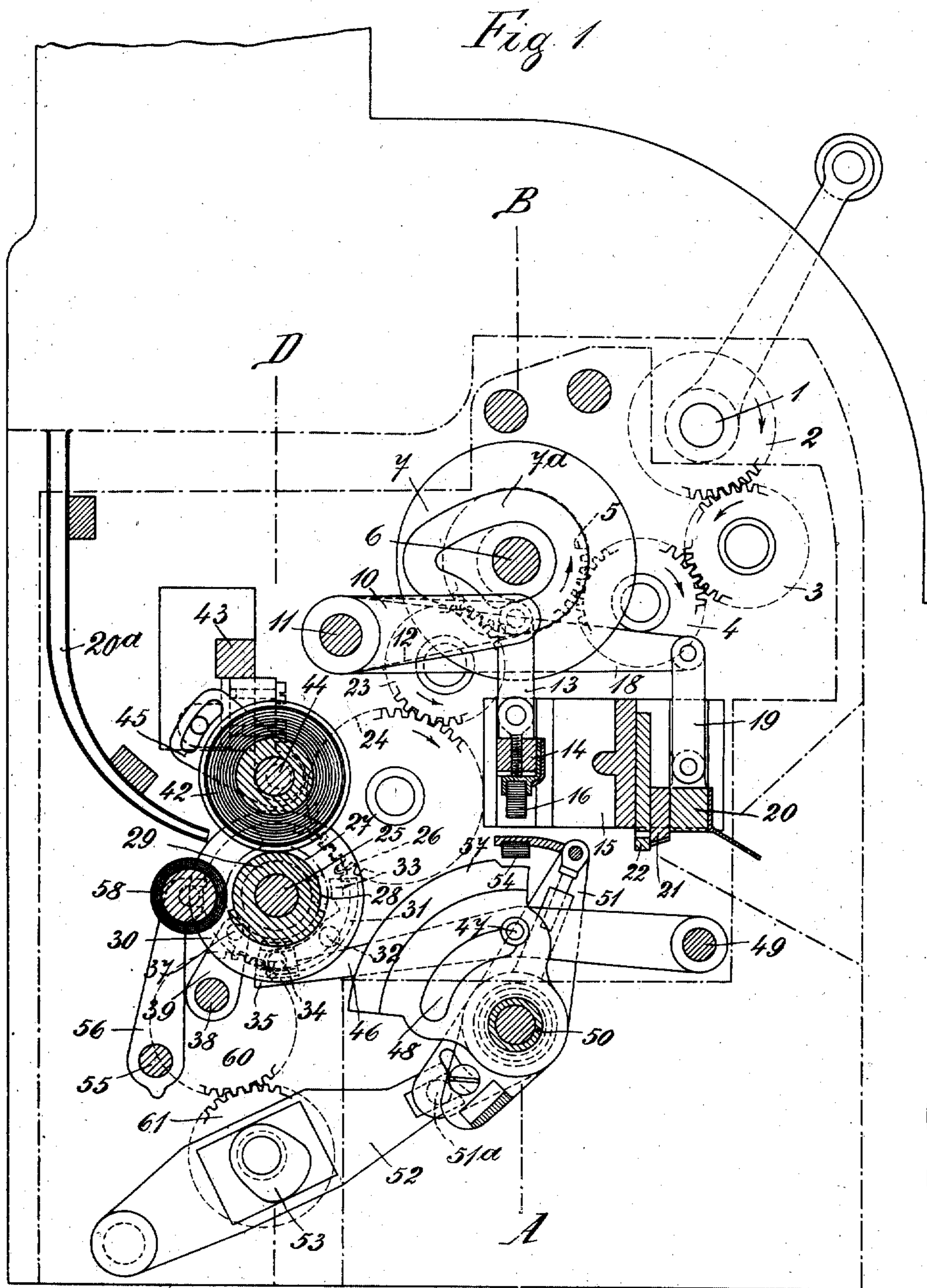


C. TROG.  
CASH REGISTER.  
APPLICATION FILED NOV. 25, 1907.

995,501.

Patented June 20, 1911.

4 SHEETS—SHEET 1.



Witnesses:  
Paul Wollenberg  
Emil Kayser

Inventor:  
Carl Trog  
by *Robert Kipler*  
Attorney

995,501.

Patented June 20, 1911.

4 SHEETS—SHEET 2.

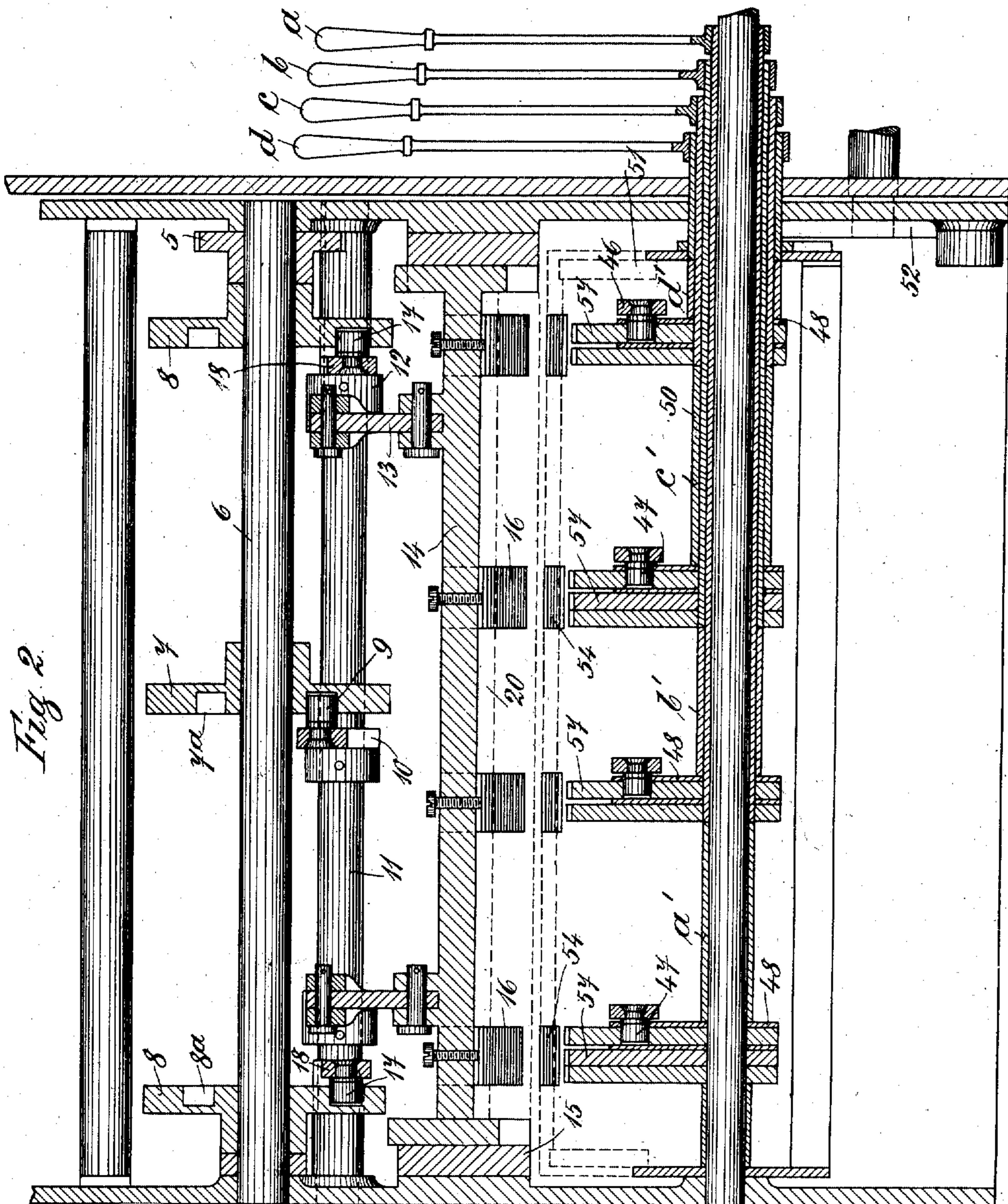


Fig. 2.

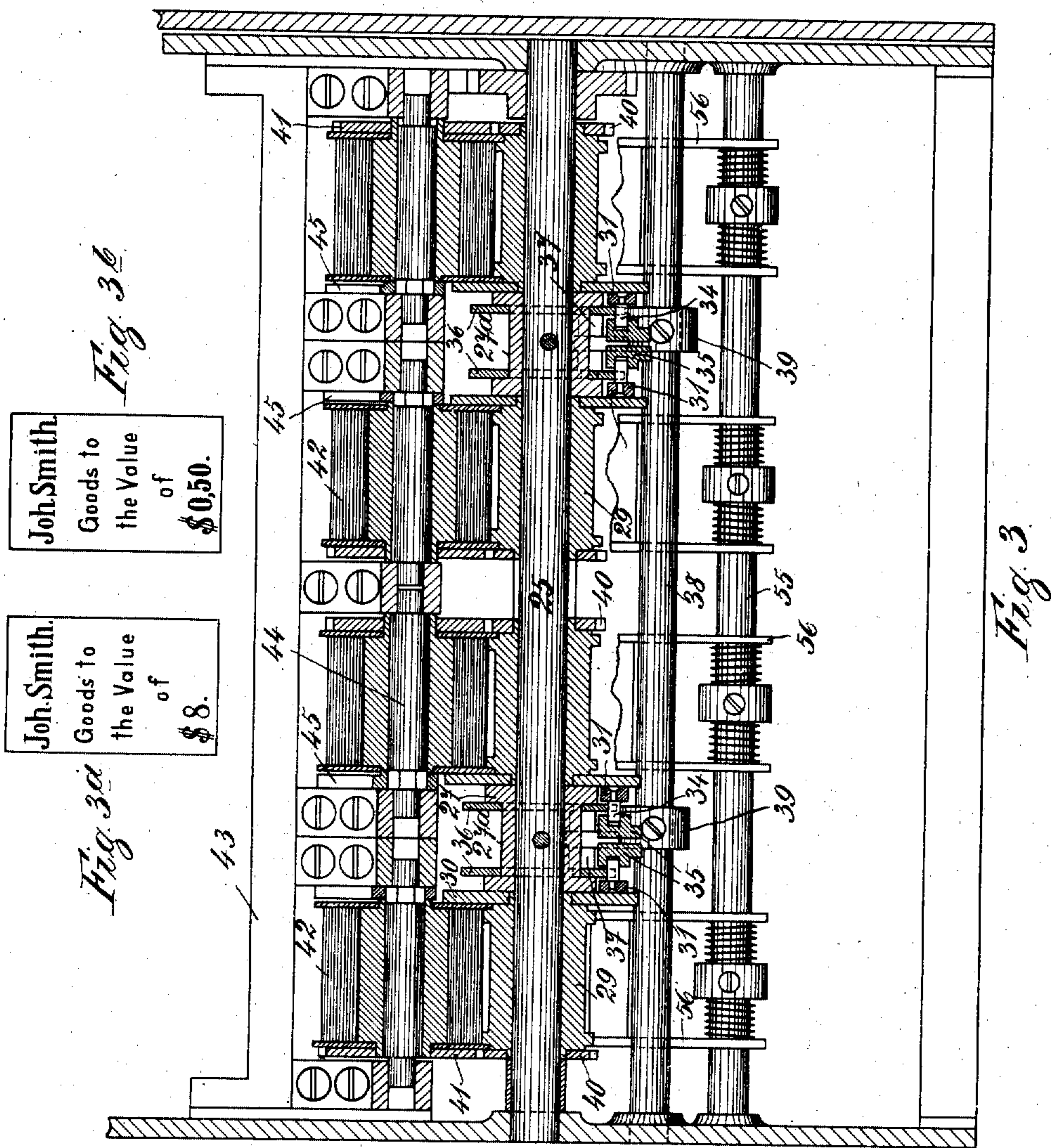
Witnesses:  
Paul Wollenberg  
Emil Kayser.

Inventor:  
Carl Trog  
by Robert K. K. K.  
Attorney

995,501.

C. TROG.  
CASH REGISTER.  
APPLICATION FILED NOV. 25, 1907.

Patented June 20, 1911.  
4 SHEETS—SHEET 3.



Witnesses:  
Paul Wollenberg  
Emil Kayser.

Inventor:  
Carl Trog.  
by *P. W. S. S. S.*  
Attorney.

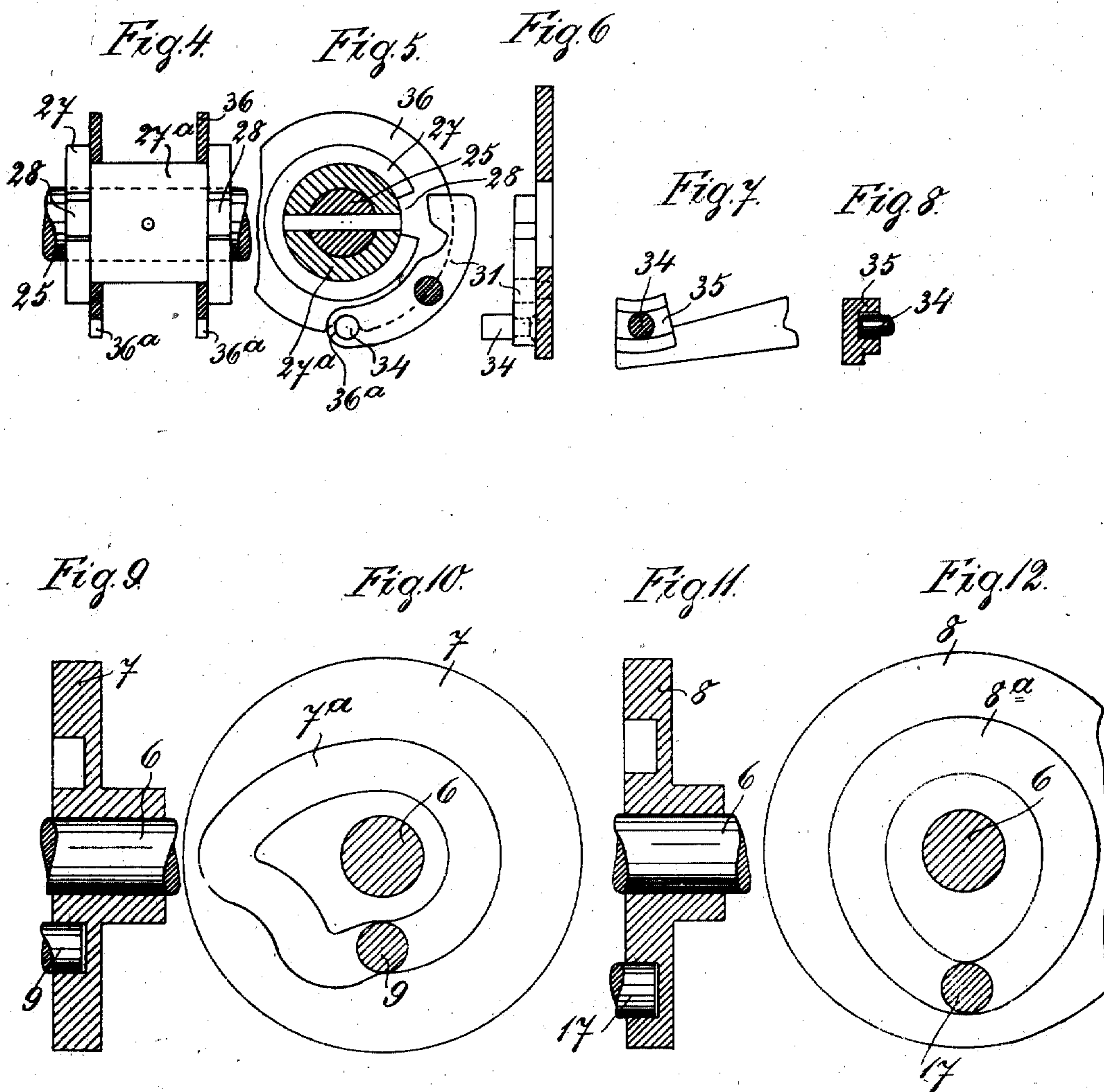
C. TROG.  
CASH REGISTER.

APPLICATION FILED NOV. 25, 1907.

995,501.

Patented June 20, 1911.

4 SHEETS—SHEET 4.



Witnesses:  
Arthur Scholz  
Carl Rupp.

Inventor  
Carl Trog  
by Robert Desplan  
Attorney

# UNITED STATES PATENT OFFICE.

CARL TROG, OF BIELEFELD, GERMANY, ASSIGNOR TO ANKER-WERKE ACTIENGESellschaft VORMALS HENGSTENBERG & CO., OF BIELEFELD, GERMANY.

## CASH-REGISTER.

995,501.

Specification of Letters Patent. Patented June 20, 1911.

Application filed November 25, 1907. Serial No. 403,769.

*To all whom it may concern:*

Be it known that I, CARL TROG, a subject of the King of Prussia, and resident of Bielefeld, in the Province of Westphalia, German Empire, have invented certain new and useful Improvements in Cash-Registers, of which the following is an exact specification.

This invention relates to cash registers of the type which deliver printed vouchers for the quantity registered and is specially directed to those cash registers of this type which have separate printing mechanism for each operating lever or row of keys. The vouchers corresponding to each lever or row of keys may be distinguished by a particular color and thereby facilitate the addition or other clerical work to be carried out with them. It has already been proposed to deliver a number of unit vouchers of a particular kind corresponding to the integral number, to which the lever was set or to the integral number of the key. Thus for a 96 cent bill, 9 separate 10 cent vouchers would be delivered and for a 9 dollar bill, 9 separate 1 dollar vouchers would be delivered.

According to the present invention a single voucher will be delivered for each row of keys brought into operation or for each lever operated and this single voucher shall be printed with the number of units corresponding to the setting of the cash register, lever or key. Further only the printing mechanisms actually required are called into operation.

The invention is illustrated in one convenient form in the accompanying drawings, which show a cash register with setting levers.

Figure 1 is a side view of a cash register with the cover plate and side plate removed and the printing and delivering mechanism in section. Fig. 2 is a sectional elevation on the line A B of Fig. 1. Fig. 3 is a sectional elevation on the line C D of Fig. 1. Figs. 3<sup>a</sup> and 3<sup>b</sup> show vouchers as they would be delivered for a sum amounting to 8 dollars 50 cents; the vouchers are shown opposite their respective printing mechanisms. Fig. 4 is a front view and Fig. 5 is a section of the engaging pawl for the printing mechanism. Fig. 6 is a longitudinal section of the pawl. Fig. 7 is a detailed view illustrating the engaging mechanism for operating the pawl. Fig. 8 is a section through the engaging mechanism shown in Fig. 7. Fig. 9 is a sec-

tional view and Fig. 10 is a side view of the cam for operating the mechanism. Fig. 11 is a vertical section and Fig. 12 is a partial elevation of the operating cam for the cutting mechanism.

Referring to Fig. 2 the levers *a b c d* are arranged in the usual way to effect the registration of the amount purchased. These levers are fixed on concentric shafts *a' b' c' d'*, each of which carries a printing segment 57. Thus the printing segment on the shaft *a'* may have tens of dollars—10, 20, 30, 40 and 50, etc., while the printing segment on the shaft *c'* may have tens of cents 10, 20, 30 and so on. The other two printing segments on the shafts *b'* and *d'* may have units of dollars and cents respectively. When the various levers have been set to the amount to be registered, this operation has the effect of putting the printing and voucher delivering mechanisms corresponding to said levers into operative connection with the crank driven parts. This is effected by a cam opening 48 (Fig. 1) in the printing segments 57. In this cam opening there engages a roller 47 mounted on a lever 46 loosely mounted on a shaft 49. The lever 46 has a grooved end 35, (see also Figs. 7 and 8) in which there engages a pin 34 carried by a pawl 31 (see Figs. 1, 5 and 6). The pawl 31 is pivoted at 32 to a pin carried by a disk 30 (see Fig. 3). The disk 30 is fixed to rotate with an impression roller 29, which prints any desired names or advertisement on the voucher. The impression roller 29 may be defective as shown so as to deliver only a desired length of strip corresponding to the length of the voucher.

It will be seen that the cam groove 48 causes the lever 46 to descend and thereby the upper claw end 33 of the pawl 31 is brought to engage in a cut away part of a flange 27 provided on a sleeve 27<sup>a</sup> which is fixed to rotate with the shaft 25.

It will be seen that the coupling mechanism described is duplicated for each printing mechanism so that each lever *a b c d* is adapted by its operation to operate a different coupling and only those levers of the group *a b c d*, which are operated, have their corresponding printing mechanisms in operative position to engage with the shaft 25 and be driven thereby.

An inking roller 58 mounted on spring controlled levers 56, supported on a shaft

55 is provided for each impression roller 29. Above each impression roller is a rubber or like feeding roller 42, adapted to be frictionally driven through roughened or toothed disks 41 adapted to engage with roughened or toothed disks 40 fixed to the impression rollers 29.

The feeding rollers 42 are loosely mounted on pins 44, which are eccentrically supported in bearing brackets 43. An arm 45 is fixed to the eccentric pin 44 and by adjusting this arm the amount of pressure exerted by the feeding rollers 42 on the impression roller 29 may be altered as will be readily understood. The strip to be printed by the impression roller 29 is guided to the said roller by a guide channel 20<sup>a</sup>.

After the levers *a b c d* have been set, the operator turns the hand crank 1. The hand crank 1 drives through the transmission wheels 2, 3, 4 and 5 the operating shaft 6 for the value printing and voucher cutting mechanism. On the shaft 6 there is keyed a cam 7 having a groove 7<sup>a</sup>, in which there engages a roller 9. (See Figs. 9 and 10). The roller 9 is carried by a lever 10 keyed to a shaft 11. To the shaft 11 there are also keyed the levers 12, which are connected by links 13 to a cross bar 14 guided in vertical guides 15 in the side frame plates of the machine (Fig. 2). The cross bar 14 carries stamps 16, one of which is arranged over each of the printing segments carried by the shafts *a' b' c' d'* respectively. The shaft 6 also carries two cams 8 (see Figs. 2, 11 and 12), in which there engages rollers 17 carried by levers 18 loosely mounted on the shaft 11. The levers 18 are extended toward the front of the machine, (see Fig. 1), and carry connecting rods 19, which are articulated to the sliding blocks 20, carrying the knives 21. The knives 21 cooperate with a cutting plate 22 to cut off the desired length of voucher, which is then delivered through an opening in the outer casing indicated in broken lines in Fig. 1. The shaft 6 is geared to the shaft 25 by wheels 23, 24 and 26. It will be seen therefore that, when one or more of the levers *a b c d* have been set and the crank 1 rotated, the impression rollers corresponding to the levers set and owing to the engagement of the corresponding coupling pawl 31, are caused to rotate whereby the paper strip is fed forward. This strip is pressed by the stamp 16 on to the uppermost type on the segment 57. This uppermost type of course corresponds to the setting of the lever *a b c d*, whichever is or are operated.

So that those printing mechanisms, which are not set in engagement with the shaft 25, may not rotate by the frictional action of their sleeves on the shaft, the pawl 31 is provided with a projecting pin 34, which in the position of rest of the pawl, i. e. with

the pin 34 in the groove 35 of the lever 46, the projecting part of the pin 34, rests in a notch 36<sup>a</sup> on a plate 36, which is held from rotation by a lever 39 carried by a shaft 38.

Toothed wheels 60 and 61 are arranged to transmit rotary motion from the shaft 25 to a cam shaft 53. The cam 53 works in a cam opening in a lever 52 having a forked end engaging in a pin 51<sup>a</sup> on a lever 51. The lever 51 carries an inking pad 54. Of course an inking pad is provided for each segment. In Figs. 1 and 10 it will be seen that the cam groove 7<sup>a</sup> is so shaped that the stamp 16 will be first lowered (assuming the crank 1 to be rotated clockwise in Fig. 1) a small amount and then a greater amount. The first short descent of the stamp is effected when the inking pad is over the segment in the position illustrated in Fig. 1. The cam 53 then rotates so as to oscillate the lever 51 and move the inking pad away from under the stamp. Simultaneously the previously printed voucher is fed over the segment 57 and under the stamp 16. The stamp comes down, and effects the printing of the number, for instance \$8 or \$0.50 as shown in Figs. 3<sup>a</sup> and 3<sup>b</sup> respectively. The strip is then fed farther forward till the voucher is past the cutting plate 22. The knife 21 then descends and severs the voucher from the strip. It will be seen, that, if the crank 1 is rotated without previously setting the levers *a b c d*, no voucher will be delivered as none of the rollers 29 would in that case be operatively connected to the shaft 25.

I claim:

1. In combination in a cash register a plurality of numeral printing means, hand operated means for setting each of said numeral printing means as desired, ticket printing and delivering means corresponding to said numeral printing means; cooperating mechanisms for actuating said numeral printing means and ticket printing and delivering means a rotatable shaft, couplings for coupling said ticket printing means to said rotatable shaft and means co-acting with each of the numeral printing means, when set, for putting the corresponding couplings into engagement with the driving shaft to render said ticket printing and delivering means operative.

2. In combination in a cash register a plurality of numeral printing segments, concentrically arranged shafts on which said segments are severally mounted to be separately rotated, means for separately rotating said segments as desired, a plurality of ticket printing and delivering rollers corresponding in number to the numeral printing segments, a rotatable driving shaft, on which said ticket printing rollers are loosely mounted, separate couplings for operatively coupling each of said ticket printing rollers to said shaft and mechanism co-acting with

each of said numeral printing segments to effect engagement of the coupling for the corresponding ticket printing and delivering rollers to said driving shaft.

- 5 3. In combination in a cash register, a plurality of concentrically arranged shafts, numeral printing segments carried by said shafts, a plurality of paper feeding and ticket printing means corresponding to said  
10 numeral printing segments, a driving shaft for said ticket feeding and printing means, a disk operatively connected to the ticket printing and feeding means and loosely mounted on the shaft, a pawl carried by said

disk and adapted to be moved into engage- 15  
ment with the driving shaft, a lever operable from the numeral printing segments and adapted to place said pawl into engagement with the driving shaft when the numeral printing segments are moved, and 20  
means for cutting the printed tickets.

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

CARL TROG.

Witnesses:

ROBERT V. BÜLAM,  
OTTO ALTENBURZ.