

WEIGHT PER CUBIC FOOT OF DRY AIR UNDER DIFFERENT PRESSURES AND TEMPERATURES

ATMOSPHERIC PRESSURE IN TABLE = 29.92 INCHES OF MERCURY

| Temp. °F. | VACUUM IN INCHES OF MERCURY | | | | | PRESSURE ABOVE ATMOSPHERE IN POUNDS PER SQUARE INCH | | | | | | | | | | | | | | | | | | Temp. °F. | |
|--------------|-----------------------------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|------|
| | 10 | 8 | 6 | 4 | 2 | 0 | .5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 9.0 | | 10.0 |
| -20 | .0602 | .0662 | .0722 | .0782 | .0844 | .0904 | .0934 | .0965 | .0995 | .1026 | .1056 | .1087 | .1117 | .1148 | .1178 | .1209 | .1239 | .1270 | .1300 | .1331 | .1361 | .1392 | .1453 | .1514 | -20 |
| -10 | .0589 | .0648 | .0707 | .0766 | .0825 | .0884 | .0914 | .0944 | .0974 | .1004 | .1034 | .1064 | .1094 | .1124 | .1154 | .1184 | .1213 | .1243 | .1273 | .1303 | .1333 | .1363 | .1423 | .1482 | -10 |
| 0 | .0576 | .0634 | .0691 | .0749 | .0806 | .0864 | .0893 | .0923 | .0952 | .0982 | .1011 | .1041 | .1070 | .1100 | .1130 | .1159 | .1189 | .1218 | .1248 | .1277 | .1306 | .1335 | .1393 | .1451 | 0 |
| 10 | .0564 | .0620 | .0677 | .0733 | .0789 | .0846 | .0875 | .0903 | .0932 | .0961 | .0989 | .1018 | .1047 | .1075 | .1103 | .1132 | .1160 | .1188 | .1217 | .1246 | .1275 | .1304 | .1362 | .1420 | 10 |
| 20 | .0552 | .0607 | .0663 | .0718 | .0773 | .0829 | .0857 | .0885 | .0913 | .0941 | .0969 | .0997 | .1025 | .1053 | .1081 | .1109 | .1137 | .1165 | .1193 | .1221 | .1249 | .1277 | .1333 | .1390 | 20 |
| 30 | .0541 | .0595 | .0649 | .0703 | .0758 | .0812 | .0839 | .0867 | .0894 | .0922 | .0949 | .0977 | .1004 | .1032 | .1059 | .1086 | .1113 | .1140 | .1167 | .1195 | .1223 | .1250 | .1305 | .1362 | 30 |
| 40 | .0529 | .0582 | .0636 | .0689 | .0742 | .0796 | .0823 | .0850 | .0877 | .0904 | .0931 | .0958 | .0985 | .1012 | .1039 | .1066 | .1093 | .1120 | .1147 | .1174 | .1201 | .1228 | .1282 | .1336 | 40 |
| 50 | .0518 | .0570 | .0623 | .0675 | .0727 | .0779 | .0806 | .0833 | .0859 | .0886 | .0912 | .0939 | .0966 | .0993 | .1020 | .1047 | .1074 | .1101 | .1128 | .1155 | .1182 | .1209 | .1263 | .1318 | 50 |
| 60 | .0509 | .0560 | .0611 | .0662 | .0713 | .0765 | .0790 | .0816 | .0842 | .0868 | .0894 | .0920 | .0946 | .0972 | .0997 | .1023 | .1049 | .1075 | .1101 | .1127 | .1153 | .1179 | .1231 | .1283 | 60 |
| 70 | .0500 | .0550 | .0600 | .0650 | .0700 | .0751 | .0776 | .0802 | .0827 | .0853 | .0878 | .0893 | .0919 | .0944 | .0969 | .1004 | .1029 | .1055 | .1080 | .1106 | .1131 | .1157 | .1208 | .1259 | 70 |
| 80 | .0491 | .0540 | .0589 | .0638 | .0687 | .0737 | .0761 | .0785 | .0810 | .0835 | .0860 | .0885 | .0910 | .0935 | .0960 | .0985 | .1010 | .1035 | .1060 | .1085 | .1110 | .1135 | .1185 | .1236 | 80 |
| 90 | .0482 | .0530 | .0578 | .0626 | .0674 | .0723 | .0747 | .0772 | .0796 | .0821 | .0845 | .0870 | .0895 | .0920 | .0944 | .0969 | .0993 | .1017 | .1041 | .1065 | .1089 | .1113 | .1163 | .1212 | 90 |
| 100 | .0473 | .0521 | .0568 | .0615 | .0662 | .0710 | .0733 | .0757 | .0781 | .0805 | .0829 | .0853 | .0877 | .0901 | .0925 | .0949 | .0973 | .0997 | .1021 | .1045 | .1069 | .1093 | .1141 | .1190 | 100 |
| 110 | .0465 | .0511 | .0557 | .0604 | .0650 | .0697 | .0720 | .0744 | .0767 | .0791 | .0814 | .0838 | .0861 | .0885 | .0908 | .0932 | .0955 | .0978 | .1001 | .1025 | .1049 | .1073 | .1121 | .1169 | 110 |
| 120 | .0458 | .0503 | .0548 | .0593 | .0638 | .0684 | .0707 | .0730 | .0753 | .0776 | .0799 | .0822 | .0845 | .0868 | .0891 | .0915 | .0938 | .0962 | .0985 | .1009 | .1034 | .1057 | .1103 | .1149 | 120 |
| 130 | .0449 | .0493 | .0538 | .0583 | .0628 | .0673 | .0695 | .0718 | .0741 | .0764 | .0787 | .0810 | .0833 | .0856 | .0878 | .0900 | .0923 | .0946 | .0969 | .0992 | .1015 | .1038 | .1084 | .1130 | 130 |
| 140 | .0441 | .0485 | .0529 | .0573 | .0617 | .0662 | .0684 | .0707 | .0729 | .0752 | .0774 | .0797 | .0819 | .0842 | .0864 | .0886 | .0908 | .0931 | .0953 | .0976 | .0998 | .1021 | .1066 | .1111 | 140 |
| 150 | .0433 | .0476 | .0519 | .0562 | .0606 | .0650 | .0672 | .0694 | .0716 | .0738 | .0761 | .0783 | .0805 | .0827 | .0849 | .0872 | .0894 | .0916 | .0938 | .0960 | .0982 | .1004 | .1048 | .1092 | 150 |
| 160 | .0426 | .0468 | .0511 | .0554 | .0597 | .0640 | .0660 | .0680 | .0701 | .0722 | .0743 | .0764 | .0785 | .0806 | .0827 | .0858 | .0880 | .0901 | .0923 | .0944 | .0966 | .0987 | .1030 | .1074 | 160 |
| 170 | .0419 | .0461 | .0503 | .0545 | .0587 | .0630 | .0651 | .0673 | .0694 | .0716 | .0737 | .0759 | .0780 | .0802 | .0823 | .0844 | .0865 | .0886 | .0907 | .0929 | .0950 | .0972 | .1014 | .1057 | 170 |
| 180 | .0412 | .0453 | .0494 | .0536 | .0578 | .0620 | .0641 | .0662 | .0683 | .0704 | .0725 | .0746 | .0767 | .0788 | .0809 | .0830 | .0851 | .0872 | .0893 | .0914 | .0935 | .0956 | .0998 | .1041 | 180 |
| 190 | .0406 | .0446 | .0487 | .0528 | .0569 | .0610 | .0630 | .0650 | .0670 | .0691 | .0712 | .0733 | .0754 | .0775 | .0796 | .0817 | .0837 | .0857 | .0878 | .0899 | .0920 | .0941 | .0983 | .1025 | 190 |
| 200 | .0400 | .0440 | .0480 | .0520 | .0560 | .0601 | .0621 | .0642 | .0662 | .0683 | .0703 | .0724 | .0744 | .0765 | .0785 | .0805 | .0825 | .0846 | .0866 | .0887 | .0907 | .0928 | .0969 | .1010 | 200 |
| 250 | .0370 | .0407 | .0445 | .0483 | .0521 | .0559 | .0578 | .0597 | .0616 | .0635 | .0654 | .0673 | .0692 | .0711 | .0720 | .0749 | .0767 | .0786 | .0805 | .0824 | .0843 | .0862 | .0900 | .0938 | 250 |
| 300 | .0344 | .0379 | .0414 | .0450 | .0486 | .0522 | .0539 | .0556 | .0574 | .0592 | .0610 | .0628 | .0646 | .0664 | .0682 | .0700 | .0717 | .0734 | .0752 | .0770 | .0788 | .0806 | .0842 | .0878 | 300 |
| 350 | .0325 | .0358 | .0391 | .0424 | .0457 | .0490 | .0506 | .0522 | .0538 | .0555 | .0572 | .0589 | .0606 | .0623 | .0640 | .0657 | .0674 | .0690 | .0707 | .0723 | .0740 | .0756 | .0789 | .0823 | 350 |
| 400 | .0308 | .0338 | .0368 | .0399 | .0430 | .0461 | .0476 | .0491 | .0506 | .0522 | .0538 | .0554 | .0570 | .0586 | .0612 | .0618 | .0634 | .0649 | .0665 | .0680 | .0696 | .0711 | .0743 | .0774 | 400 |
| 450 | .0291 | .0320 | .0349 | .0378 | .0407 | .0436 | .0450 | .0465 | .0479 | .0494 | .0508 | .0523 | .0537 | .0552 | .0566 | .0580 | .0595 | .0610 | .0626 | .0641 | .0656 | .0671 | .0701 | .0732 | 450 |
| 500 | .0275 | .0302 | .0329 | .0357 | .0385 | .0413 | .0427 | .0441 | .0455 | .0469 | .0483 | .0497 | .0511 | .0525 | .0539 | .0553 | .0567 | .0581 | .0595 | .0609 | .0623 | .0637 | .0665 | .0694 | 500 |
| 550 | .0262 | .0288 | .0314 | .0340 | .0366 | .0393 | .0406 | .0419 | .0432 | .0445 | .0458 | .0471 | .0485 | .0499 | .0513 | .0526 | .0539 | .0554 | .0567 | .0581 | .0594 | .0607 | .0633 | .0660 | 550 |
| 600 | .0250 | .0274 | .0299 | .0324 | .0349 | .0374 | .0386 | .0398 | .0410 | .0423 | .0436 | .0449 | .0462 | .0475 | .0488 | .0501 | .0513 | .0525 | .0538 | .0551 | .0564 | .0577 | .0603 | .0629 | 600 |

COIN-COUNTING AND WRAPPING MACHINE.

We have been favored by Mr. Edward Van Winkle, Flat Iron Building, Madison Square, New York, with particulars of a unique machine for the rapid, accurate counting and wrapping of coins, invented by C. S. Batdorf: which is destined to rank as a labor-saving device in the business world with the typewriter and calculating machine. The history of previous attempts and failures along this special line is very interesting and profitable reading; as also, is the detailed account of the mechanical operations which result in the accurate registration and delivery of the coins in strongly-wrapped parcels—all done automatically, and withal in a very simple manner.

A complete outfit for the counting and wrapping of coin consists of a coin sorter, and five machines, each adjusted to count and wrap pennies, nickels, coppers, five-cent pieces, dimes, quarters and half dollars respectively. All machines are identical, with the exception of the coin conduit, indicator, paper feed rolls and the driving coin rolls.

Each machine counts and wraps at the rate of seven coins a second, or four hundred and twenty coins (8 to 12 bundles) in one minute. The immense saving of labor is at once realized by making a comparison to hand labor, which can as a maximum, providing no error in count occurs, count and wrap only one bundle per minute. This machine, therefore, will do the work of from eight to twelve men with hand labor, without taking into consideration the loss in time if a miscount is found. The above speed is limited only by the examination of the coin by the operator, as they are fed into the machine from the table upon which they were first deposited.

Experience has proved that three hundred coins examined per minute is a safe and conservative limit which should be expected from the average operator.

It does not require any special knowledge of machinery to operate the machine; a small boy can run it as well as an adult.

The machine is operated by an electric motor of the General Electric type, and since it consumes but 3-10ths of an ampere at 110 volts, it is easily attachable to any standard light socket by means of a connection plug. It is started and stopped by the turn of a button switch.

The length of the package is determined by the thickness of the coin, which varies considerably. The crimp is always brought up tight to the coins by the crimpers, which

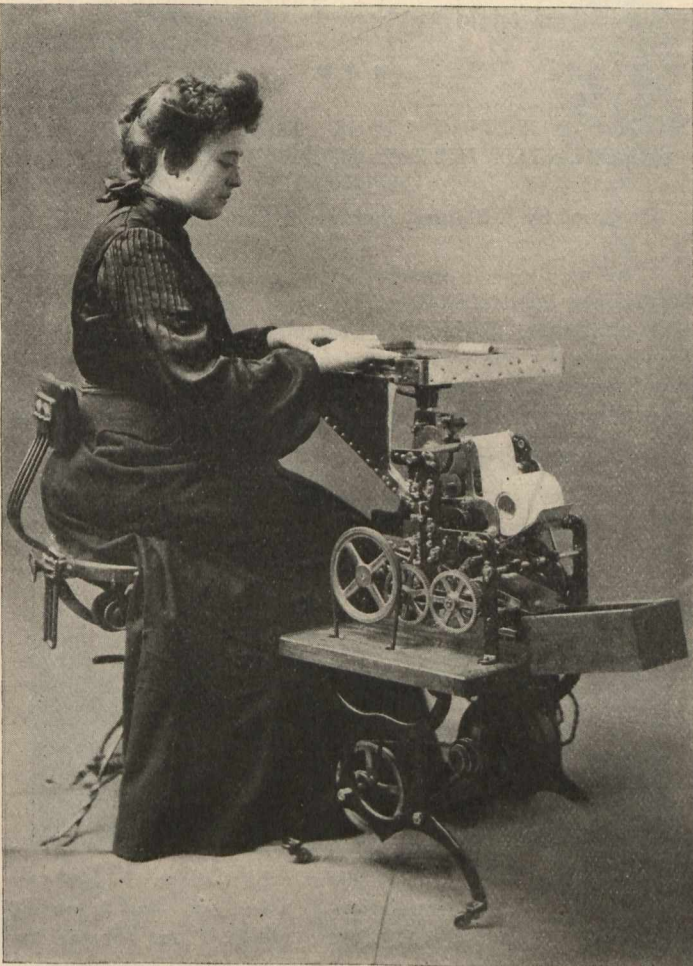


Fig. 1.—Coin-counting and Wrapping Machine.

are drawn together by means of a right and left-hand screw. When the crimp is complete the cartridge is thrown out of the machine into a box, which is detachable, and may be