

Nov. 2, 1965

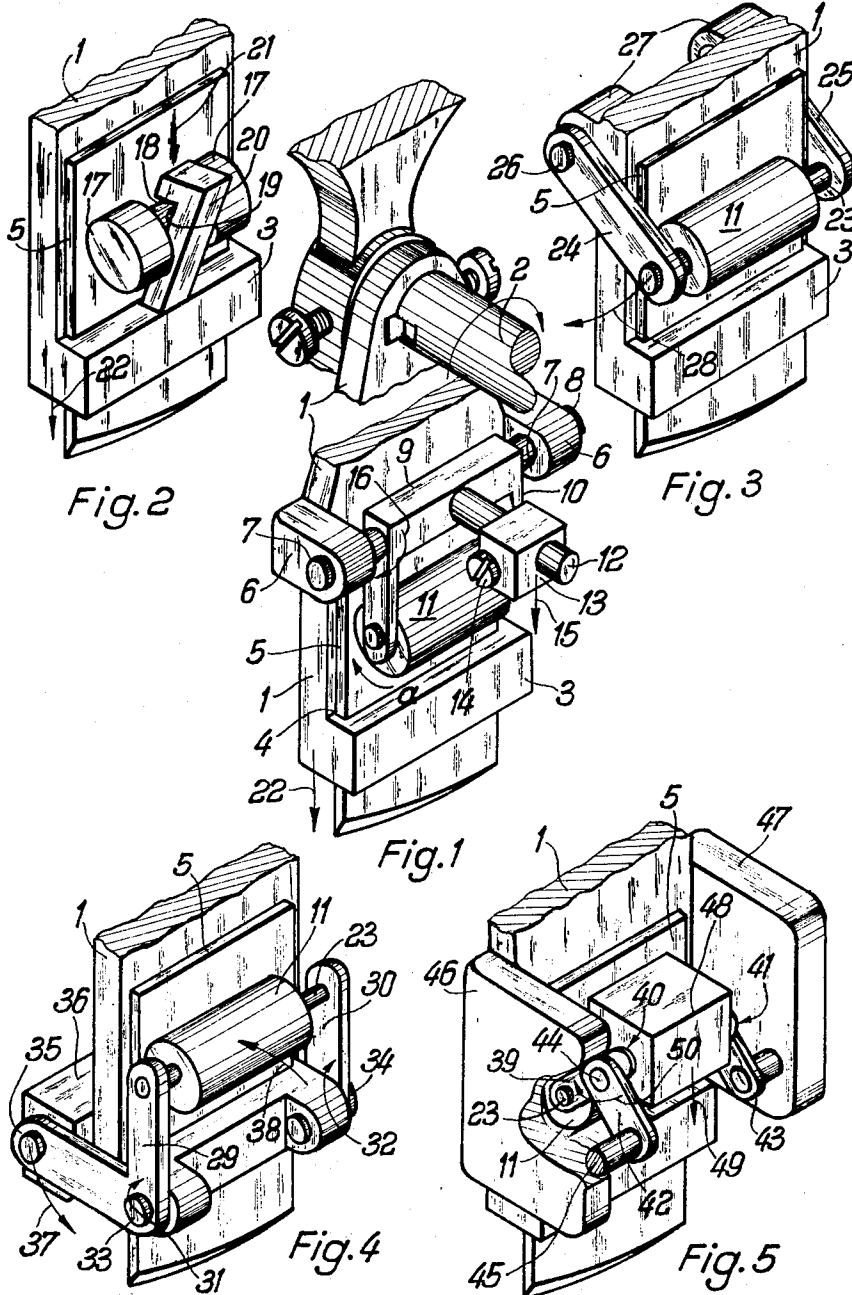
D. BARDENHAGEN

3,215,178

KNIFE MOUNTING FOR CIGARETTE ROD CUTTERS

Filed June 11, 1962

4 Sheets-Sheet 1



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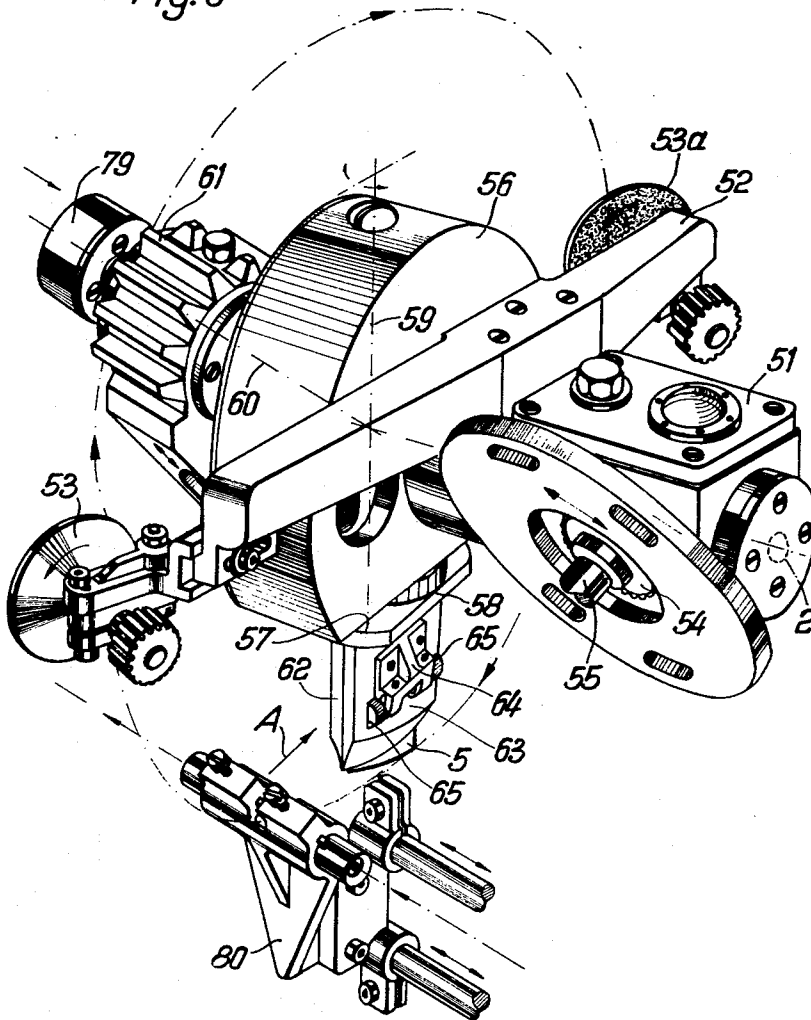
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KNIFE MOUNTING FOR CIGARETTE ROD CUTTERS

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Fig. 6



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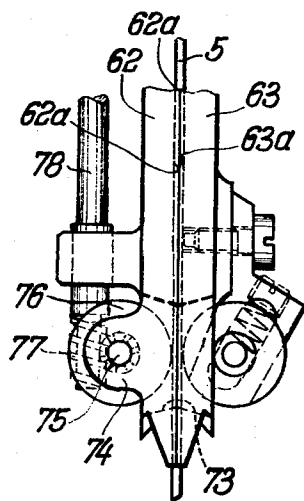


Fig. 8

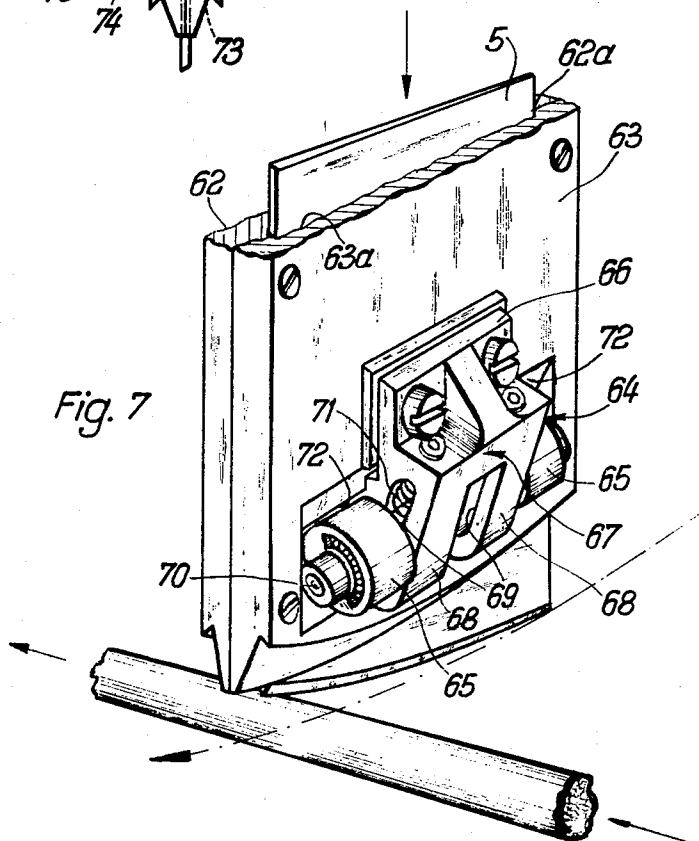


Fig. 7

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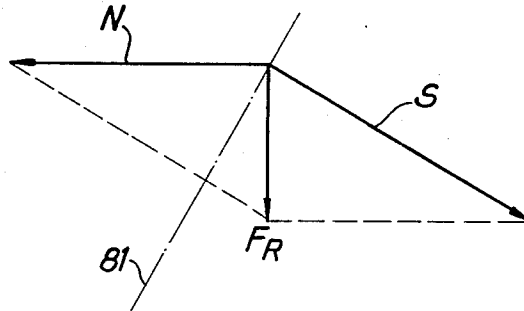


Fig. 9

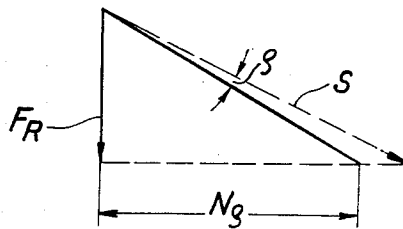


Fig. 10

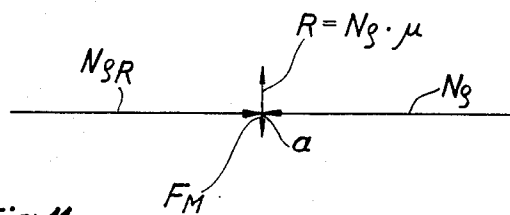


Fig. 11

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KNIFE MOUNTING FOR CIGARETTE ROD CUTTERS

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H 42,880

18 Claims. (Cl. 146—95)

The present invention relates to a knife support for cutting devices in rod making machines, particularly in cigarette rod manufacturing machines, whereby the term "rod making machines" is intended to encompass any rod making machines on which are made rods for cigarettes, cigars, cigarillos, short cigars with and without mouthpiece, rods for filling smoking tobacco packages, as well as rods for mouthpiece parts thereof with and without filter material. This term is also applicable to combined rods composed of several rod parts of different types, whereby the combined parts may also be of rod parts of the same type but of different filler material, for example, rods for making multiple filter fillers.

In such machines, cutting mechanisms are used for cutting rod pieces which consist of a knife holder fastened to a rotating shaft, of a knife or cutting blade displaceable in the knife holder, and of an abutment pressure means which clamps or secures the knife blade within the knife holder.

Furthermore, devices are known in the prior art in which the radially displaceable knife is fed or advanced by means of a rack-and-pinion drive serving simultaneously to hold the knife in place. However, in such devices, the knife is secured to the feeding means and the fastening means for the knife have to be removed for purposes of exchanging the knife. In these prior art devices, an abutment pressure means is not absolutely necessary, as the displacement of the knife blade is prevented by locking of the feeding means. A pressure means according to the present invention might, however, become of importance in such devices, particularly at high rotational speed.

At very high rotational speeds, the required abutment pressure is extremely large because the centrifugal force of the knife increases as the square of the speed of rotation. It has been attempted to greatly strengthen the springs of the prior art abutment pressure means; however, this is possible only up to a certain rotational speed because therebeyond, the large abutment pressure of the necessary springs would bend the entire knife holder during exchange of the knife. For it is necessary during such exchange to push away the springs, and the knife holder then has to serve as counter bearing. Additionally, the large weight of the necessary springs and the corresponding rigidity of the knife support required as a result thereof, in turn, entail an unnecessarily large weight of all the rotating parts of the cutting mechanism. Since these parts carry out a tumbling movement, there will occur correspondingly large and extremely undesired bearing forces in such cutting mechanism as proposed heretofore in the prior art.

The required large abutment pressure at relatively high rotational speeds is produced in the cutting mechanism according to the present invention by moving the abutment pressure means under the influence of the centrifugal force in the direction toward the knife blade to thereby clamp the latter ever more strongly.

It is proposed in one embodiment according to the present invention to render the pressure means movable obliquely in the direction toward the knife blade and to

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produce the centrifugal force directly by the mass forming part of the abutment pressure means.

In another embodiment of the cutting device according to the present invention, the abutment pressure means is pivotally connected to the free end of a lever whose pivot bearing, rotatable at the knife holder, is located, in the radial direction, between the axis of rotation of the cutting mechanism and the abutment pressure point on the side of the knife holder opposite the abutment pressure point.

If the abutment pressure means cannot be accommodated directly on the knife blade with a mass corresponding to the required abutment, then there are provided, according to a further feature of the present invention, an additional movable mass producing the centrifugal force and transmitting means which transmit the centrifugal force effect of this additional mass to the abutment pressure means.

A simple arrangement of the last-mentioned embodiment consists of an angularly-bent, two-armed lever, to one end of which is secured the abutment pressure means and to the other end of which is secured the additional mass, whereby the arm of the lever carrying the additional mass is so arranged with respect to the plane of rotation of the axis of rotation that there results a centrifugal force moment which presses the abutment pressure means against the knife blade.

The present invention is particularly suitable for knife mountings or knife supports, the knife holders of which are provided with a radial slot for receiving the knife blade and with apertures which are directed toward the long sides of the slot and through which extend pressure rollers abutting against the knife blade, whereby the one of these rollers, namely the driven roller, is rotatable in a form-locking manner, and the other roller is freely rotatable and adapted to be pressed against the knife blade. In this embodiment, the support for the freely rotatable roller is, according to the present invention, displaceably arranged within a guide extending obliquely toward the slot the end of which opposite the shaft of rotation of the cutting mechanism approaches the slot.

The guide is constructed in a preferred embodiment according to the present invention as a slotted guide in which is displaceable the shaft of the abutment or pressure roller.

In order to retain the shaft of the abutment or pressure roller continuously in the abutment position thereof against the knife blade, resilient means engage the shaft of the abutment or pressure roller and press the latter in the direction toward the slot.

The resilient means preferably consist of a pressure spring which engages, at a point between two pressure rollers arranged at a distance from each other, the shaft of the pressure rollers and is supported in the guide constructed as longitudinal slot.

Accordingly, it is an object of the present invention to provide a knife holder for cutting mechanisms in rod making machines of the type described hereinabove which obviates the shortcomings and inadequacies of the prior art constructions.

It is another object of the present invention to provide a knife holder retaining therein a knife blade for cutting mechanisms of the type described hereinabove adapted to rotate at relatively high speeds in which a positive connection between the knife blade and the knife holder is eliminated, without impairing the safe securing of the knife blade within the knife holder notwithstanding the high centrifugal forces that occur in the cutting mechanism.

Still another object of the present invention resides in the provision of a knife holder so constructed and arranged as to securely hold the knife blade in position even at high

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rotational speeds yet enabling greatly facilitated exchange of the knife blades.

A further object of the present invention resides in the provision of a knife holder construction provided with abutment pressure means to hold the knife blade securely in position during high rotational speeds which obviates the need for very strong springs as well as for sturdy holder parts to withstand the bending forces that may occur within the holder, particularly during exchange of the knife blade.

Still a further object of the present invention resides in the provision of a knife holder for supporting and holding a knife blade, forming part of a cutting mechanism used in rod making machines, in which the knife blade is held securely in position during rotation of the cutter mechanism substantially exclusively by components of centrifugal forces produced within the rotating knife holder itself.

Another object of the present invention resides in the provision of an improved support means for a knife blade of a cutting mechanism of the type described hereinabove in which the weight of the parts is kept at a reasonably low magnitude to thereby minimize excessive forces, particularly in the bearings thereof.

These and other objects, features and advantages of the present invention will become more obvious from the following description when taken in connection with the accompanying drawing, which shows, for purposes of illustration only, six embodiments in accordance with the present invention, and wherein

FIGURE 1 is a partial perspective view of a knife holder having a pivotal abutment or pressure roller and an additional mass engaging the pivot level of the pressure roller at a point above the pressure roller;

FIGURE 2 is a partial perspective view of a modified embodiment of a knife holder having a knife blade and a pressure roller displaceable obliquely to the holder;

FIGURE 3 is a partial perspective view of a further modified embodiment of a knife holder having a knife blade and a pivotal pressure roller;

FIGURE 4 is a partial perspective view of another embodiment of a knife holder having a pivotal pressure roller and an additional mass engaging the pivot or swinging lever at a point below the pressure roller;

FIGURE 5 is a partial perspective view of a further embodiment of a knife holder having a driving roller pivotally arranged at a knee-type or toggle lever and an additional mass on the joint of the knee-type lever;

FIGURE 6 is a perspective view of a cutting mechanism of a cigarette rod making machine with a cutting tube coordinated thereto;

FIGURE 7 is a partial perspective view, on an enlarged scale, of a part of the knife holder of the cutting mechanism shown in FIGURE 6;

FIGURE 8 is a side elevational view of the knife holder of FIGURES 6 and 7, taken in the direction of the arrow A in FIGURE 6, and

FIGURES 9, 10 and 11 are diagrams corresponding to the abutment pressure means shown in the embodiment of FIGURES 6 through 8.

Referring now to the drawing, wherein like reference numerals are used throughout the various views to designate corresponding parts, and more particularly to FIGURE 1, reference numeral 1 designates in this figure the knife holder which is fastened in any suitable manner to a drive means including a rotating shaft 2 driven at relatively high speed. The front part of the knife holder 1 is provided with a U-shaped yoke 3 providing a slot 4 in which is displaceable the knife blade 5 so that one side of the knife blade is adjacent to the vertical portion of the holder 1. Projections 6 are secured above the U-shaped yoke 3 along the narrow sides of the knife holder 1, and a pivot shaft 8 is inserted into the bores 7 provided in the projections 6. A bow-shaped angle lever or bellcrank 9 is swingingly disposed on the pivot shaft 8. An abutment or pressure roller 11 is rotatably supported in the ends of

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the leg portions 10 of the bellcrank 9. A pin 12 is secured to the web portion of bellcrank 9, and a block 13 is slid over pin 12 and clamped in position by means of a set screw 14. The parts 9-14 together constitute a pressing means for the knife blade 5 and the roller 11 of this pressing means abuts against the exposed side of the blade. The shaft 8 and the projections 6 form a mounting means for the pressing means 9-14 and are carried by the shift 2 through the intermediary of the holder 1.

Operation

The operation of the embodiment of FIGURE 1 is as follows:

When the rotary shaft 2 is driven, the knife holder 1 is also rotated at a high speed about the axis of the shaft 2. By reason of this rotation, the block 13 is pressed in the direction of the arrow 15 due to the centrifugal force, whereby the abutment or pressure roller 11 is pressed against the right-hand side of the knife blade 5 in the direction of the arrow 16. The higher the speed of rotation of the rotary shaft 2, the larger is the centrifugal force caused by block 13 and therewith the abutment pressure with which the pressure roller 11 is pressed against the knife blade 5 at the pressure point *a*. The knife blade 5 which seeks to carry out a movement in the direction of the arrow 22 with an increase of the rotary speed due to the centrifugal force, is thus prevented from any displacement by the correspondingly increased abutment pressure of the pressure roller 11 which presses the left-hand side of the blade against the adjacent portion of the holder, so that the blade is clamped between the holder and the roller 11.

In FIGURES 2-5, which illustrate different embodiments, the parts corresponding to those illustrated in FIGURE 1 have been included to the extent they are mentioned in the respective descriptive text.

In the embodiment according to FIGURE 2, pressure rollers 17 together with the common shaft 18 thereof are supported at an inclined control surface 19 of a guide means 20 fastened on the knife holder 1. This guide means 20 is secured to the U-shaped yoke 3 of the knife holder 1.

Operation

The operation of the knife support of FIGURE 2 is as follows:

During rotation of the knife holder 1, the shaft 18 is pressed radially outwardly in the direction of the arrow 21 due to the centrifugal force. During such radially outward displacement, the shaft rolls along the guide surface 19 whereby the rollers 17 are pressed against the knife blade 5 with great force and thereby prevent movement thereof in the direction of the centrifugal force indicated by arrow 22.

The knife support according to FIGURE 3 consists of the pressure roller 11 which is rotatable about a shaft 23 which, in turn, is secured to the ends of levers 24 and 25. The free ends of these levers 24 and 25—only the free end of lever 24 being shown in the drawing—are pivotable about pivot bolts 26 which are secured in projections 27 of the knife holder 1.

Operation

The operation of this knife support of FIGURE 3 takes place in such a manner that, during rotation of the knife holder 1, the pressure roller 11 is pivoted obliquely downwardly in the direction of the arrow 28 due to the centrifugal force, and the knife blade 5 is thus pressed against the knife holder 1.

In the embodiment according to FIGURE 4, the pressure roller 11 is rotatable on a shaft 23 which is fastened in the arms 29 and 30 of bellcranks 31 and 32 the other arms of which—only arm 35 being visible in FIGURE 4—engage an additional block 36. The bellcranks 31 and 32 are pivotally supported at the apices thereof about pivot bolts 33 and 34.

Operation

The operation of the knife support according to FIGURE 4 is as follows:

During rotation of the knife holder 1, the block 36 is pressed in the direction of the arrow 37 due to the centrifugal force. The pressure roller 11 exerts an abutment pressure in the direction of the arrow 38 on the knife blade 5 by means of bellcranks 31 and 32.

The embodiment of the knife support according to FIGURE 5 is as follows:

The pressure roller 11 is pivotally supported about a shaft 23 which is located at the free ends of the two levers—only lever 39 being visible in FIGURE 5 of the drawing—of two toggle or knee type joints generally designated by reference numerals 40 and 41. The other levers 42 and 43 of the knee-type joints 40 and 41 are pivotally supported about a pivot shaft 45 with the ends thereof opposite from the knee-type joint shaft 44, and the pivot shaft 45 is supported in base plates 46 and 47. The base plates 46 and 47 constitute the two leg portions of the knife holder 1 which is U-shaped in this particular area. A block 48 is mounted on the knee-type joint shaft 44.

Operation

The operation of the knife support according to FIGURE 5 is as follows:

During rotation of the knife holder 1, the block 48 is pressed in the direction of the arrow 49 due to the centrifugal force. As a result thereof, the knee-type joint presses the pressure roller 11 in the pivot direction 50 of the lever 39 against the knife blade 5.

All of the five aforementioned embodiments show that the abutment pressure means will be pressed more firmly against the knife blade 5 by the centrifugal force with an increase in the rotative speed of the knife holder 1. Instead of the pressure roller 11, a pressure plate may also be used in the embodiments of FIGURES 1 and 3-5, which is pivotal about the shaft 23.

In the embodiment according to FIGURE 2, there are provided as abutment pressure means, when using a pressure plate, one or two obliquely extending parallel guide means corresponding to the guide means 20, and guide elements, for example, rotatable rollers fastened to the pressure plate, are guided in such obliquely extending guide means.

The knife supports or mountings according to FIGURES 6 through 8 resemble that of FIGURE 2.

FIGURE 6 shows a cutting mechanism of a cigarette rod making machine in which the rotary shaft 2 (FIGURE 1) is shown in a dotted line. The cutting mechanism consists essentially of a drive housing 51 to which is secured a grinding wheel mounting 52 provided with a grinding wheel or disk 53 and a honing disc 53a. The rotary shaft 2 is rotatably mounted in this drive housing 51 and is driven through a bevel gear 54 from a drive shaft 55. A knife carrier or knife support 56 is mounted on the rotary shaft 2, and secured to the flattened portion 57 thereof is a knife holder 58 which is pivotal about an axis 59, shown in dash lines. The knife holder 58 is pivoted by means of a Cardan or universal joint (not shown) whose Cardan shaft is indicated by reference numeral 60, and more particularly, the pivot action takes place at the point of intersection of the axis of rotation of rotary shaft 2, of the pivot axis 59 and of the hollow shaft 60 of the Cardan or universal joint which shaft 60 is rotatable in an adjustable bearing 61.

In that case, the knife holder 58 is provided with a receiving portion 62 having a groove 62a (FIGURES 7 and 8) and with a counter plate 63 with a groove 63a (FIGURES 7 and 8). The knife blade 5 is displaceable within the slot formed by complementary grooves 62a and 63a. An inclined guide means generally designated by reference numeral 64 for the pressure rollers 65 is secured to the counter-plate 63. A cutting tube 80 is

adapted to move to and fro, in a manner known per se, below the cutting mechanism so far described.

The inclined guide means 64 producing the abutment pressure to the knife blade 5 will now be described in detail with reference to FIGURES 7 and 8.

The inclined guide means 64 consists, according to FIGURE 7, of a lug portion 66 terminating in a U-shaped part 67 into the two sides 68 of which are milled longitudinal slots 69 in alignment with one another. A shaft 70 common to rollers 65 is displaceably supported in slots 69. Pressure springs 71 press the rollers 65 through apertures 72 provided in the counter plate 63 and thereby retain the rollers 65 in abutment with the knife blade 5. On the side opposite the rollers 65, the receiving portion 62 is provided with bearing projections 74 (FIGURE 8) into which engages a shaft 75 of adjusting rollers 76, which extend through apertures 73 in the receiving portion 62. The adjusting rollers 76 are adjusted over a worm drive 77 by means of an adjusting shaft 78. The control impulse is imparted to the adjusting shaft 78 by actuation of the adjusting knob 79 (FIGURE 6), transmitted through any conventional adjusting transmission (not shown).

Operation

The operation of the installation according to FIGURES 6 through 8 will now be explained by reference to the diagrams according to FIGURES 9 to 11.

The centrifugal force F_R (FIGURE 9) which is produced by rotation of the cutting mechanism and which is transmitted to the pressure rollers 65, produces two forces, namely

1. the abutment pressure N of the pressure rollers 65 at right angle to the knife blade 5, and
2. a support pressure S at right angles to the direction of the longitudinal slots 69, represented by a dash-dot line 81 in FIGURE 9.

Taking into consideration the frictional forces in the longitudinal slots 69 (see diagram FIGURE 10), the normal component N is decreased, since the friction angle $\rho = \tan^{-1} \mu$ reduces the normal component N to $N \rho$ (FIGURE 10). The actual abutment pressure (normal pressure) $N \rho$, to which is opposed a corresponding reaction pressure $N \rho_R$ (FIGURE 11), produces with the friction factor μ a frictional force R opposed to the direction of centrifugal force of the knife blade 5. This frictional force $R = N \rho \cdot \mu$ must be greater than the centrifugal force F_M , which is produced as a result of the rotation from the existing weight of the knife blade 5.

In the illustrated embodiment, the pressure rollers 65 act on the knife blade 5 in a force-locking manner so that there is produced the effective frictional force R between the knife blade 5 and the form-lockingly driven adjusting rollers 176. When using bronze as material, a value 0.1 was determined for μ (adjusting roller 76/knife blade 5). The product $N \rho \cdot \mu$ always has to be greater than F_M , i.e., greater than the centrifugal force produced by the knife blade 5. This centrifugal force F_M is calculated from the known formula $F_M = m_M \cdot r_s \omega^2$, whereby m is the mass of the knife blade 5, r_s the distance of the center of gravity of the knife blade from the axis of rotation of shaft 2 and ω the angular velocity of the knife carrier. Accordingly, for a knife weight of 9.5 g. one obtains $F_M = 8.3$ gr., with the knife weight reduced to the center of gravity of the pressure rollers and

$$\frac{w^2}{g}$$

g being the earth's acceleration. Consequently, the required normal pressure ($N \rho$) with $\mu = 0.1$ has to amount to more than 83 g. For the sum (slot inclination $\alpha +$ frictional angle ρ) = 20° and 37 gr. pressure roller weight, a normal pressure of 100 gr. is obtained, i.e., in that case, there is obtained a safety of about 20% against flying out of the knife. The measurements made during tests have

shown that F_M at $n=2000$ r.p.m. is 5.5 kg. so that an abutment pressure of 55 kg. was required. The actual abutment pressure as measured, however, amounted, in the last-described embodiment, to 65 kg.

While I have shown and described six embodiments in accordance with the present invention, it is understood that the same is not limited thereto, but is susceptible of many changes and modifications within the spirit and scope thereof as known to a person skilled in the art, and I therefore do not wish to be limited to the details shown and described herein, but intend to cover all such changes and modifications as are encompassed by the scope of the appended claims.

I claim:

1. A knife mounting in cutting mechanisms for rod making machines provided with a rotatably supported shaft, having an axis of rotation, comprising knife holder means secured to said shaft, knife blade means displaceably arranged at said knife holder means, and abutment means for clampingly securing said knife blade means in said knife holder means, and means operatively connecting said abutment means with said knife holder means including lever means, first pivot means pivotally supporting said abutment means on said lever means near one of the ends thereof, and second pivot means pivotally securing said lever means near the other of the ends thereof at said knife holder means, said abutment means being movable under the influence of the centrifugal force in the direction toward said knife blade means to thereby increasingly clamp the latter with increasing centrifugal forces.

2. A knife mounting in cutting mechanisms for rod making machines provided with a rotatably supported shaft having an axis of rotation, comprising knife holder means secured to said shaft, knife blade means displaceably arranged at said knife holder means, and abutment means for clampingly securing said knife blade means in said knife holder means, and means operatively connecting said abutment means with said knife holder means including lever means, first pivot means pivotally supporting said abutment means on said lever means near one of the ends thereof, and second pivot means pivotally securing said lever means near the other of the ends thereof at said knife holder means, said second pivot means being located between said axis of rotation and the point of abutment contact of said abutment means with said knife blade means on the side of said knife holder means opposite said point of abutment contact, said abutment means being movable under the influence of the centrifugal force in the direction toward said knife blade means to thereby increasingly clamp the latter with increasing centrifugal forces.

3. A knife mounting in cutting mechanisms for rod making machines provided with a rotatably supported shaft having an axis of rotation, comprising knife holder means secured to said shaft, knife blade means displaceably arranged at said knife holder means, and abutment means for clampingly securing said knife blade means in said knife holder means, and means operatively connecting said abutment means with said knife holder means including lever means, first pivot means pivotally supporting said abutment means on said lever means near one of the ends thereof, and second pivot means pivotally securing said lever means near the other of the ends thereof at said knife holder means, said second pivot means being located between said axis of rotation and the point of abutment contact of said abutment means with said knife blade means on the side of said knife holder means opposite said point of abutment contact, said abutment means being movable under the influence of the centrifugal force obliquely in the direction toward said knife blade means to thereby increasingly clamp the latter with increasing centrifugal forces, and said centrifugal force being produced by the mass of said abutment means itself.

4. A knife mounting in cutting mechanisms for rod making machines provided with a rotatably supported shaft having an axis of rotation, comprising knife holder means secured to said shaft, knife blade means displaceably arranged at said knife holder means, and abutment means for clampingly securing said knife blade means in said knife holder means, and means operatively connecting said abutment means with said knife holder means including lever means, first pivot means pivotally supporting said abutment means on said lever means near one of the ends thereof, and second pivot means pivotally securing said lever means near the other of the ends thereof at said knife holder means, said abutment means being movable under the influence of the centrifugal force obliquely in the direction toward said knife blade means to thereby increasingly clamp the latter with increasing centrifugal forces, and said centrifugal force being produced by the mass of said abutment means itself.

5. A knife mounting in cutting mechanisms for rod making machines having a rotatably supported shaft, comprising knife holder means secured at said shaft, knife blade means displaceably arranged at said holder means, abutment means for clampingly securing said knife blade means in said knife holder means, and means for displacing said abutment means in the clamping direction toward said knife blade means under the influence of the centrifugal force to thereby increasingly clamp said knife blade means with increasing centrifugal forces including a separate mass subjected to the influence of centrifugal force and transmitting means effectively transmitting the centrifugal force effect of said additional mass to said abutment means, said transmitting means including a two-armed lever subtending an angle between the two arm portions thereof, said abutment means being secured near one end of said lever and said additional mass near the other end thereof, the arm portion of said lever supporting said additional mass being so arranged in relation to the axis of rotation of said rotatably supported shaft that a centrifugal moment is produced seeking to press said abutment means against said knife blade means.

6. A knife mounting in cutting mechanisms for rod making machines having a rotatably supported shaft, comprising knife holder means secured at said shaft, knife blade means displaceably arranged at said holder means, abutment means for clampingly securing said knife blade means in said knife holder means, and means for displacing said abutment means in the clamping direction toward said knife blade means under the influence of the centrifugal force to thereby increasingly clamp said knife blade means with increasing centrifugal forces including a separate mass subjected to the influence of centrifugal force and transmitting means effectively transmitting the centrifugal force effect of said additional mass to said abutment means, said transmitting means including knee-type lever means having two lever elements pivotally connected with each other near one end of each of said lever elements, said additional mass being supported at said last-mentioned pivotal connection, and the other end of one of said lever elements being pivotally supported in said knife holder means and the other end of the other lever element supporting said abutment means.

7. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means being provided with apertures, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means for said shaft portion extending at an inclination toward said slot, the end of said guide means which is disposed

opposite the axis of rotation of the rotatable knife mounting approaching said slot.

8. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means having relatively narrow and wide sides and being additionally provided with apertures in said wide sides, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means for said shaft portion extending at an inclination toward said slot, the end of said guide means which is disposed opposite the axis of rotation of the rotatable knife mounting approaching said slot.

9. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means having relatively narrow and wide sides and being additionally provided with apertures in said wide sides, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means constructed as slotted guide for displaceably receiving therein said shaft portion, said slotted guide extending at an inclination toward said first-mentioned slot, the end of said guide means which is disposed opposite the axis of rotation of the rotatable knife mounting approaching said slot.

10. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means having relatively narrow and wide sides and being additionally provided with apertures in said wide sides, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means constructed as slotted guide for displaceably receiving therein said shaft portion, said slotted guide extending at an inclination toward said first-mentioned slot, the end of said guide means which is disposed opposite the axis of rotation of the rotatable knife mounting approaching said slot, and resilient means acting on said shaft portion and seeking to press said other abutment roller means in the direction toward said first-mentioned slot.

11. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means having relatively narrow and wide sides and being additionally provided with apertures in said wide sides, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means constructed as slotted guide for displaceably receiving therein said shaft portion, said slotted guide extending at an inclination toward said first-mentioned slot, the end of said guide means which is disposed opposite

the axis of rotation of the rotatable knife mounting approaching said slot, and resilient means acting on said shaft portion and seeking to press said other abutment roller means in the direction toward said first-mentioned slot, said resilient means consisting of a compression spring disposed between two of said other abutment roller means and acting on said shaft portion, said compression spring being supported within a portion of said guide means constructed as longitudinal slot.

12. A rotatable knife mounting for a knife blade subjected to relatively high rotational speeds, comprising support means provided with a radial slot for receiving therein the knife blade, said support means being provided with apertures, abutment roller means for said knife blade which extend through said apertures, means for form-lockingly pressing one of said abutment roller means against the knife blade and means for force-lockingly pressing the other abutment roller means against the knife blade, said other roller means being freely rotatable and provided with a shaft portion, and inclined guide means constructed as slotted guide for displaceably receiving therein said shaft portion, said slotted guide extending at an inclination toward said first-mentioned slot, the end of said guide means which is disposed opposite the axis of rotation of the rotatable knife mounting approaching said slot, and resilient means acting on said shaft portion and seeking to press said other abutment roller means in the direction toward said first-mentioned slot.

13. A knife mounting for cutting mechanisms of rod making machines, comprising rotary drive means arranged to rotate about a predetermined axis; knife means having a first side and a second side; holder means connected for rotation with said drive means and having a portion adjacent to one side of said knife means; pressing means adjacent to the other side of said knife means; and mounting means for said pressing means, said mounting means being carried by said drive means for rotation at the speed of said holder means and said pressing means being movable toward said portion of said holder means by the action of centrifugal force when said mounting means rotates with said holder means so that said knife means is clamped between said holder means and said pressing means with a force which increases with increasing rotational speed of said drive means.

14. A knife mounting as set forth in claim 13, wherein said pressing means comprises a portion which is movable obliquely in a direction toward said other side of the knife means in response to centrifugal force produced by the mass of said pressing means.

15. A knife mounting as set forth in claim 13, wherein said pressing means comprises a portion which directly engages said other side of the knife means, a mass which tends to move radially outwardly by centrifugal force in response to rotation of said mounting means, and connecting means connecting said mass with said portion of said pressing means so that radial movement of said mass is terminated when said knife means is firmly clamped between the portions of said holder means and said pressing means.

16. A knife mounting as set forth in claim 13, wherein said mounting means is secured to said holder means.

17. A knife mounting as set forth in claim 16, wherein a portion of said mounting means is movable with respect to said holder means.

18. A knife mounting as set forth in claim 16, wherein said mounting means is rigid with said holder means.

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