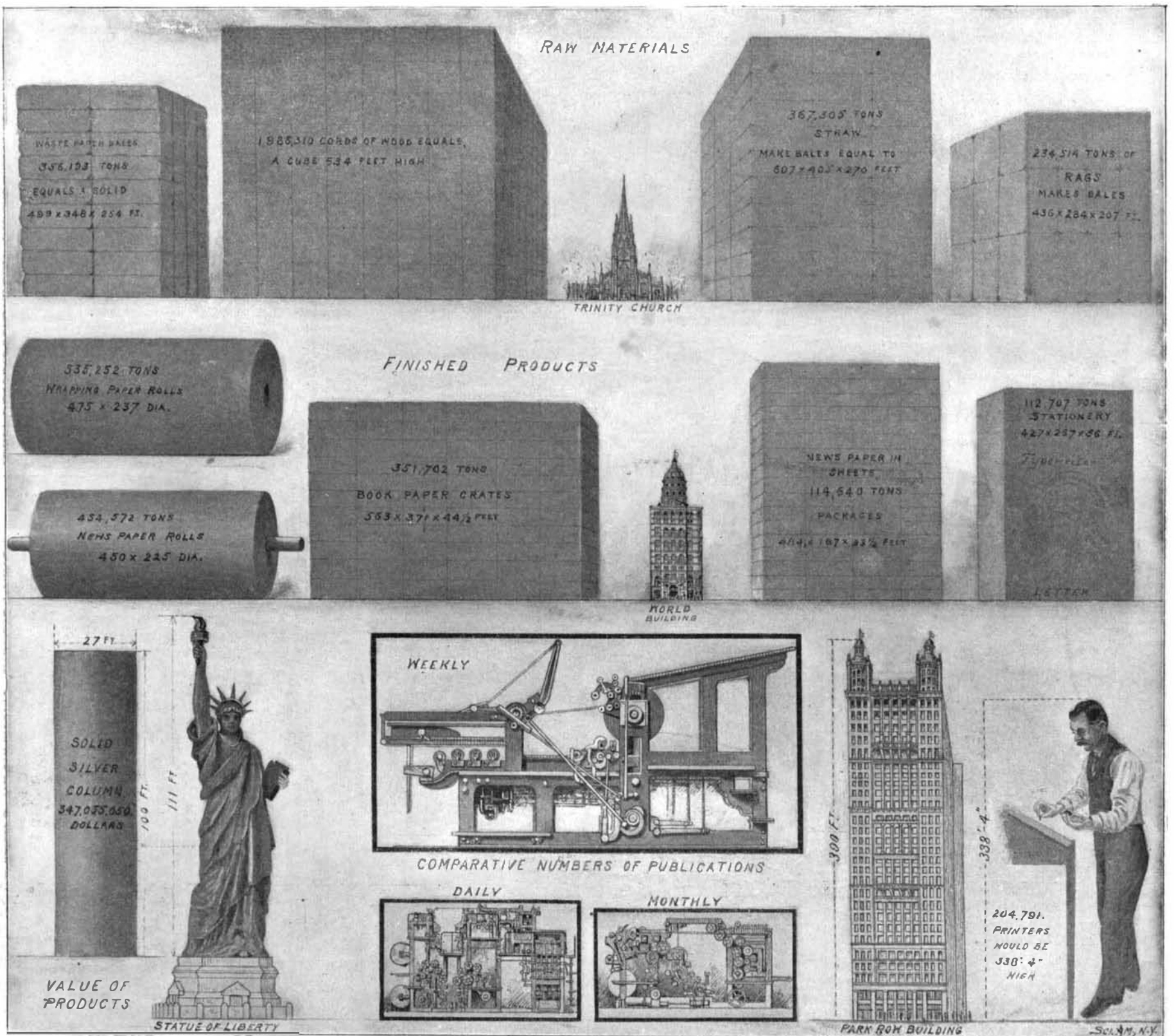


Diagram Showing Classification of Papers. Proportion in Which Advertising, Subscription and Sales and Book and Job Printing Form of the Total Value of all Products.



AMOUNT OF MATERIAL CONSUMED ANNUALLY IN THE MANUFACTURE OF BOOKS AND PERIODICALS IN THE UNITED STATES.

which it is consumed, although the bulk is very great, amounting to 644,006 tons. The old or waste paper consumed amounted to 356,193 tons. This would make a solid 499 x 348 x 254 feet. Two hundred and thirty-four thousand five hundred and fourteen tons of rags were consumed; this would make a pile of bales 436 x 284 x 207 feet. Ninety-nine thousand three hundred and one tons of Manila stock, including jute bagging, was also used.

Five hundred and thirty-five thousand two hundred and fifty-two tons of wrapping paper would make a roll 475 feet long and 237 feet in diameter. Book paper follows, the product being 351,702 tons. This would make a pile of crates 563 feet long by 371 by 44 1/2 feet. Stationery is another considerable item. One hundred and twelve thousand seven hundred and seven tons would make a box of stationery 427 feet long by 267 feet wide by 56 feet thick. Squares filled

cular headpiece surmounted by a small chamber containing an air pump, a visor to protect the face, and with the air pump and the other are connected two tubes—one for inspiration and the other for expiration, and merging in an India-rubber pipe connected with an air compressor near the spot to be explored. Three men are necessary, one to penetrate into the choke area, the other to hold a safety lamp, and the other to work the air compressor.