

980,391.

3 SHEETS--SHEET 1.

Fig. 1.

Witnesses:
Aline Farr
John H. Parker

Inventor:
Edward C. Altme
By MacLeod, Calver, Copeland,
+ Dike
Attorneys.

E. C. ALBREE.
COST ACCOUNTING SYSTEM.
APPLICATION FILED JUNE 8, 1908.

980,391.

Patented Jan. 3, 1911.

3 SHEETS-SHEET 2.

Fig. 2.

June 1, 1908

A'

30

36

37

F'

41

F'

B'

58

55

54

C'

15

FOR NO. OF HUNDRED FEET SUPPLIED READ FIGURE ABOVE THE PUNCH MARK

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

MRS. JOHN RANSOME.
36 CRAIGHILL STREET.
June 1, 1908

TO MALDEN GAS WORKS CO., DR.

Back Bills, \$ 9.60

For Gas supplied at 10c. per 100
cu. ft., less 10% discount if paid
on or before the 15th. . . . \$ 9.63

(See Table at top of Bill.)

Use this bill if paid ON or BEFORE the 15th of JUNE

53

52

51

50

49

48

47

46

45

44

43

42

41

40

39

38

37

36

35

34

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32

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24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

Read Above
Punch Mark

CASHIER'S COUPON

56

55

54

53

52

51

50

49

48

47

46

45

44

43

42

41

40

39

38

37

36

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21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

METER READ
MAY

52

51

50

49

48

47

46

45

44

43

42

41

40

39

38

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18

17

16

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14

13

12

11

10

9

8

7

6

5

4

3

2

1

METER READ
MAY

Witnesses:

Almie Tarr

John H. Parker

Inventor:

Edward C. Albree

by Macdonald, Calver, Copeland & Drake

Attorneys

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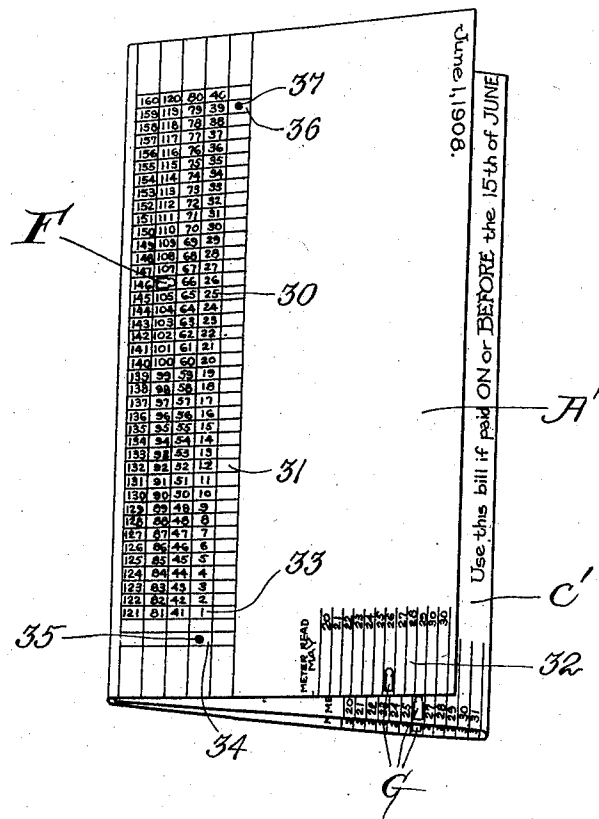


Fig. 3.

Witnesses:

Aline Tarr

John H. Parker

Inventor:

Edward C. Albree

By Marshall, Calkins, Copeland
& Dike

Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD C. ALBREE, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO ALBREE SELF FIGURING SYSTEM COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

COST-ACCOUNTING SYSTEM.

980,391.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed June 8, 1908. Serial No. 437,222.

To all whom it may concern:

Be it known that I, EDWARD C. ALBREE, citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Cost-Accounting Systems, of which the following is a specification, reference being had therein to the accompanying drawings.

My present invention has for its object to provide a labor saving device which may be employed in making out the bills for customers of companies dealing in commodities which are measured by meters located on the consumer's premises, such for instance as water, gas, electricity, etc. A bill for this purpose is shown and described in my application for United States Letters Patent filed January 11, 1908, Serial No. 410,433, but the device as shown and described in the said application is applicable only where the commodity is supplied at what is shown as a "flat" rate, that is, where no discount is made for prompt payment.

The present invention provides a bill which may be used when it is desired to give a discount for payment on or before a certain date. In the application just referred to, there is shown a bill which is given to the meter reader who superposes it upon a card known as the meter card and punches the two cards when in the superposed position at the reading of the meter. This records on the consumer's bill the amount of the commodity used and the amount of money due the company for it, thus obviating the necessity of making a subtraction and multiplying by the price. The meter reader then separates one portion of the bill and leaves the remainder of the bill with the consumer. If the consumer pays the bill to the meter reader, the bill is receipted and another portion is detached and returned to the cashier as the cashier's voucher.

My present invention provides a bill which makes it possible to use this system where a discount from the regular rate is given; and in addition to this advantage it possesses all the advantages described in the application above referred to.

The bills embodying my present invention not only save the labor and expense of figuring the price of the commodity and of mailing the bills to the consumers which was saved by the bill shown in my former ap-

plication, but further save the labor, expense and delay of figuring the price of the commodity at the discount rate, this last operation being performed without any labor additional to that required for the use of the bill described in my previous application hereinbefore referred to.

The invention will be fully understood from the following description taken in connection with the accompanying drawings, and the novel features are pointed out and clearly defined in the claims at the close of the specification.

In the drawings,—Figure 1 is the front face, and Fig. 2 is the back face of my improved bill. Fig. 3 shows the bill shown in Figs. 1 and 2 in folded condition.

It has not been thought necessary to show the meter reader's card and the meter card, one or both of which are commonly employed with my improved bill, as the said cards are shown and their operation and use is fully described in my application heretofore referred to, their use in connection with the bill herein described being identical in all respects. There is shown in the drawings a bill for use by a gas company for gas at the rate of \$1.00 per thousand feet with a discount of ten per cent. for payment before the fifteenth of the month. Of course similar bills may be used for other commodities, at other rates and upon other terms of payment.

Referring to the drawings and particularly to Figs. 1 and 2, it will be seen that the bill is divided into three parts and that these parts are differently printed on the front and back. The top part A which is blank on the face shown in Fig. 1 is the "Auditor's coupon". The part B next below it, is the "Bill at regular rate", and the bottom part C is the "Cashier's coupon for bill at regular rate". These parts are divided from each other by scoring and the bill is folded as shown in Fig. 3 ready for use when it is handed to the meter reader. On the back of the part A, is printed the form necessary for the auditor's coupon, and this part is designated A' in Fig. 2; on the back of the bill at regular rate B is printed the cashier's coupon for discount bill designated B' in Fig. 2; and on the back of the cashier's coupon for bill at regular rate C is printed the discount bill designated C'. The structure of these parts will now be described.

The bill at regular rate.—The bill at reg-

ular rate B is provided with the date 11, and the name and address of the consumer 12, which latter is printed or written upon the bill before it is handed to the meter reader.

5 Below the name and address, appears the legend 13 "To the Malden Gas Works Company, Dr." On the line next below this, are the words "Back bills" and a space 14 in which is to be entered at the office the
10 amount owing the company for gas previously used and still unpaid for. The next line says "For gas supplied at \$.10 per hundred cu. ft.", this being the rate without discount and opposite this line is a space 15 for the amount. Beneath the two spaces 14 and 15 is a space 16 for the total. The foregoing construction may be said to be a bill-form, to be filled out to give the consumer a statement of the condition of his account. At
20 some convenient place appears the legend "Use this bill if paid after the 15th." Near the top, is a field 17 divided into spaces of uniform size arranged in columns of equal height and numbered beginning with the
25 space 18 which is the third from the left hand margin of the column of spaces at the bottom of the field. The numbers in the said spaces of the field 17 are placed as if the bottom of the bill were at the left hand side of Fig. 1. The numbers in these spaces form an arithmetical series and indicate (in the case shown in the drawings) the number of
30 hundred feet of gas supplied; that is the numeral 1 indicates 100 feet, and the numeral 11 indicates 1,100 feet. In the drawing, four columns of forty numbered spaces each are shown so that the bill may be used to record any amount of gas up to 16,000 feet. The numbers are placed in the spaces next above
40 (*i. e.* to the right in Fig. 1) those to which they apply in order that they may not be obliterated by punching and near the field 17 is placed the legend "For number of hundred feet supplied read figure above the
45 punch mark". The bill at regular rate also contains another series of spaces 19 containing the numbers of the days of the month or such portion thereof as may be necessary so that by punching these spaces the meter
50 reader may indicate the day of the month on which the meter was read.

Cashier's coupon for bill at regular rate.—The cashier's coupon for bill at regular rate C has a field 20 divided into spaces which
55 register with the spaces of the field 17 on the bill at regular rate, when the cashier's coupon C and bill at regular rate B are folded together; but the numbers in the spaces of the field 20 contain figures which
60 represent the value in dollars and cents of the gas indicated by the numeral in the space of the field 17 with which each space of the field 20 registers. Thus, .10 appears in the third space from the left of the top row of
65 spaces (viewing the bill as in Fig. 1), this

being the space which registers with the space of the field 17 which contains the number 1. Each of the numbers in the spaces of the field 20 of the cashier's coupon for bill at regular rate C is, therefore, ten times that of the number in the corresponding space in the field 17. Had the price per unit been different, the numerals in the spaces of the field 20 would have differed correspondingly.

Auditor's coupon.—The auditor's coupon A' (see Fig. 2) is printed on the back of that part of the bill which is marked A in Fig. 1. It is provided with a field 30 of uniform spaces exactly like the field 17 on the bill at regular rate B except that the said field 30 is provided with an additional column of spaces 31 said spaces 31 being left blank. The said extra column of spaces 31 is not essential to the operation of my improved bill but affords a convenient means of locating the starting dot 37 which will be presently described more fully. The numbers in the spaces of the field 30 are identical with those in the spaces of the field 17, but they are placed in the spaces as if the right hand edge of the card or slip, as seen in Fig. 2, were the bottom, and begin at the upper right hand corner space 33 of the numbered spaces, so that the numbers register properly when the bill is folded. In the space 34 is located a dot 35 known as the lower starting dot and in the space 36 a second dot 37 known as the upper starting dot. These dots are for the purpose of assisting the meter reader to locate the bill properly with relation to the card with which the bill is punched; and the purpose and mode of operation of these dots have been fully explained in my previous application heretofore referred to. The auditor's coupon is also provided with a series of spaces 32 containing the number of so many of the days of the month as appear in the series of spaces 19 on the bill at regular rate B, and the said spaces 32 are located to register with the spaces 19 of the bill at regular rate B and the spaces 59 of the discount bill C', when the bill is folded.

Cashier's coupon for discount bill.—The cashier's coupon for discount bill B' is exactly like the cashier's coupon for bill at regular rate except that the numbers in the spaces of the field 41 are each 10% less than the corresponding numbers of the cashier's coupon for bill at regular rate C, and the numbers of the field 41 are arranged as if the right hand edge of the bill as seen in Fig. 2 were the bottom of the cashier's coupon for discount bill. Thus the space 42 of the field 41 contains .09 instead of .10 as in the case of the space 21 of the field 20; and the space 43 contains 4.95 instead of 5.00 as in the case of space 22 of the field 20.

Discount bill.—The discount bill C' is of the same general form as the bill at regul-

lar rate B, but as seen in Fig. 2 is bottom side up, this being for proper registration. It is provided with a space 51 for the date, another 52 for the name and address of the customer, the company's name 53, and the space 54 for the amount of the back bills. The next space 55 is labeled "For gas supplied at 10c. for 100 cu. ft. less 10% discount if paid on or before the 15th." The next space 58 is for the total. There also appears on the bill the legend "Use this bill if paid on or before the 15th of June." The discount bill also bears a field 56 of numbered spaces identical in all respects with the numbered portion of the field 30 on the auditor's coupon A'. The discount bill is also provided with a series of spaces 59 containing the number of so many of the days of the month as appear in the series of spaces 19 and 32 on regular rate bill B and the reverse side A' of the auditor's coupon respectively. All of the fields of numbered spaces register when the bill is folded so that a punch will make a mark in a similarly located space of each field at the same time. The reverse side of the bill; that is, the side shown in Fig. 2, is preferably printed in red ink while the front face of the bill is preferably printed in black ink so that the black ink side shall indicate the price at the regular rate, while the red ink side shall indicate the price after the discount for prompt payment has been made.

The use of my improved discount bill is exactly the same as that shown in my application heretofore mentioned except in so far as it provides means for figuring the discount on the bill. When the meter reader reads the meter, he punches the bill in its folded condition as shown at F and G, Fig. 3, said bill being usually superposed on a meter or reader's card, said punch marks also appearing at various places and also marked F and G on the other figures. These punch marks indicate that 10,700 feet of gas have been consumed as seen from the field 30 on the reverse side A' of the auditor's coupon A; the field 17 on the bill at regular rate B and the field 56 on the discount bill C'. It also shows that the consumer owes \$10.70 for the gas at the regular rate (see the cashier's coupon C) or \$9.63 at the discount rate (see the cashier's coupon for discount bill B'). If the consumer pays for the gas on the spot, the discount bill C' is filled out with the amount \$9.63 and the bill is receipted by the reader who turns in the money to the cashier with the cashier's coupon for discount bill B', turning in the auditor's coupon A to the auditor. If the bill is not paid before the 15th of the month, the payment must be made at the regular rate and for the amount \$10.70 indicated on the cashier's coupon for bill at regular rate C.

When the bill is paid at the office, the proper form indicated by the color is used according to the time when the payment is made, whether before or after the 15th of the month, no black coupons being received by the cashiers before the 15th and no red ones after the 15th.

I claim as my invention:

1. The improved bill provided with three or more fields of spaces of uniform size located to register with each other when the bill is folded, the spaces of one of said fields being provided with numerals forming an arithmetic series, another of said fields being provided with numerals each of which is a multiple of the numeral in the registering space of the first mentioned field, and another of said fields being provided with numerals each of which is also a multiple of the numeral in the registering space of the first mentioned field, one factor of the multiples for the numbers of said two last mentioned fields being different for each field but the same for all the numbers of any field.

2. The improved bill comprising a card having thereon a bill-form provided with spaces and with legends therefor said card being also provided with three or more fields of spaces of uniform size located to register with each other when the bill is folded, the spaces of one of said fields being provided with numerals forming an arithmetic series, another of said fields being provided with numerals, each of which is a multiple of the numeral in the registering space of the first mentioned field, and another of said fields being provided with numerals each of which is also a multiple of the numeral in the registering space of the first mentioned field, one factor of the multiples for said two last mentioned fields being different for each field but the same for all the numbers of each field.

3. The improved bill comprising a card having thereon three or more fields of spaces of uniform size located to register with each other when the said card is folded, the spaces of one of said fields being provided with numbers forming an arithmetic series, the spaces of another of said fields being provided with numbers each of which is the number in the registering space in the first mentioned field multiplied by a constant, and the spaces of another of said fields being provided with numbers each of which is the number in the registering space of the first mentioned field multiplied by another constant.

4. The improved bill comprising a card having thereon a bill-form provided with spaces and with legends therefor said card being also provided with three or more fields of spaces of uniform size located to register with each other when the bill is folded, one

of said fields being located on the front face of the card and having the spaces thereof provided with numerals forming an arithmetic series, another of said fields being located also on the front face of the card and having the spaces thereof provided with numerals each of which is a multiple of the numeral in the registering space of the first mentioned field, and another of said fields being located on the back face of said card and having the spaces thereof provided with numerals each of which is also a multiple of the numeral in the registering space of the first mentioned field, one factor of the multiples for said last two mentioned fields being different for each field but the same for all the numbers of any one field said first and last mentioned fields being on opposite faces of the same portion of the card.

5. The improved bill comprising a card having thereon three or more fields of spaces of uniform size located to register with each other when the bill is folded, one of said fields being located on the front face of the card and having the spaces thereof provided with numerals forming an arithmetic series, another of said fields being located also on the front face of the card and having the spaces thereof provided with numerals each of which is the number in the registering space in the first mentioned field multiplied by a constant, and another of said fields being located on the back face of said card and the spaces thereof provided with numerals each of which is the number in the

registering space of the first mentioned field multiplied by another constant said first and last mentioned fields being on opposite faces of the same portion of the card.

6. The improved bill comprising a card having on each face thereof a bill-form provided with spaces and with legends therefor said card being also provided with three or more fields of spaces of uniform size located to register with each other when the bill is folded, one of said fields being located on the front face of the card and having the spaces thereof provided with numerals forming an arithmetic series, another of said fields being located also on the front face of the card and having the spaces thereof provided with numerals each of which is a multiple of the numeral in the registering space of the first mentioned field, and another of said fields being located on the back face of said card and having the spaces thereof provided with numerals each of which is also a multiple of the numeral in the registering space of the first mentioned field, one factor of the multiples for said last two mentioned fields being different for each field but the same for all the numbers of each field said first and last mentioned fields being on opposite faces of the same portion of the card.

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

EDWARD C. ALBREE.

Witnesses:

GEORGE P. DIKE,

ALICE H. MORRISON.