July 21, 1925. 1,546,732

M. P. E. HOHN

CIGARETTE ROD SEVERING DEVICE FOR CIGARETTE CASE MACHINES

Filed May 29, 1924

Fig. 1

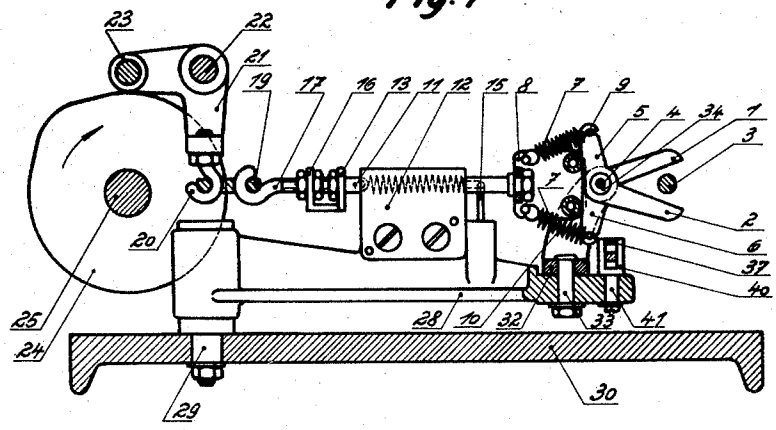
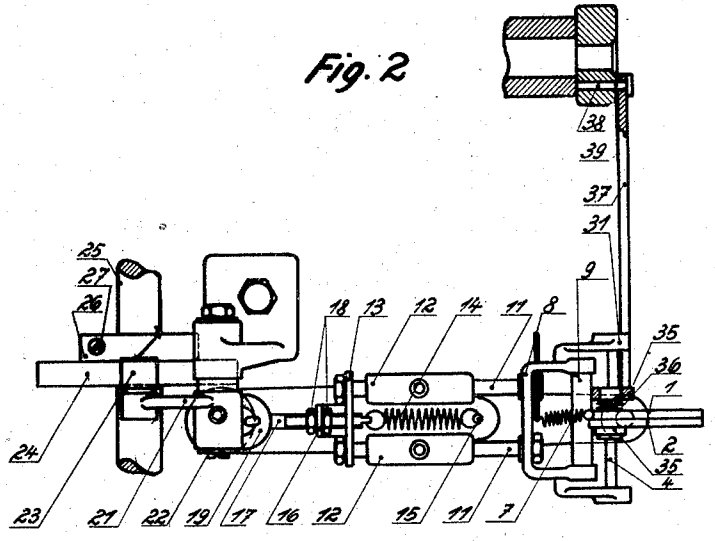


Fig. 2



Inventor
Max Paul Ernst Hohn
By
Max V. Ordnaun
Atty

Patented July 21, 1925. 1,546,732

UNITED STATES PATENT OFFICE.

MAX PAUL ERNST HOHN, OF DRESDEN, GERMANY, ASSIGNOR TO "UNIVERSELLE" CIGARETTENMASCHINEN-FABRIK, J. C. MÜLLER & CO.

CIGARETTE-ROD-SEVERING DEVICE FOR CIGARETTE-CASE MACHINES.

Application filed May 29, 1924. Serial No. 716,583.

To all whom it may concern:

Be it known that I, MAX PAUL ERNST HOHN, a subject of the Republic of Germany, residing at Zweckauerstrasse 48, Dresden-A, Germany, have invented certain new and useful Improvements in Cigarette-Rod-Severing Devices for Cigarette-Case Machines, of which the following is a specification.

The cigarette rod or rope severing devices of cigarette case machines have not hitherto been built to suit the high speeds of the modern machines. Since consideration has not been taken of the question of the rapid movement of masses or of the need for avoiding the use of rapidly wearing parts the present severing devices suffer from the serious disadvantage that they make far too much noise when operated very rapidly.

The new rod severing device forming the subject of the present invention overcomes these disadvantages. In it the shank members of the device are pressed by springs or the like against an abutment or abutments introduced between them which abutments are moved to and fro with respect to the pivot of the severing device. With this arrangement the shanks of the severing device are continuously in engagement with the abutments and these abutments need merely move through a short distance. Thus the abutments may be secured to links displaceable with respect to the pivot of the severing device to which links is attached a connecting rod pivoted to a rocking lever actuated by a cam disc. As the severing device during the cutting operation must be moved with the velocity of the rope or rod in the direction of feed the severing device and the guide for the abutment or abutments must be arranged on a long lever adapted to rock transversely of the cutting plane of the severing device. Although an exactly rectilinear movement of the severing device in relation of the cigarette rope or rod is not thus obtained experience has shown that the slight variation from straight line movement at the upper end of the area of movement may be practically neglected. However, the connecting rod which moves the links carrying the abutments must be universally jointed or at least must be connected with the operating lever in such manner that movement is possible both in the vertical and horizontal planes. For this purpose a ring or the like is provided which is suspended by the hook shaped ends of the connecting rod and actuating lever. The swinging movement of the long armed lever carrying the severing device is effected by a crank arm which is also of considerable length and which by means of a pivot at right angles to the plane of movement engages the free end of the rocking lever.

The new rod severing device is illustrated in the accompanying drawing in Fig. 1 in side view partly in vertical longitudinal section, and in Fig. 2 in plan partly in horizontal cross-section.

As shown, the two blades 1 and 2 of the severing device adapted to cut the cigarette rod are provided with the usual shanks 5 and 6 located on the opposite side of the pivot 4. To the ends of these shanks are connected springs 7 secured at their other ends to a support 8. The support 8 is U-shaped and is fitted with two rotatably mounted rollers 9 and 10 disposed vertically above one another, the shanks 5 and 6 of the severing device being pressed by the springs 7 against said rollers.

The support 8 is carried by two rods 11 disposed parallel to one another and arranged to move longitudinally in a bearing 12. At one end of the bearing the two rods are connected by a transverse member 13. To this transverse member is connected a spring 14 which is mounted in a channel or recess in the bearing 12, one end of the spring being secured to a pin 15. Said spring tends to press the rollers 9 and 10 against the shanks 5 and 6 of the severing device in such manner that the severing device remains in open position.

With the transverse member 13 is connected a hook-shaped bracket 16 having a hook 17 the shank of which is screw-threaded and may be adjusted by the nuts 18 on the bracket 16. In the hook 17 is inserted a ring 19 engaged by a further hook 20 mounted on the end of a rocking lever 21 arranged as a double armed lever. The hooks 17, 20 and ring 19 constitute a universal joint. This lever 21 swinging about the horizontal pivot 22 carries at its other end a roller 23 bearing on a cam disc 24, the spring 14 ensuring continuous contact between the roller 23 and cam disc 24.

The cam disc 24 is not mounted direct on the shaft 25 but is screwed on a member 26 mounted on the shaft. Said member is in the form of a spring clamp and is pressed together by tightening the screw 27 so that it can be firmly secured to the shaft 25 but can be moved along the shaft with the cam disc 24 after unscrewing the screw 27.

The severing device and the bearing 12 are carried by a rocking lever 28 which is arranged transversely of the cutting plane of the severing device (i. e., in a horizontal plane) and rocks about the pivot 29 on the bed-plate 30.

The severing device proper is adapted to be displaced in known manner on the pivot 4 which is made long and is held in a forked bearing 31. The support 32 of this bearing is secured by means of a bolt 33 to the rocking lever 28. After loosening the bolt 33 the pivot of the severing device may be moved and adjusted according to requirements by turning the bearing bracket 31. The severing device is mounted in known manner on a sleeve 34 displaceable in relation to the pivot 4. The severing device is located between two adjusting collars 35 on the sleeve and is pressed by a spring 36 coiled around the sleeve against the adjusting collar. The rollers 9 and 10 are arranged to suit the movement of the severing device on its pivot, that is they are made long enough to allow the shanks of the severing device always to bear thereon. The rocking movement of the lever 28 is effected by a connecting rod 37 connected at one end to a crank 38 at 39 while the other end is mounted in a fork 40 which is carried by an upright pivot pin 41 extending freely through the rocking lever 28. The crank is carried by a shaft x, which may be driven from the main driving means of the machine in any suitable manner.

In high speed reciprocation of the support 8 the shanks of the severing device remain always in contact with the rollers 9 and 10. In this manner all noise is avoided and the cutting movement of the severing device is carried out with the minimum movement of masses. The movement of the masses is effected from the stationary cam which through the medium of the universal joint 17, 19 and 20 operates the rods 11 of the severing device, said rods and the severing device being mounted on the rocking lever 28.

Having now particularly described and ascertained the nature of my said invention and in what manner same is to be performed, I declare that what I claim is:—

1. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment means disposed between the shanks thereof and reciprocated forwardly and rearwardly relative to the pivot of said blades and means for holding said abutment means constantly in contact with the shanks of said blades.

2. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment means disposed between the shanks thereof and cam controlled reciprocating means carrying said abutment means for holding the latter constantly in contact with the shanks of said blades.

3. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment means disposed between the shanks thereof, cam controlled reciprocatory means carrying said abutment means and capable of swinging around a fixed axis and means for holding said abutment means constantly in contact with the shanks of said blades.

4. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment means disposed between the shanks thereof, reciprocatory means carrying said abutment means and capable of swinging around a fixed axis, a revolving cam whose axis is fixed in position, means actuated by said cam and having a universal joint with said reciprocatory means, means for imparting a swinging movement to said reciprocatory means and means for holding said abutment means constantly in contact with the shanks of said blades.

5. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment means disposed between the shanks thereof, reciprocatory members carrying said abutment means, a revolving cam having a fixed axis, a bell-crank lever actuated by said cam and having a universal joint connection with said members to transmit reciprocatory motion thereto, a rocking lever capable of swinging around a fixed axis and transversely of the cutting plane, and carrying said members and blades and means for holding said abutment means constantly in contact with the shanks of said blades.

6. In a cigarette rod severing device for cigarette case machines, pivoted blades, abutment rollers constantly pressed against the shanks of said blades, reciprocatory rods carrying said rollers, a rotary cam having a fixed axis, a bell-crank actuated by said cam, a universal joint connection between said bell-crank and said rods, a rocking lever carrying said rods and blades and capable of swinging transversely of the cutting plane and a driven reciprocating means for imparting movement to said rocking lever.

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

MAX PAUL ERNST HOHN.

Witnesses:

RICHARD IFFERBE,

GEORG GUTLICH.