(No Model.)

J. G. KURTZ.

CALCULATOR.

No. 356,140. Patented Jan. 18, 1887.

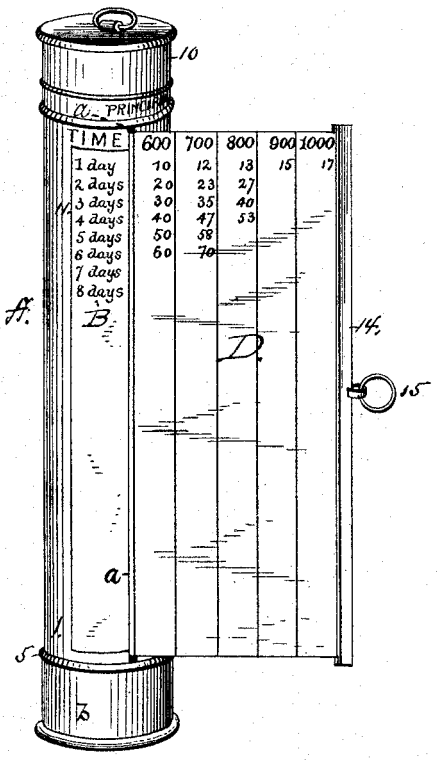

Fig. 1.

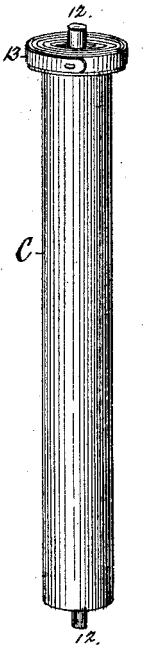

Fig. 2.

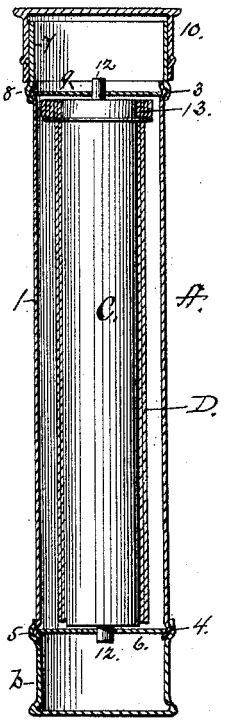

Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN G. KURTZ, OF MILTON, PENNSYLVANIA.

CALCULATOR.

SPECIFICATION forming part of Letters Patent No. 356,140, dated January 18, 1887.

Application filed April 13, 1886. Serial No. 198,737. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. KURTZ, a citizen of the United States of America, residing at Milton, in the county of Northumberland, in the State of Pennsylvania, have invented a new and useful Calculator, of which the following is a specification.

My invention has relation to improvements in calculators intended to compute interest, merchandise, &c.; and the object is to provide a mechanical device of compact construction whereby the interest for a given time on a stated principal at a given rate may be readily and accurately ascertained.

My invention therefore consists in the novel construction and arrangement of the notations and in the combination of the parts, as will be hereinafter fully described, and as is specifically pointed out in the claim made hereto.

I have fully illustrated my improved calculator in the accompanying drawings, wherein—

Figure 1 is a side view of the device. Fig. 2 is a view of the roller on which the sheet or strip winds, showing it removed from the cylinder and with a return-spring fixed thereto; and Fig. 3 is a vertical central sectional view of the device.

Referring to the drawings, the letter A designates the outside or inclosing cylinder. This is composed of a sheet-metal plate, 1, having beads 3 and 4 formed, respectively, in the upper and lower parts and then bent into a cylinder, with the vertical edges separated, as shown, to form the slot *a*, through which the principal and interest strip moves. The lower end of the cylinder sets in a bottom piece, *b*, which is formed with a groove, 5, in its rim, into which the bead 4 of the cylinder springs, and a disk, 6, sets in the cylinder in the groove of the bead, the disk having a hole to receive the bearing-pin 12 of the roller. On the upper end of the cylinder is fitted a ring, 7, having a groove, 8, at its lower edge, in which the bead 3 of the cylinder sets. Another disk, 9, is seated in the cylinder at this point, which is provided with a bearing-hole to receive the upper bearing-pin, 12, of the roller. A cap, 10, sets over the upper end, substantially as shown in the drawings. On the face of the cylinder, adjacent to the edge not covered by the drawn-out strip, is indicated in figures and letters the "time-table" B in days, months, and years, 11, in regular increasing succession from top to bottom, as shown in Fig. 1 of the drawings.

The letter C designates the roll which receives the strip on which the principal and interest tables are noted. This roll may be of any suitable material, and is provided with bearing-pins 12 in the ends to set in the holes of the disk of the cylinders, as heretofore indicated, and to the upper end of the roll is fixed a return-spring, 13, having one end secured to the spindle of the roll and the other end adapted to be fixed in the material of the plate of the cylinder, the purpose of the spring being to return the principal-strip when drawn out of the cylinder.

The letter D designates the sheet or strip of material on which the principal and interest are written or printed. One end of the strip is secured to the roll C, and the other or free end is secured to a stiffening-rod or cross-stick, 14, to which is attached a ring or thumb-piece, 15, whereby the strip or sheet may be manipulated as desired. On this strip or sheet are indicated, as headings over vertical columns, stated amounts of interest-bearing principals, and in increasing succession in the vertical columns below are stated the amounts of interests accruing on such principal, a designated and fixed amount being arranged to register with a stated time to be found on the same horizontal line in the time-table on the cylinder.

In the drawings I have designated the sheet or strip with but partial columns of principal and interest calculated thereon, the statements being made at six per cent. Other rates could with equal convenience be indicated.

The operation of ascertaining the amount of interest on a given principal for a given time may be readily perceived by one conversant with tables of this character. It may be briefly stated as follows: On a given principal stated on the sheet for a time stated on the table all that is required is to draw the sheet out to that column, and then on the line corresponding with the line on which the time is found will appear the amount of interest specified. For example, the interest on six hundred dollars at six per centum for six days is sixty cents. If the principal is made up of numerals not directly stated on a single column, and the in-

terest is to be computed for days, months, and years, the primary calculation is repeated and applied to the figures making up the principal, and then these amounts so ascertained are added—as, for example, the interest on fourteen hundred dollars for four days equals the interest on eight hundred dollars plus the interest on six hundred dollars, equals fifty-three cents plus forty cents, equals ninety-three cents. It will be seen that the device is of a convenient construction, which may be readily handled; that the parts are so conveniently arranged that the time-table and the principal and interest columns are brought directly adjacent to each other, and thus the relation and results quickly ascertained. The return-spring draws back the sheet or strip automatically and the hand draws it out, and it may be held at any given point.

What I claim as my invention, and desire to secure by Letters Patent, is—

The interest-calculating device herein described, comprising the cylindrical casing A, having slot 4 and end disks, 6 9, and a time-table, B, noted on the face of the cylinder adjacent to the slot, a roller, C, journaled in the cylinder and provided with a return-spring, and a principal and interest sheet or strip adapted to be withdrawn by the hand and returned by a spring, and having "principal" sums noted thereon at the heads of vertical columns and the interest computations noted thereunder and arranged on lines agreeing with the time stated on the table of the cylinder.

In testimony whereof I have hereunto set my hand in the presence of two attesting witnesses.

JOHN G. KURTZ.

Attest:
F. LOCH,
C. B. WILVERT.