Nov. 13, 1923. 1,474,137

L. BECKENBAUER

ADJUSTING MECHANISM FOR CALCULATING MACHINES

Filed Oct. 31, 1922

Fig. 1

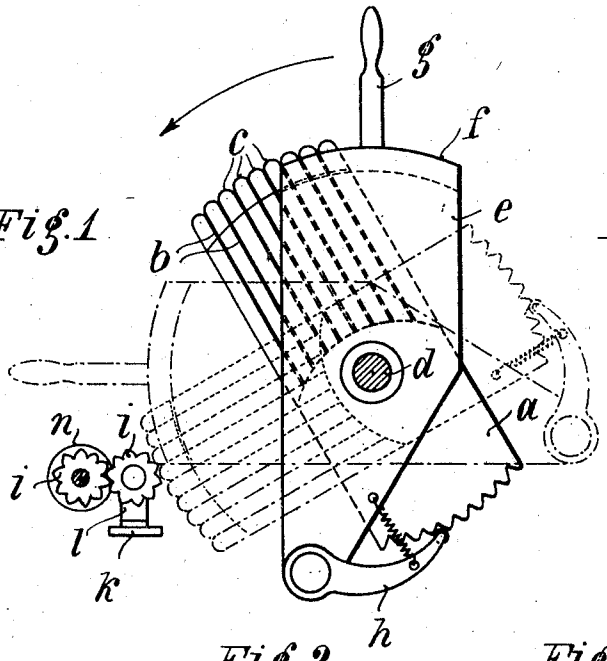


Fig. 3

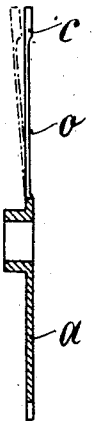


Fig. 2

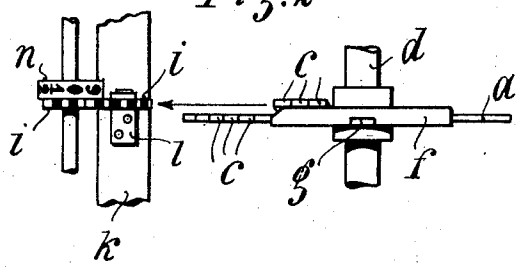
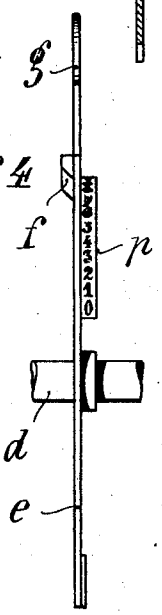


Fig. 4



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Patented Nov. 13, 1923. 1,474,137

UNITED STATES PATENT OFFICE.

LUDWIG BECKENBAUER, OF MUNICH, GERMANY.

ADJUSTING MECHANISM FOR CALCULATING MACHINES.

Application filed October 31, 1922. Serial No. 598,057.

To all whom it may concern:

Be it known that I, LUDWIG BECKENBAUER, a citizen of the German Republic, residing at Munich, Germany, have invented certain new and useful Improvements in Adjusting Mechanism for Calculating Machines, of which the following is a specification.

This invention relates to the peg wheels of calculating machines of that type which have to be adjusted in accordance with the values of the invoice and which by one revolution transmit the adjusted values to the summing up mechanism.

Several forms of construction of peg wheels are known in which the several teeth consist of adjustable or rotatable pegs adapted to be adjusted by means of cam disks. With peg wheels of this type it is unavoidable that after the machine has served for some time the pegs are worn off in their guides and get shaky wherefrom results a noisy heavy working of the machine.

This invention has for its object a simple construction of the teeth which work with perfect economy and further a simple construction of the cam disks designed to adjust the teeth.

In order that the invention may be clearly understood I shall hereinafter proceed to describe the same with reference to the form of construction shown by way of example on the accompanying drawing, wherein:

Fig. 1 shows in side elevation the improved peg wheel with cam disk and summing up mechanism.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 shows one tooth in the position of rest, the working position being indicated in dash lines.

Fig. 4 shows a constructional detail.

In the form of construction shown the disk-shaped body *a* of the wheel is divided into (nine) elastic pegs *c* by the milling in of (eight) narrow slits *b*.

The pegs *c* present at the outer ends the shape of a mangle gear so that they mesh almost without play with the wheels *i* and ensure permanently an easy noiseless working. The peg wheel *a* is keyed upon the revolubly mounted shaft *d* which is driven by a crank handle, not shown on the drawing. At the side of the peg wheel *a* the cam disk *e* is revolubly mounted upon shaft *d* so that it is secured against displacement in axial direction. This cam disk *e* has a concentric laterally projecting extension *f* with inclined wedge-shaped end surface and it is adapted to be rotated with the aid of a handle *g* projecting in the well known manner through a slot of the casing of the calculating machine.

With the aid of adjusting figures marked as usual at the side of the slots and with the aid of the ratchet device *h* arranged in the well known manner between the peg wheel *a* and the cam disk *e* the mechanism can be adjusted for the desired number of teeth. By moving the handle *g* the lamellæ-like elastic teeth or pegs are bent laterally into the working position by the action of the cam *f* so that, when the shaft *d* is being revolved with the aid of the crank handle, said pegs or teeth engage with the summing up mechanism. Upon the bottom plate *k* of the adjustable summing up mechanism an angle piece *l* is fixed in the upper end of which an intermediary toothed wheel *i* is mounted so that it can easily revolve, said intermediary wheel *i* being designed to transmit the action of the peg wheel upon the indicating cylinders *n*. The intermediary wheels *i* are preferably made from vulcanite. In this manner it is possible to avoid the sound of metal at the operation of the machine and to make the machine run noiselessly.

As shown in Fig. 3 the teeth *c* of the pegs *a* are cut out at *o* so that the resistance of the pegs against the action of the cam *f* is reduced as much as possible and so that the cam disk *e* can be adjusted easily by the handle *g* indifferently of the number of pegs which have to be put under tension. For the same reason the friction surfaces of the teeth *c* and the cam *f* are polished. As the disk *a* with all the teeth *c* is made from elastic material, for instance of sheet steel, the teeth *c* jump back at once into the position of rest as soon as they are released by the cam *f*.

Fig. 4 shows a form of construction of the cam disk which permits the reading at a glance of the figure adjusted or together with the other cam disks of the entire number. With this object in view a sector *p* of sheet iron or the like is arranged at the upper circumference of the cam disk *e*, the figures 0–9 being marked upon this sector at such distances apart from one another that they coincide with the divisions of the

peg wheel *a*. For each cam disk a window is arranged in the casing behind which the adjusted figure appears.

I claim:—

Adjusting mechanism for calculating machines with adjustable peg wheel comprising in combination with the summing up device a peg wheel consisting of a disk of elastic material divided by narrow slits into elastic pegs, a tooth-shaped head of each peg, a cam disk, a concentric extension of said cam disk having an inclined end surface designed to act upon the pegs to bend the same in lateral direction so that said pegs return by elasticity to the initial position as soon as they are released by said cam disk.

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

LUDWIG BECKENBAUER.

Witnesses:
ALESANDER DE SOTO,
A. C. HAUGHTON.