Dec. 7, 1937. A. A. OVERBURY 2,101,818

CALCULATING MACHINE

Filed Jan. 23, 1936

Fig. 1.

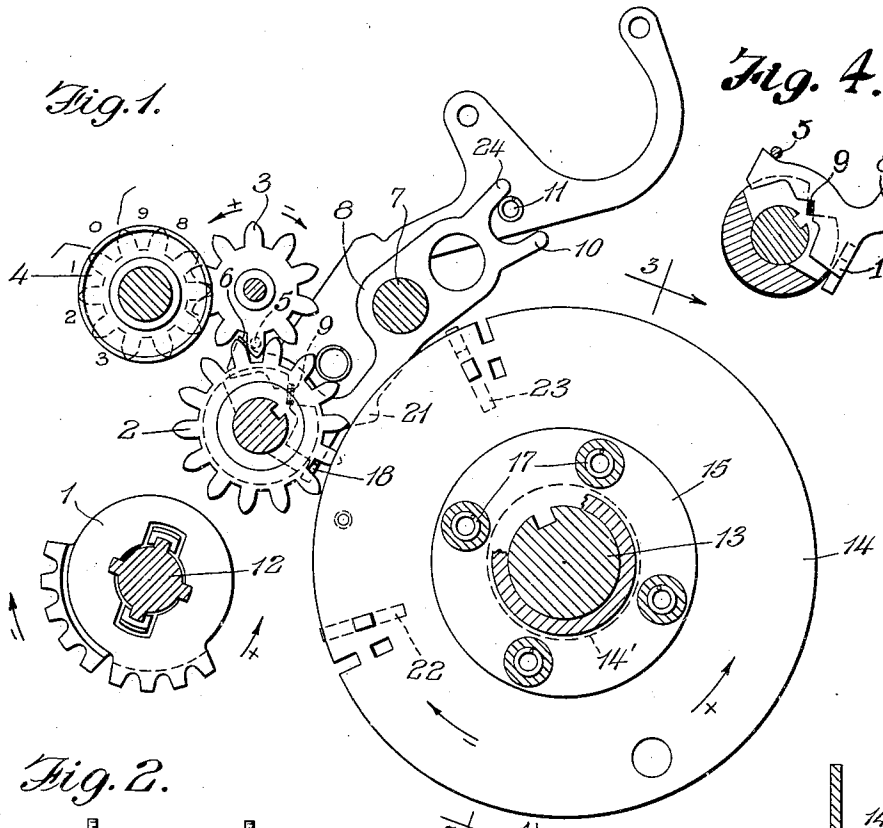


Fig. 4.

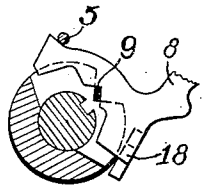


Fig. 2.

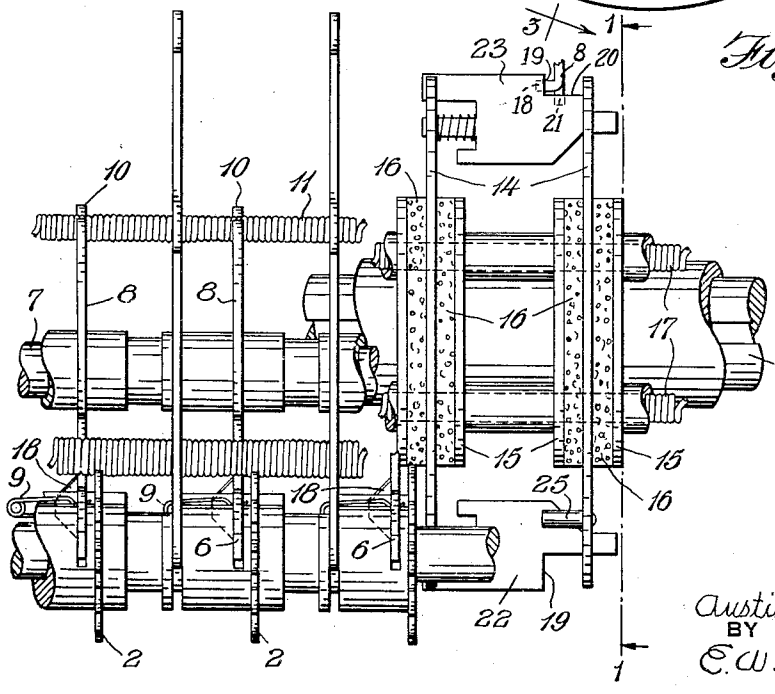
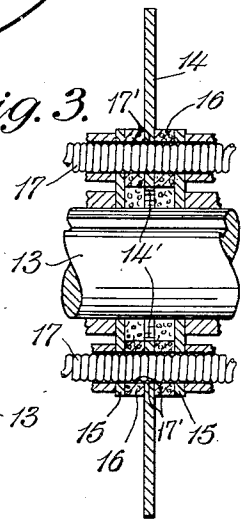


Fig. 3.



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2,101,818

CALCULATING MACHINE

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Application January 23, 1936, Serial No. 60,531

1 Claim. (Cl. 235—133)

The invention has relation to calculating machines, and more particularly to power transmission means used in such machines, for instance in transfer mechanism thereof, an object of the invention being to dampen the vibration of the power transmission means, for silencing and other purposes.

The invention consists in the novel construction and combinations of parts as set forth in the appended claim.

In the accompanying drawing, illustrating application of the invention to the transfer mechanism of the well known Monroe calculating machine, Figure 1 is a cross-section of the carry mechanism, taken on the line 1—1, Figure 2; Figure 2 is a plan view of the same, with parts broken away; Figure 3 is a detail cross-section on the line 3—3, Figure 1, and Figure 4 is a detail side view partly broken away of a carry setting arm with adjacent parts in section.

In the drawing, and first briefly describing the carry mechanism, the numeral 1 (Fig. 1) designates differential actuator gears, adapted to engage gears 2 of intermediate gear trains 2, 3, the latter engaging numeral wheel gears 4, to register amounts in the numeral wheels, the latter being graduated respectively from 1 to 10. When a numeral wheel passes from 9 to 0 or vice versa, a pin 5 on a numeral wheel gear acts on a tooth 6 of a related carry setting arm 8 to depress the latter, the carry setting arms being pivoted on shaft 7, located in the stationary frame of the machine.

As the carry setting arm 8 is snapped into downward position under the influence of toggle spring 9, the tail 10 of said arm is stopped by close wound coiled spring 11, which absorbs the shock and decreases noise.

Geared to the differential actuator shaft 12 is the carry shaft 13, and mounted on and keyed to the shaft 13 are a longitudinal series of carry arms or members 14, supporting sliding plus and minus carry teeth, designated respectively 22 and 23.

Cam portion 18 of a carry setting arm 8 being in downward position is located in the path of vertical surfaces 19 of the related carry teeth 22 and 23, and projection 21 of said carry setting arm lies in the path of horizontal surface 20 of the related tooth 23 and in the path of the pin 25 of the related carry arm or member 14.

In the present case, the shaft 13 has mounted thereon and keyed thereto a longitudinal series of elements 15, shown as disks, arranged in couples, the carry arms or members 14, shown as annuli, being arranged one between each couple of disks, and having apertures 14', engaged loosely by the shaft 13 and of area respectively larger than the cross sectional area of said shaft, cork washers 16 being interposed between the members of each couple of disks and a carry arm 14, said washers being also annuli, corresponding in diameter and size of aperture to those of said carry arms. The shaft 13 has mounted thereon spacers 13' located between the pairs of disks 15.

In order to support the carry arms or members 14 concentrically of the shaft 13, and to transmit rotary movement from said shaft to said carry arms, and to dampen vibration, spring connection means are provided between said shaft and said carry arms, comprising a series of longitudinal coiled springs 17, arranged around the shaft 13 and engaging aligned apertures 17' of said disks 15, said carry arms and said washers. Spacers 17'' are mounted on the springs 17 and located between the pairs of disks 15.

In minus operation, as the shafts 12 and 13 rotate clockwise, and a numeral wheel 4 passes from 0 to 9, and pin 5 of a related gear 3 knocks down a carry setting arm 8, to bring its cam portion 18 into the path of movement of the related minus carry tooth 23, said cam portion 18, contacting with surface 19 of said tooth will force the latter to the left, where it will engage with the related gear 2 and impart one step of movement to the next higher order numeral wheel, the shock of the impact being absorbed by said longitudinal springs 17 and cork washers 16.

The dampening of vibration referred to may also serve to prevent misoperation of the spring retracted plus and minus sliding carry teeth 22 and 23.

I claim:—

In power transmission means for transfer mechanism of calculating machines, a rotary shaft, a series of elements fixed to said shaft and having apertures, a series of carry members arranged longitudinally of and loose on said shaft and having apertures, and longitudinal coiled springs engaging aligned apertures of said elements and said carry members for transmitting rotary movement and for dampening vibration.

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