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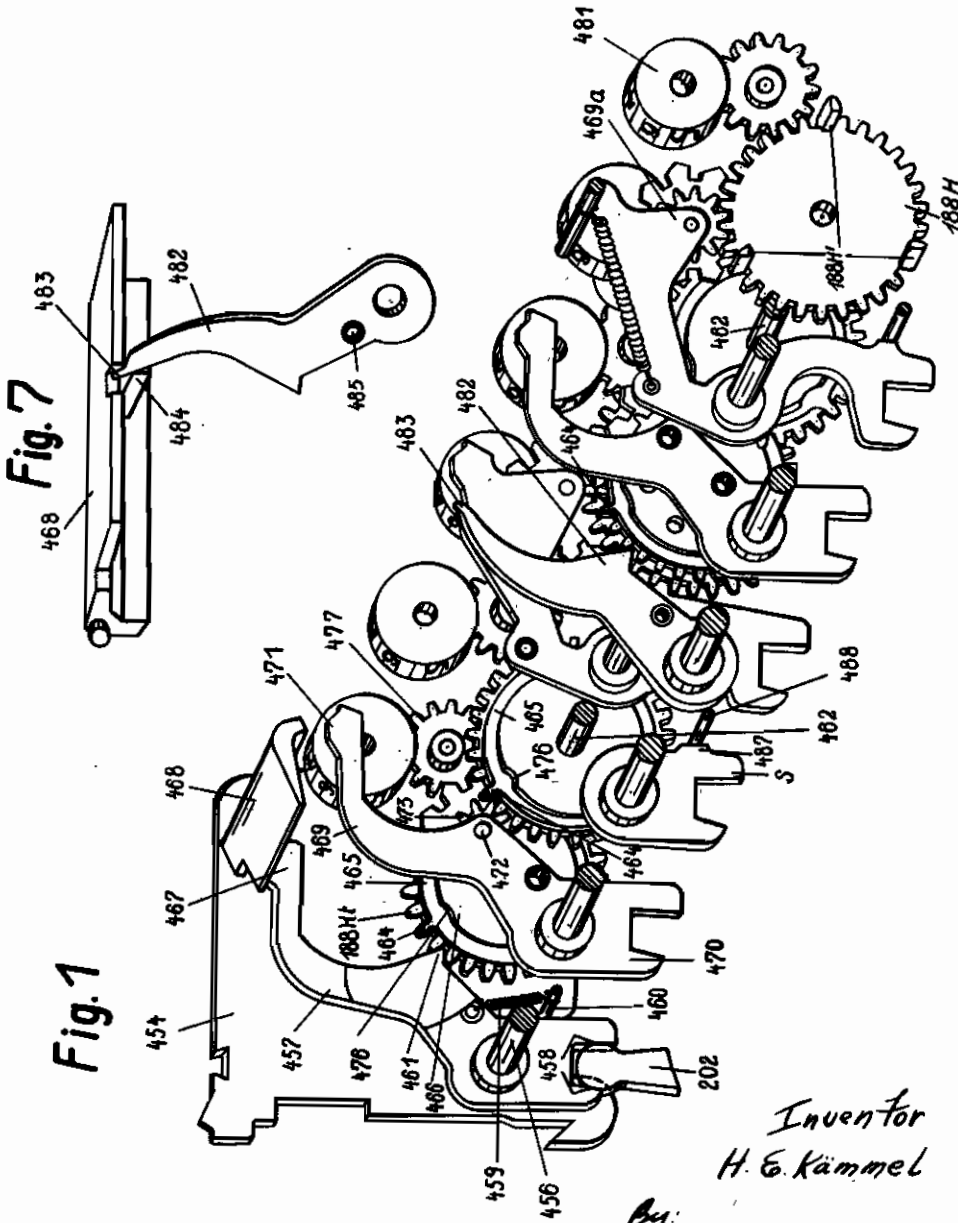
Serial No.

MAY 25, 1943. REGISTER FOR TYPEWRITING CALCULATING MACHINES 287,671

BY A. P. C.

Original Filed May 14, 1934

2 Sheets-Sheet 1



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Fig. 2

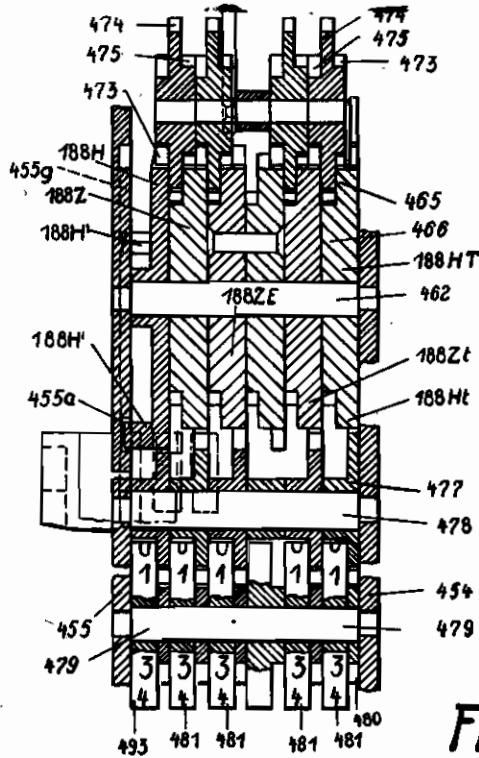
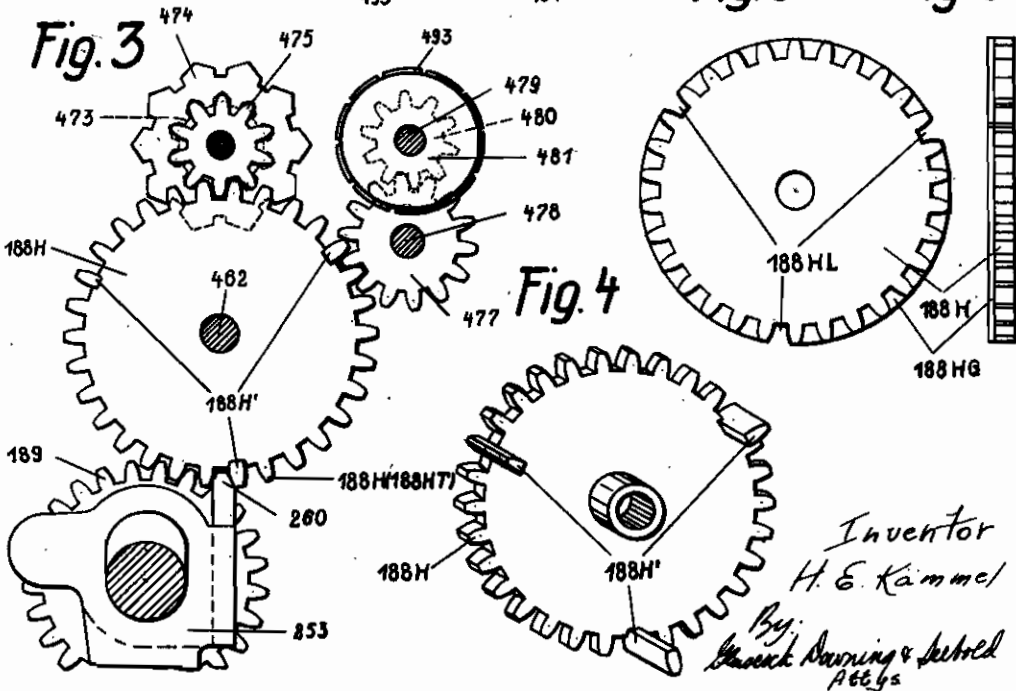


Fig. 5

Fig. 6



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ALIEN PROPERTY CUSTODIAN

REGISTER FOR TYPEWRITING CALCULATING MACHINES

Hugo Ernst Kämmel, Zella-Mehlis, Germany;
vested in the Alien Property Custodian

Application filed July 31, 1939

The invention relates to a register for typewriting calculating machines with total taking mechanism of the type exemplified in my co-pending application Ser. No. 725,636, filed May 14, 1934 and of which the present application is a division.

The register disclosed in the present specification is one of that kind in which a numeral wheel while being reset to zero is arrested in its zero position through the intermediary of its tens transfer device by the locked numeral wheel of the next higher denomination.

Such devices have previously been known. They had however the disadvantage that the highest decimal place of the register could not be used for total-taking because there was no device for arresting the resetting movement of the numeral wheel of highest denomination.

According to the invention these disadvantages are now obviated in that a driving member of the highest decimal place of the register is provided with parts, which limit the rotational movement of the driving member.

In the drawings two examples of construction of the subject of the invention are illustrated as applied to a Mercedes Addelectra typewriting calculating machine.

Figure 1 shows a perspective illustration of a totalizer viewed from the rear, in which view the detail parts are illustrated in a condition separated from one another.

Figure 2 shows a cross section through the totalizer, in which view for the sake of better apprehension the individual wheels, with their shafts, are disposed in one plane.

Figure 3 shows an elevation of the wheel gear for the numeral wheels of the highest place, viewed in the direction of the arrow in Fig. 2.

Figure 4 shows a perspective illustration of the driving wheel of the highest place of the totalizer represented in Figure 2.

Figure 5 shows an elevation of a further form of construction of the driving wheel of the highest place of a totalizer.

Figure 6 shows a side elevation in relation to Figure 5.

Figure 7 shows a perspective illustration of a locking lever with locking flap, viewed from the left hand edge of the rear side of the totalizer.

Totalizer mechanisms

On a shaft 456 (Figure 1) rigidly mounted in the two side walls 454 and 455 (Figures 1 and 2), a lever 457 is swingably mounted in the lowest decimal place, and is formed with its lower end

of fork-shape. The release lever, 202 (Figure 1) is capable of engaging in the fork-shaped part 468, and of acting on the lever 457. With the lever 457 there engages a spring 459, which on the other hand is connected to a shaft 460 mounted in the two side walls 454 and 455 of the column totalizer. The spring 459 acts on the lever in the clockwise direction round the shaft 456, whereby its normal position is determined by the tooth 461 of the lever 457 being in engagement with the 30 tooth toothed wheel 188 Ht rotatably mounted on the shaft 462.

With the toothed wheel 188 Ht (Figures 1 and 2) of the lowest decimal place, a disc 465 provided with three tens-shift teeth 464 and a disc 466, are rigidly connected. The three parts 188 Ht, 465 and 466, are produced from a single piece and consequently represent a single element. The nose 467 provided on the upwardly-directed free end of the lever 457 (Figure 1) is capable of acting on a flap 468 rockably mounted in the two side walls 454 and 455.

To the right of the lever 457 (as seen in Figure 1) there is a lever 469 swingably mounted on the shaft 456. The downwardly directed limb 470 of the lever 469, is of fork-shape, and is capable of co-acting likewise with the release finger 202 above mentioned. The nose 471, of the lever 469, co-acts likewise with the flap 468. On the lever 469, a transfer wheel is rotatably mounted by means of a headed rivet 472 (Figure 1), the transfer wheel consisting of a ten-tooth toothed wheel 473, a ten-toothed Maltese wheel 474 and a ten-tooth toothed wheel 475, produced from a single piece, of which the toothed wheel 473, is capable of co-acting with the three-toothed tens-shift disc 465, and the Maltese wheel 474, with the locking disc 466. The disc 468 is provided with three notches 476, for the free passage of the teeth of the Maltese wheel.

The toothed wheel 188 Ht, is, further, in engagement with a toothed wheel 477 (Figures 1 and 2) which is loosely rotatable on a shaft 478, rigidly mounted in the two side walls 454 and 455 of the column totalizer. The toothed wheel 477, again, is in engagement with the toothed wheel 480, loosely rotatable on the shaft 478, which is rigidly mounted in the two side walls 454 and 455 of the column totalizer. A number roller 481 is rigidly connected with the toothed wheel 480. The toothed wheel, 475, associated with the lowest decimal place of the hundredths decimal place, is in engagement with the wheel 188 Zt of the tenths decimal place. The parts above described for the hundredths decimal place are

similar for the tenths, units, tens etc. decimal places. In the following therefore only the differences will be pointed out.

By means of a lever 482 (Figures 1 and 7) swingably mounted on the shaft 456, of which lever the nose 483 (Figures 1 and 7) acts on a part 484, arranged on the flap 468, the flap 468 is held swung in the anti-clockwise direction (seen in Figure 1), whereby its rest position is determined by contact of the noses 467, 471 of the levers 457, 469 on the one hand, and, on the other hand, by contact of the nose 461 of the lever 457, in the tooth spaces of the toothed wheels 188. The lever 482, moreover, is held swung in the clockwise direction (seen in Figure 1) by means of a spring (not illustrated) which engages with the hole 485 of the lever 482.

Since in the pointing off-place of the column totalizer, which is in working position, no transfer into this column totalizer is permitted to take place, because when the pointing off-place of the column totalizer is opposite the master wheel 189 co-acts with the part S (Fig. 1) swingably mounted on the shaft 458 of the column totalizer, in such a manner that the projection 487 of part S comes to lie against the shaft 488, fixed in the side walls 454, 455 of the totalizer. Consequently the release finger 202 is prevented from swinging outwardly, and the calculating mechanism being locked.

The driving wheel 188H of the highest place of the totalizer is further provided with three lateral elongated teeth 188H' corresponding to the teeth 464 of the wheels 188Ht, 188Zt etc. By this arrangement the calculating and total taking of values in the highest place is possible. A recess 455g (Fig. 2) in the side wall 455 of the totalizer admits the free movement of the elongated teeth 188H' of the driving wheel 188H of the highest place, so that the driving wheel 188H may be rotated on the shaft 482. The wheels 473, 474, 475 for the highest place of the totalizer are likewise arranged on a lever 468a.

By abutment of the aligning tooth 260 of the part 253 with one of the elongated teeth 188H' of the driving wheel 188H of the highest place the rotation of the wheel 188H, is arrested as soon as the numeral wheel 481 of the highest place shows the digit "0", whereby total taking from the highest place of the totalizer is allowed.

Operation of the totalizer

During the automatic total taking, the carriage,

on which the totalizers are arranged, is moved step by step from right to left.

Next of all, the paper carriage is, by depression of a tabulating key or the space key, brought into the position in which the toothed circumference of the wheel 188H is opposite to the main driving wheel 189. The aligning tooth 260 of the part 253 is now within the reach of the three elongated teeth 188H' of the driving wheel 188H, which are arranged corresponding to the tens shifting teeth 484 of the wheels 188Ht, 188Zt etc., whereby the release finger 202 releases the driving wheel 473, 474, 475 of the highest place in the well known manner as fully described in U. S. Patent 1,270,471. Hereby the wheel 188H may be turned back by the main driving wheel 189, until one of the elongated teeth 188H' of the wheel 188H comes to lie against the aligning tooth 280 of the part 253, whereby a zero is visible in the peephole of the totalizer casing. Hereupon the paper carriage (not illustrated) is automatically moved one step to the left, so that now the aligning tooth 280 of the part 253 is in engagement with the toothed circumference of the driving wheel 188H and locks the same, whereby the release finger 202 releases the wheel 473, 474, 475 with the lever 470 associated with the driving wheel 188Z, while the main driving wheel 189 is in engagement with said driving wheel 188Z.

Hereby the driving wheel 188Z may be returned until the tens shift tooth 464 of the wheel 188Z abuts against a transmitting tooth 473 of the wheel 473, 474, 475 of the highest place, which since it meshes with driving wheel 188H, which is locked by the aligning tooth 260 of the part 253, is also prevented from rotation so that the zero of the numeral wheel 481 associated with the driving wheel 188Z is visible in the peephole of the totalizer.

Owing to this arrangement, the highest decimal place may be used for usual calculating purposes as well as for total taking.

With the modification according to Figures 5 and 6 open tooth spaces 188HL are used with regard to which the aligning tooth 260 must be yieldingly arranged in lateral direction, so that it may run on to the part 188HQ and snap into a tooth space 188HL thus locking the wheel 188H in the position in which the appertaining numeral wheel shows a zero.

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