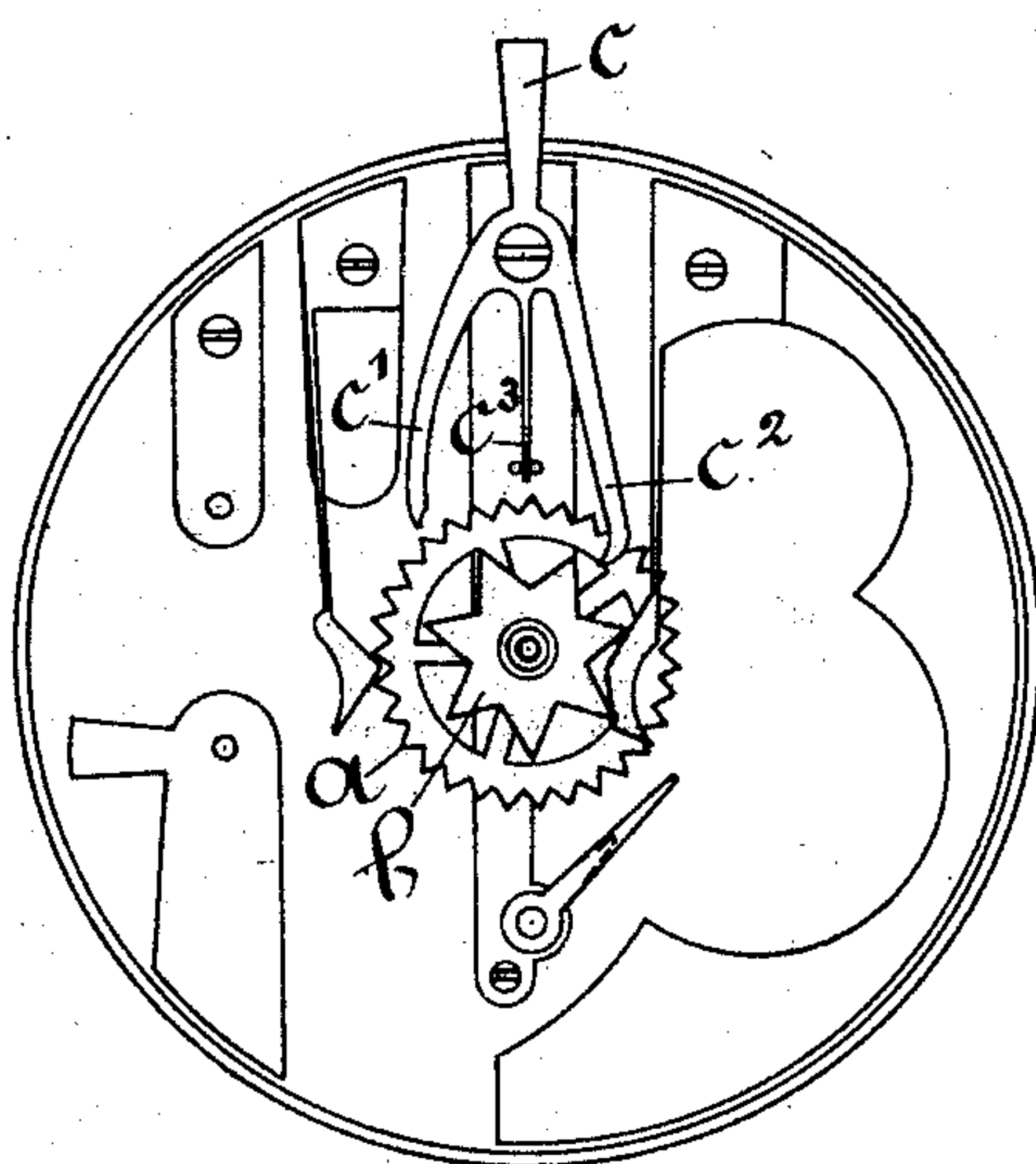


(No Model.)

H. GRÜNBERG.
CALENDAR CLOCK.

No. 504,432.

Patented Sept. 5, 1893.



Witnesses

Albert Jones.

John F. Gairns.

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UNITED STATES PATENT OFFICE.

HULDA GRÜNBERG, OF BIEL, SWITZERLAND.

CALENDAR-CLOCK.

SPECIFICATION forming part of Letters Patent No. 504,432, dated September 5, 1893.

Application filed March 9, 1893. Serial No. 465,366. (No model.) Patented in Switzerland September 5, 1892, No. 5,356.

To all whom it may concern:

Be it known that I, HULDA GRÜNBERG, a citizen of the Republic of Switzerland, residing at Biel, in the Republic of Switzerland, have invented certain new and useful Improvements in Watches, (for which I have obtained Letters Patent in Switzerland, No. 5,356, bearing date September 5, 1892;) 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 and use the same.

This invention relates to watches provided with calendar mechanism that is which are arranged to show the number of the day of the month and the name of the day of the week, and has for its object to provide improved means whereby the calendar mechanism can be readily set to the correct number and name. As is usual the number and name disks carrying respectively the numbers 1 to 31 and the names of the seven days of the week are operated by two wheels adapted to rotate about the same axis, one wheel having thirty-one teeth and being connected to the number disk and the other wheel having seven teeth and being connected to the name disk. Each of these wheels is rotated through one tooth every twenty-four hours in the usual manner. As the so called number disk and wheel are only arranged for a month of thirty-one days it is necessary that for short months after the number of the last day the number 1 shall appear for the first day of the following month, the number 31 and in February the numbers, 29, 30 and 31 being passed over. It is furthermore necessary that the calendar mechanism may in consequence of the watch stopping or keeping incorrect time, be at any time set to the actual date and that the number and name of the day may be brought to agree. Now according to this invention the setting or adjustment of the number and name disks is effected by the regulator *c* provided with four arms; one arm extends to the outside of the watch case through a small slot in the case and serves to operate the regulator; another arm *c*³ forms a spring firmly held at its free end between two stops and tends to force

tion; a third arm *c*¹ is adapted when the operating arm is moved to the left to engage with a tooth of the number wheel *a* and rotate it through one tooth, and when the operating arm of the regulator is released the regulator is returned by the spring arm *c*³ to its normal position out of gear with the wheel *a* and can be again operated if desired to move the wheel *a* forward another tooth and so on; the fourth arm *c*² acts in a similar manner on the name wheel *b* to move it backward when the operating arm of the regulator is moved to the right. Normally the wheels *a* and *b* are free to rotate without touching the arms *c*¹, *c*². The wheels *a* and *b* are prevented from moving more than one tooth at a time and are brought to the exact position by the spring pawls *d*¹ and *f*¹ respectively. It will thus be seen that if the regulator *c* is moved on the outside to the left, the arm *c*¹ engages in the number wheel *a* and rotates it one tooth forward when it is brought again into the neutral position by the spring *c*³ while if the regulator *c* is moved to the right the arm *c*² engages in the name wheel *b* and rotates it backward the space of one tooth when it is brought again into the neutral position by the spring *c*³ and both manipulations can be repeated until the appearance of the desired date.

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

A regulator for calendar mechanisms of watches provided with an external operating arm, with a spring arm always tending to force it to its central or neutral position and with two pawl arms, one adapted when the operating arm is moved in one direction to rotate the number wheel and the other adapted when the operating arm is moved in the other direction to rotate the name wheel in each case the space of one tooth from the position previously occupied the whole substantially as described for the purpose specified.

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

HULDA GRÜNBERG.

Witnesses:

T. KREUCHI,
T. C. KREUCHI, Sohn.