No. 632,844. Patented Sept. 12, 1899.

A. E. H. PAYNE.

READY RECKONER.

(Application filed Mar. 28, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

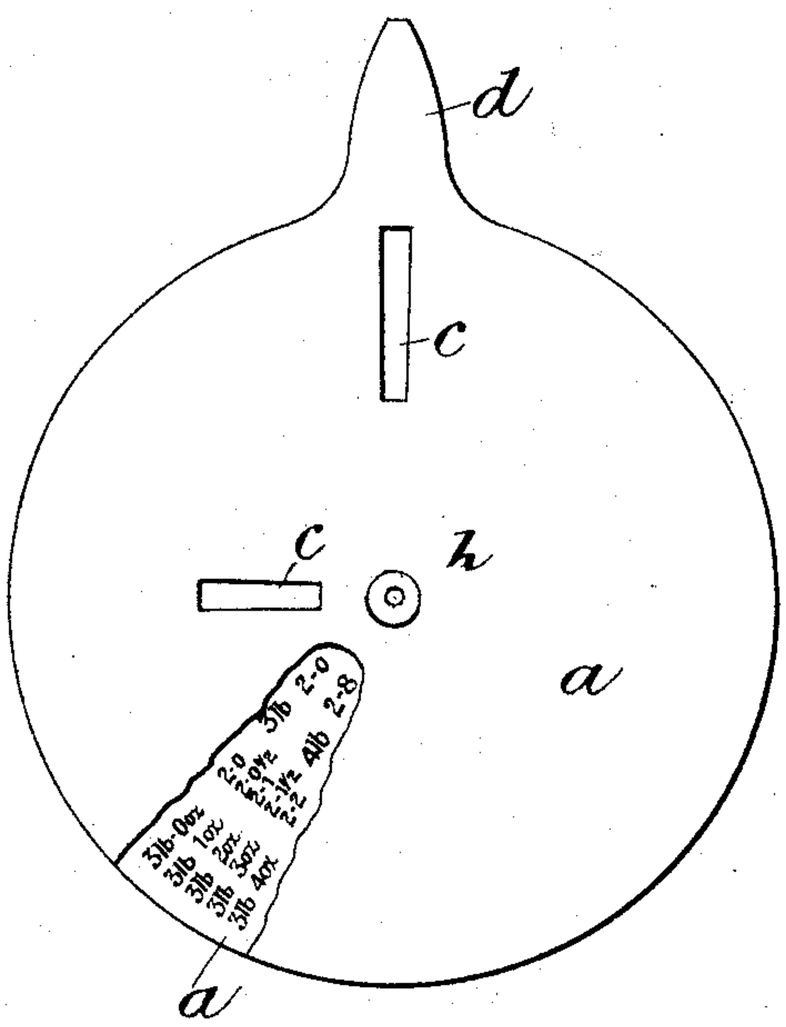


Fig. 2.

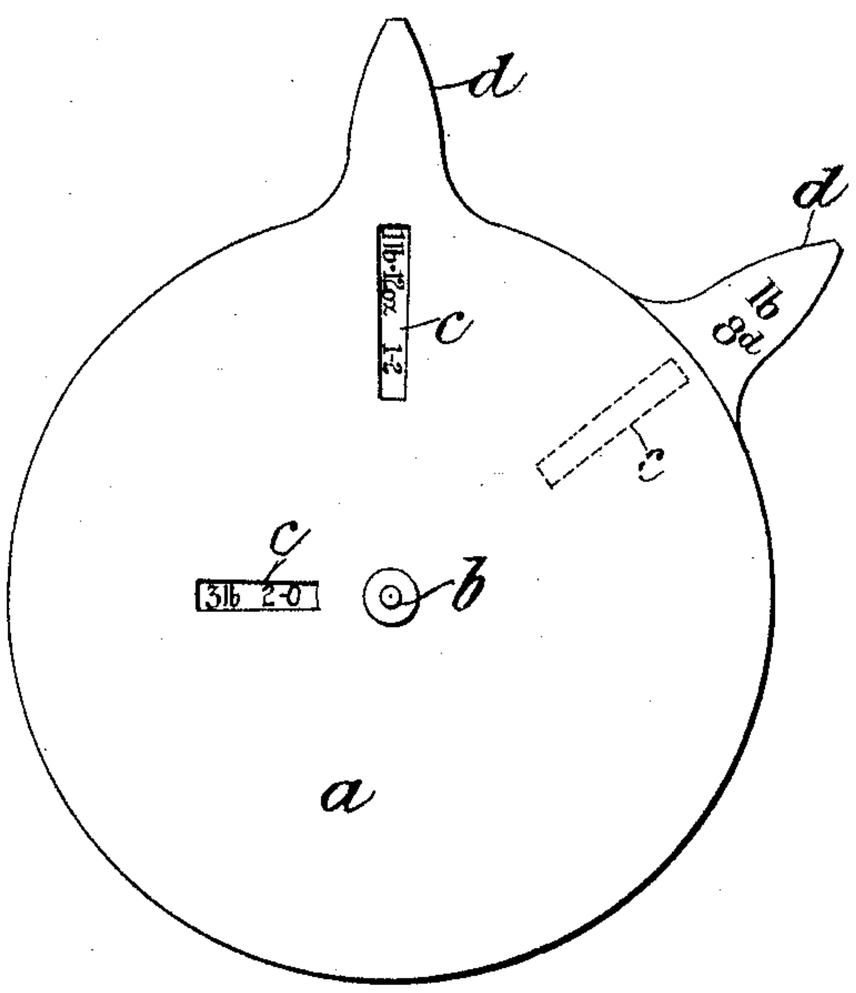


Fig. 4.

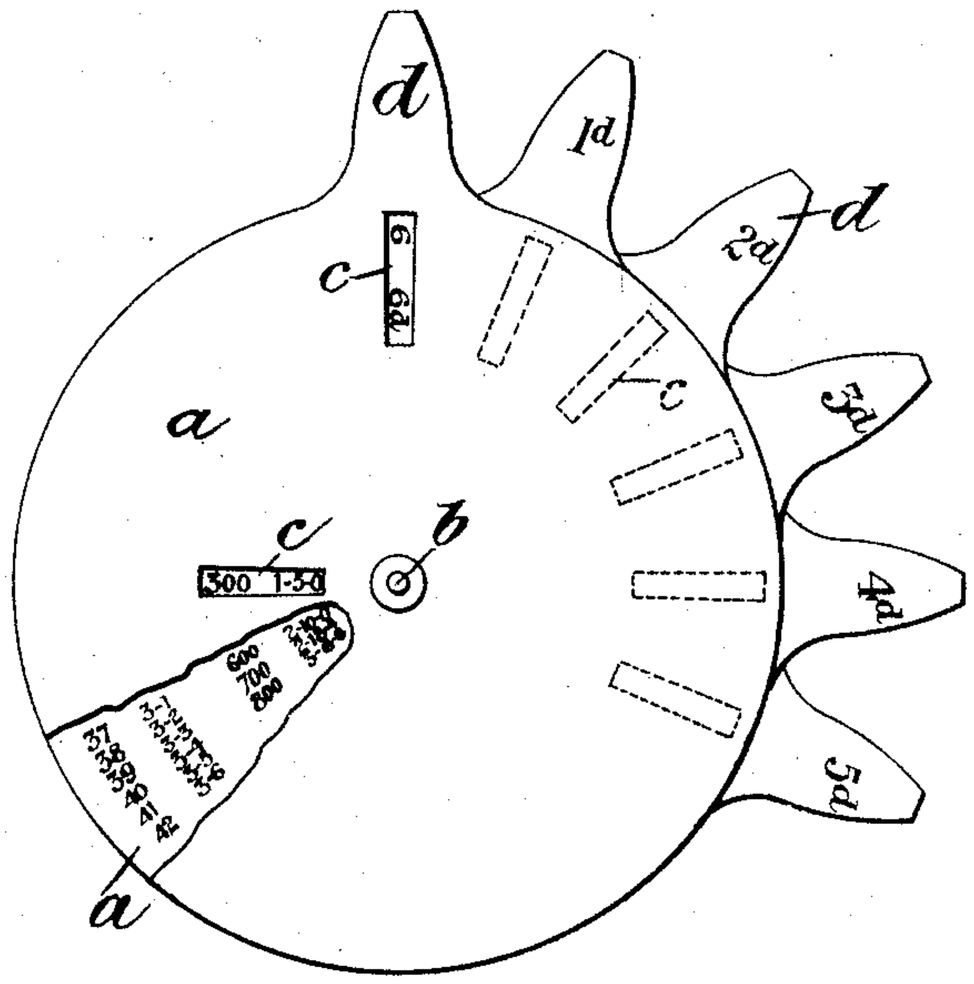
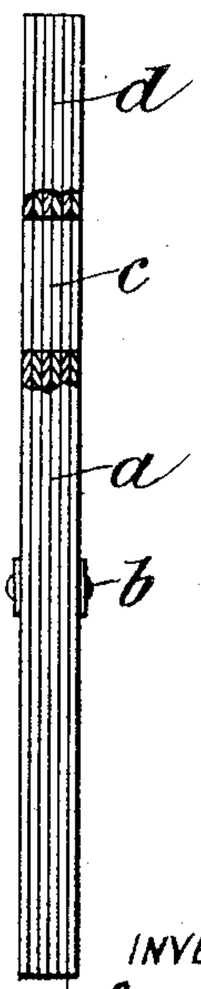


Fig. 5.



WITNESSES:
Ella L. Giles
Otto Munn

INVENTOR
Albert Edward Horlick Payne
BY
Richardson & R
ATTORNEYS

No. 632,844. Patented Sept. 12, 1899.

A. E. H. PAYNE.

READY RECKONER.

(Application filed Mar. 28, 1899.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 13.

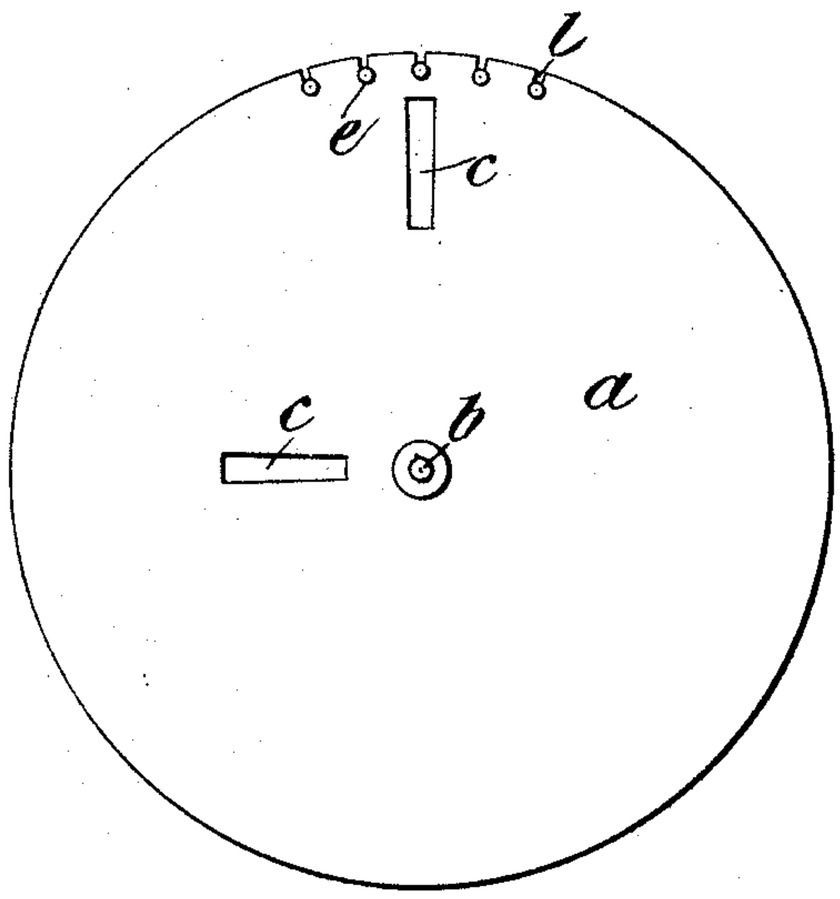


Fig. 14.

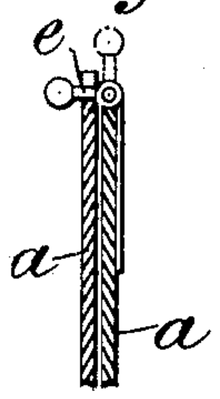


Fig. 15.

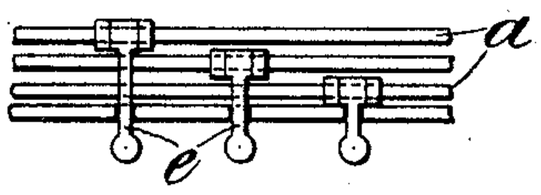
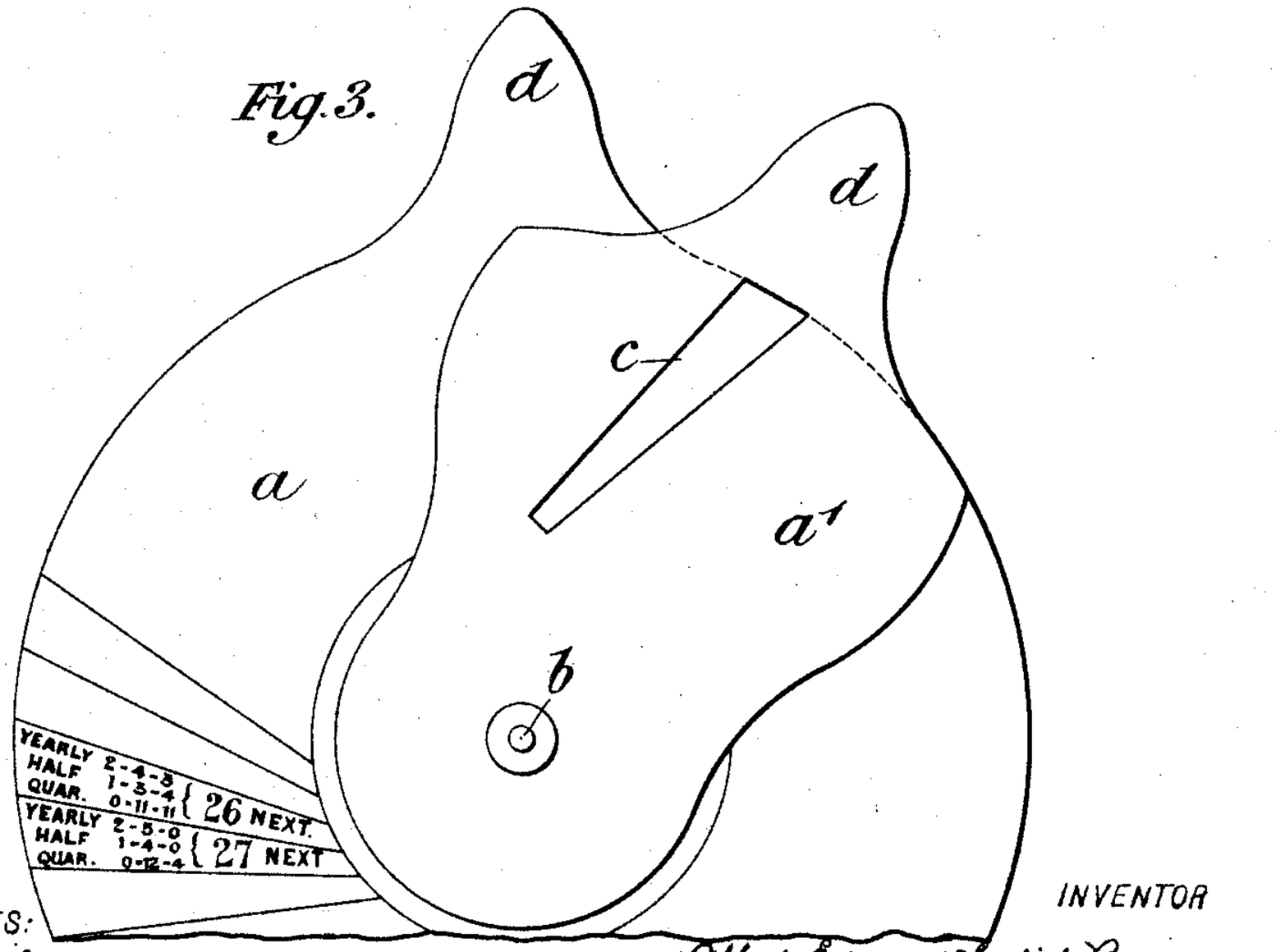


Fig. 3.



WITNESSES:
Ella L. Giles
Attorney

INVENTOR
Albert Edward Hamlick Payne
BY
Richardson
ATTORNEYS

No. 632,844. Patented Sept. 12, 1899.

A. E. H. PAYNE.

READY RECKONER.

(Application filed Mar. 28, 1899.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 6.

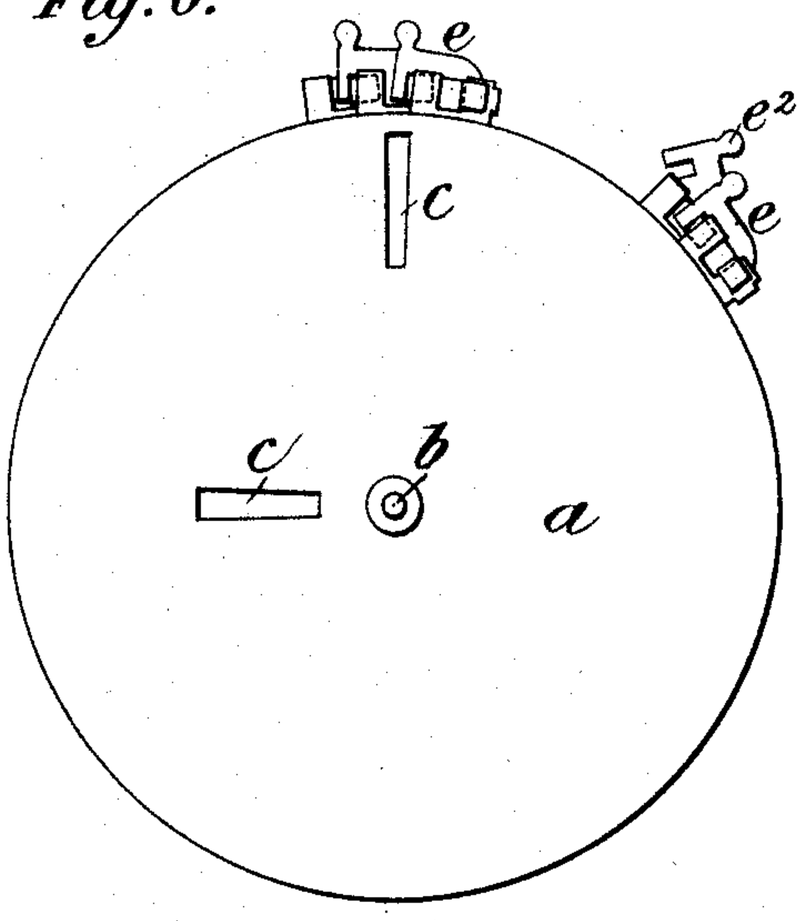


Fig. 7.

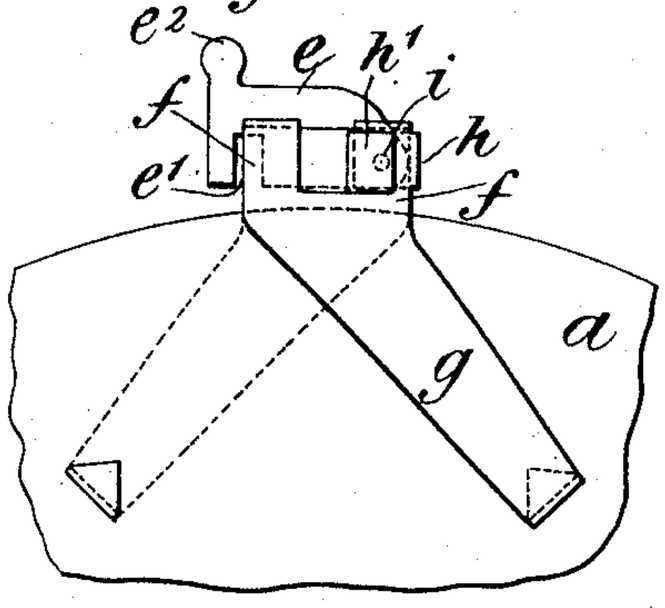


Fig. 8.

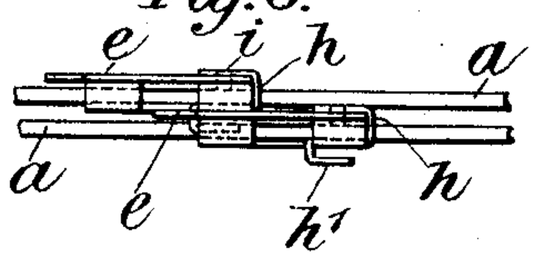


Fig. 10.

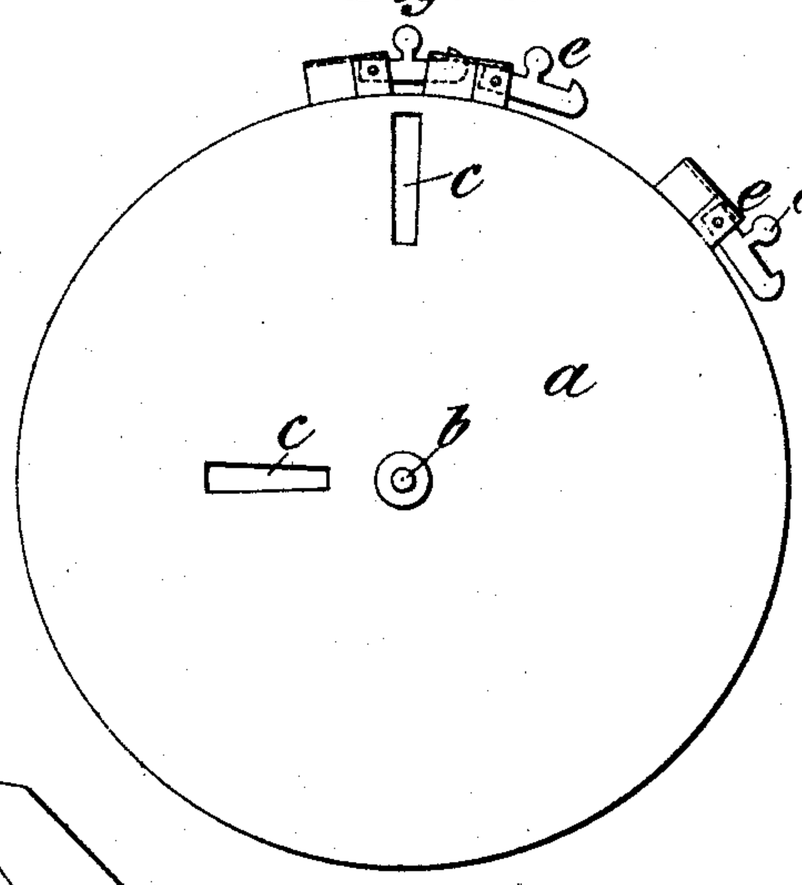


Fig. 9.

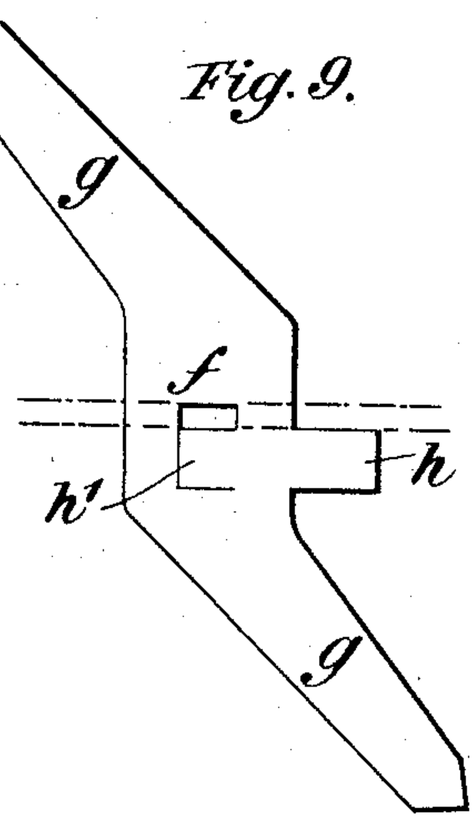


Fig. 12.

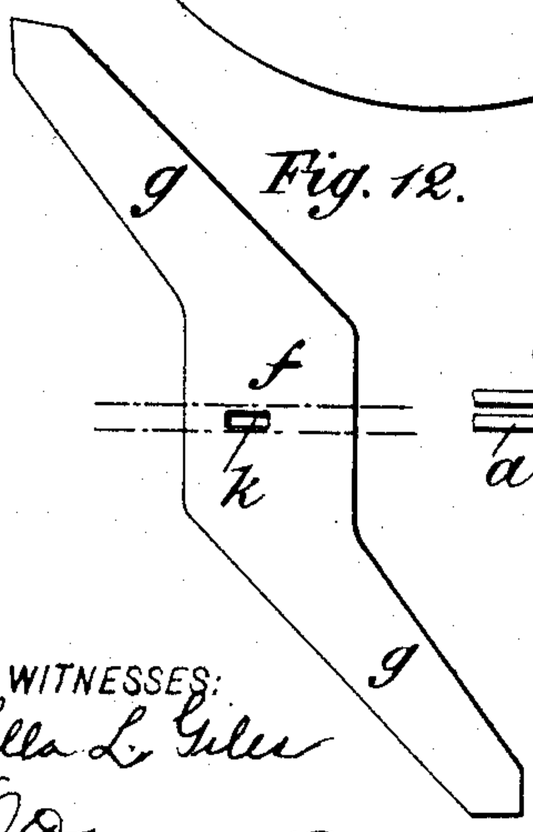
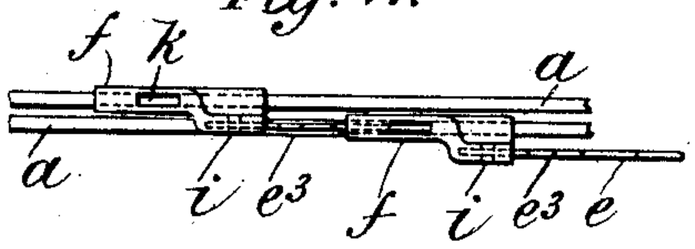


Fig. 11.



WITNESSES:
Ella L. Giles
Odrumk

INVENTOR
Albert Edward Henlick Payne
BY
Richardson & R.
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT EDWARD HORLICK PAYNE, OF BARNES, ENGLAND.

READY RECKONER.

SPECIFICATION forming part of Letters Patent No. 632,844, dated September 12, 1899.

Application filed March 28, 1899. Serial No. 710,812. (No model.)

To all whom it may concern:

Be it known that I, ALBERT EDWARD HORLICK PAYNE, builder's manager, a subject of Her Majesty the Queen of Great Britain and Ireland, residing at 127 White Hart Lane, Barnes, in the county of Surrey, England, have invented certain new and useful Improvements in or Relating to Ready Reckoners and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make use the same.

This invention relates to a novel and convenient construction and arrangement of ready-reckoning and kindred tables—such as insurance-tables, cab-fare tables, and the like—whereby the same are presented in a form which while neat, compact, and easy of reference is more durable and lasting and less liable to become damaged than the ordinary leaflet or book-form tables.

While susceptible of many slight modifications in construction and arrangement, my invention in every case (as will hereinafter appear) comprises a disk or tablet having tabulated matter arranged in a circle around its face and a sighting-shield provided with a view-aperture revoluble upon the face of said disk or tablet about a center coincident with that of the tabulated matter aforesaid, so that by relatively rotating the disk or tablet and the sighting-shield any desired portion of the tabulated matter may be brought opposite to and sighted or read off through the view-aperture in the said shield, which by isolating the portion of matter to be read off from the remainder gives greater prominence to such portion and makes reference easier and less trying to the eyes.

In one of its simplest arrangements the device may assume the form of two superposed disks connected together by a central pivot and each disk having tabulated matter arranged, as described above, around its inner face and a view-aperture through which the tabulated matter of the other disk may be sighted or read off. In this arrangement each tabulated disk forms a sighting-shield to the other, or a series of disks tabulated as described and each having a view-aperture may be superposed and connected by a central pivot, and the view-apertures of all the disks being adapted to coincide the tabulated matter of any disk of the series may be sighted or read off through the coincident view-apertures of the disks above, which latter would then collectively constitute the sighting-shield, or the sighting-shield may cover only a portion of the tabulated disk or tablet and may then be in the form of an arm having a view-aperture and pivotally connected with the center of the said disk or tablet.

In order that my invention may be clearly understood, I will now describe the same with reference to the annexed explanatory drawings, forming a part of this specification, wherein—

Figures 1 and 2 are face views of a ready-reckoning device constructed in accordance with my invention and comprising two superposed tabulated disks. Fig. 3 is a face view of a slight modification of the device represented in Figs. 1 and 2. Figs. 4 and 5 represent in face view and part sectional edge view, respectively, a ready reckoner constructed and arranged according to my invention and comprising a series of table-bearing disks. Fig. 6 represents in face view a slight modification of the device illustrated in Figs. 4 and 5, the table-bearing disks being furnished with interlocking catches. Figs. 7, 8, and 9 are details of these catches on an exaggerated scale. Fig. 10 is a face view of a similar device to Fig. 6, the construction of the interlocking catches being slightly modified. Figs. 11 and 12 are details on an exaggerated scale. Fig. 13 is a face view of a ready-reckoning or like device constructed according to my invention, wherein the table-bearing disks are provided with catches adapted to engage with the outer disk or cover in lieu of interlocking with each other. Figs. 14 and 15 are details of the catches on an exaggerated scale.

Similar letters refer to like parts in all the figures.

Referring to Figs. 1 and 2, *a a* are two disks, of card or other suitable material, connected together by and revoluble about the central pivot *b*. Around the inner face of each disk *a* tabulated matter is arranged in circles concentric with the pivot *b*, two circles of tabulated matter being here represented. *c c* are two view-apertures in each disk, one for each

circle of tabulated matter, through which apertures any portion of the tabulated matter of either disk may be sighted when the disks are relatively rotated about the pivot *c*. Each disk *a* thus forms a sighting-shield to the other. Rotation of the disks may conveniently be effected by means of the peripheral tabs *d*, provided or formed thereon, and each marked to indicate the nature of the table with which it corresponds. In the drawings there is shown on one of the disks, by way of example, a table giving the price of articles or goods of different weights at a certain rate per pound, and the tab *d* of each disk is marked to indicate the pound rate. It is obvious that if preferred only one of the disks *a* may be tabulated, in which case the other merely performs the function of a sighting-shield to the table-bearing disk, in which latter no view-apertures would need to be formed.

A slight modification of the foregoing is illustrated in Fig. 3, wherein the sighting-shield in lieu of covering the entire surface of the tablet covers only a portion thereof and takes the form of a sighting-arm *a'*, pivoted to the disk or table at *b*, and having a view-aperture *c*, through which the tabulated matter is sighted. This arrangement would be suitable where the disk or tablet is made of ivory, celluloid, or like material, which, if soiled, can easily be cleansed and to which therefore complete protection from dirt and the like is not so essential as where the tablet or disk is of card or similar material. In the example a portion of an insurance-table is shown, the tabulated matter indicating the amount of the yearly, half-yearly, and quarterly premium for one hundred pounds at death when a given age next birthday. Said arm *a'* may extend over one face only of the tablet *a*, or it may be duplicated or forked, so as to embrace both faces of the tablet *a*, which in this case would bear tabulated matter both back and front. A device of this description may conveniently be arranged to indicate cab-fares from certain starting-points to various places and would be a handy appendage to hall-tables, writing-tables, and the like.

Where the device comprises more than two table-bearing disks they are constructed, arranged, and referred to in a similar manner to the two-disk device, Figs. 1 and 2; but in this case it is absolutely essential that the sight-aperture *c* of all the disks *a* should be adapted to coincide or lie over one another, so that the tabulated matter of any desired disk may be read off through the coincident sight-apertures of the superposed disks, which collectively constitute the sighting-shield to the disk under reference. The coincidence of one set of the sight-apertures *c* is clearly shown in Fig. 5. When the sight-apertures *c* coincide, the tabs *d* should also coincide or lie above one another. The device represented in Figs. 4 and 5 is supposed to have six tabulated disks *a*, of which all except the two outer disks are imagined to be tabulated on both faces. The tabulated matter is shown by way of example as giving in pounds, shillings, and pence the total cost of articles or goods at a certain price per unit, and the tab of each disk bears the unit price upon which its corresponding table is calculated. In Fig. 4 the tabs *d* are shown as spread out fan fashion for selecting the table required for reference. This done, the tabs of all the disks above the table selected are gathered between the finger and thumb so as to lie over one another, when the view-apertures of these disks will coincide, thereby permitting the tabulated matter of the disk selected to be sighted and read off as the latter is rotated.

By a modification of the foregoing I may substitute catches for the tabs *d*, as shown in Fig. 6, the catch of one disk or tablet interlocking with that of the next. In Figs. 6, 7, and 8 the catches consist of hook-plates *e*, pivoted to attachments secured to the disks *a*, and each adapted to engage when depressed with a projection or catch-piece on the attachment of the adjacent disk.

I will now describe in detail a convenient and economical construction and arrangement of catch, as shown in the exaggerated details, Figs. 7, 8, and 9, although I do not confine or limit myself to this or any other particular construction of catch. Fig. 7 is an elevation of a single catch attached to a disk *a*. Fig. 8 is a plan of two of such catches interlocked, and Fig. 9 is a plan of the blank from which the main portion or disk attachment of the catch is bent. The body *f* of the blank has two arms *g* extending therefrom and inclining in reverse directions, which latter when the blank is folded over on itself along the dotted lines embrace the disk *a* on either side and are secured thereto by thrusting their ends through the disk and bending them over so that the body *f* aforesaid projects beyond the edge of the disk, as clearly seen in Fig. 7. The tongue *h* of the blank being bent around the end of the folded body *f*, as seen in Fig. 8, the end of the hook-plate *e* is pivotally mounted between said tongue and the body *f* on the pin *i*. The other tongue *h'* of the blank is bent over, as also clearly seen in Fig. 8, so as to lie parallel with the body *f* thereof, that portion at right angles to the body *f* being engaged by the slot *e'* of the hook-plate *e* of the adjacent disk, said hook-plate entering the space between the tongue *h'* and the body *f* and being thus held against lateral disengagement. Normally the catches are interlocked, and the view-apertures *c* of the disks are then coincident. Each catch is marked—say on the head e^2 of the hook-plate—to indicate the table with which it corresponds, and when any table is desired for reference its hook-plate is raised, so as to disengage it from the catch of the adjacent disk, as shown in Fig. 6, when the disk required for reference,

together with any that may be behind it, may be revolved upon the pivot *c*, the superposed disks remaining interlocked with their view-apertures coincident and forming a sighting-shield to the disk under reference.

Figs. 10, 11, and 12 illustrate a slightly-modified construction of the interlocking catches. As just described, the hook-plates *e* are raised for disengagement. In the modification now to be described they are depressed for the same object. In this case the blank, Fig. 12, would resemble that shown in Fig. 9, but without the tongues *h h'*. It would be folded over along the dotted lines and secured to the disk with its folded body *f* extending beyond the periphery thereof, as previously described, and the extremity of the hook-plate *e* would be mounted between the opposed sides of the folded body *f* at one end thereof on the pivot *i*. This end of the body *f* would, however, be slightly set out, as shown clearly in Fig. 11, so that the hook-plate *e* will lie in the plane of the adjacent disk *a*, and thus enter between the sides of the body *f* on that disk and catch into the hole *k* therein without any strain. e^3 is a convenient projection by which the catch may be depressed for disengagement.

In the modification, Figs. 13, 14, and 15, the disk-catches *e* in place of interlocking with one another engage each with a notch *l* in the periphery of the outer disk *a* of the device, as clearly shown. When any catch *e* is turned up out of engagement with its notch *l*, as shown by the dotted lines, Fig. 14, that disk may be rotated independently of the others, which remain relatively locked against movement with their sight-apertures coincident and forming a sighting-shield to the disk under reference.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a ready reckoner or kindred device, the combination of two superposed disks revoluble upon one another about a central connecting-pivot, tabulated matter arranged in a circle around the inner face of each disk, and a view-aperture in each disk whereby any portion of the tabulated matter of the other may be sighted and read off from either side of the device on relatively rotating the disks, substantially as set forth.

2. In a ready reckoner or kindred device, the combination of a series of superposed disks revoluble about and connected by a central pivot, tabulated matter arranged in a circle about the face or faces of the disks, view-apertures in the disks adapted to coincide so that any portion of the tabulated matter of any disk may be sighted or read off through the coincident view-apertures of the disks above, and peripheral indicating and manipulating tabs or projections on the disks, said tabs lying over one another when the view-apertures coincide and thereby facilitating the placing and maintaining in coincidence of the view-apertures through which any disk has to be sighted, substantially as set forth.

3. In a ready reckoner or kindred device, the combination of the table-bearing disks connected by a central pivot, the view-apertures therein and a catch carried on the periphery of each disk all of said catches engaging a common disk whereby each disk is independently locked against relative movement, the sight-apertures of the different disks being coincident when the latter are locked by the catches aforesaid, so that when any disk is rotated for reference the necessary coincidence of the view-apertures of the disks above is assured, substantially as set forth.

4. In a ready reckoner or kindred device the combination of the series of superposed disks rotatable about a central connecting-pivot and provided with view-apertures, the tables carried by the disks and the catches on the peripheries of the latter, said catches being adapted to interlock with one another and thus hold any adjacent disks against relative movement, the view-apertures of interlocked disks being coincident, substantially as set forth.

5. In a ready reckoner or kindred device the combination of the series of superposed disks rotatable about a central pivot, the tables carried by the disks and a catch on the periphery of each disk engaging the adjacent disk, the sight-apertures of interlocked disks being coincident, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT EDWARD HORLICK PAYNE.

Witnesses:
A. E. ALEXANDER,
H. SPENCER CARTWRIGHT.