

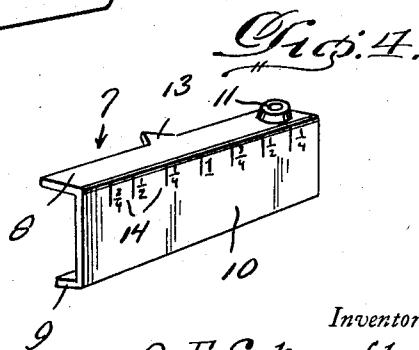
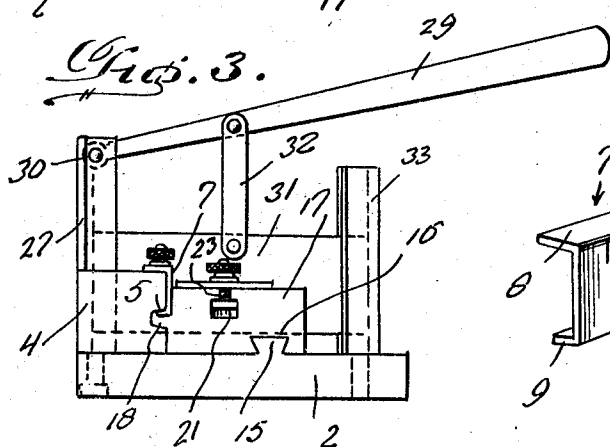
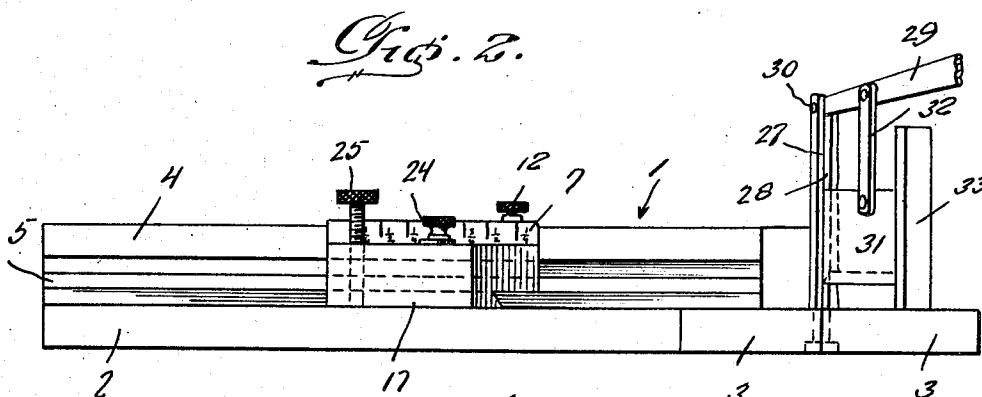
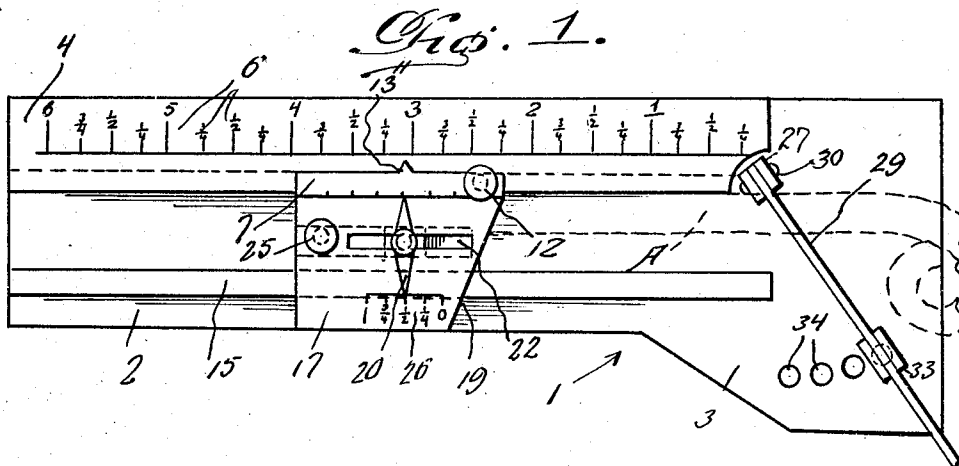
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PACKING MEASURING AND CUTTING DEVICE

Filed Oct. 22, 1927



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PACKING MEASURING AND CUTTING DEVICE

Application filed October 22, 1927. Serial No. 228,062.

The present invention relates to improvements in cutting devices and has reference more particularly to a cutter for use in cutting predetermined lengths of packing to be used in packing pump rods and the like.

One of the important objects of the present invention is to provide a packing cutter wherein means is provided for ascertaining certain measurements incident to the cutting of the packing to a particular size which length of packing that has been cut by the device may be bent to form a packing ring and sufficient clearance will be provided between the free ends of the ring.

A further object of the invention is to provide a device of the above mentioned character which is simple in construction, inexpensive, strong and durable and further well adapted to the purpose for which it is designed.

Other objects and advantages of the invention will become apparent from the following description taken in connection with the accompanying drawing.

In the accompanying drawing forming part of this application and wherein like reference characters indicate corresponding parts throughout the several views thereof:

Figure 1 is a top plan view of the packing cutter and measurer embodying my invention.

Figure 2 is a side elevation thereof.

Figure 3 is an end elevation looking in a direction toward the movable cutter knife, and

Figure 4 is a detail perspective view of the slidable channel shaped member forming a part of the present invention.

In the drawing wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates generally my improved packing cutter and measuring device, the same comprising a base 2 which is enlarged at one end as illustrated at 3. A substantially rectangular shaped strip 4 is secured on the upper face of the base adjacent the rear edge thereof and this strip extends from the rear end of the base to a point adjacent the forward end as is clearly illustrated in Figure 1.

This strip is formed in its front side with a longitudinally extending groove designated by the numeral 5 which groove extends for the full length of the strip and the purpose thereof will be presently apparent. The top face of this strip is provided with a scale 6 which scale is used to indicate rod sizes by diameters, the graduations on this scale being 3.1416 times the size of the graduations on an ordinary scale in inches so as to bear to the latter the same relation that the circumference of a circle bears to its diameter.

Slidable along the upper forward edge of this strip 4 is the channel shaped member shown at 7 in Figure 4. This channel shaped member comprises a strip of metal folded or bent back along its longitudinal edge portions to provide upper and lower flanges 8 and 9, respectively, and an interconnecting portion 10. The interconnecting portion will be disposed against the front face of the strip, while the upper flange 8 will slide along the upper face of the strip. The lower flange 9 is adapted for disposition in the groove 5 formed in the central portion of the front face of the strip and the manner in which this slidable member 7 cooperates with the strip 4 is clearly shown in Figure 3. An internally threaded boss 11 is arranged on the upper flange 8 adjacent one end thereof to receive the screw 12, the inner end of which engages the upper face of the strip 4 whereby to adjustably secure the slidable member 7 on the strip in any predetermined position. A pointed projection 13 extends from the intermediate portion of the upper flange 8 as clearly shown in Figures 1 and 4, and this projection provides a pointer for cooperation with the scale 6 arranged on the upper face of the strip 4 in the manner to be presently described.

The interconnecting portion 10 of this slidable member 7 is also provided with graduations 14 on the front face thereof and adjacent the top thereof. The scale 14 is used to designate packing sizes in widths and the distances shown on this scale are circumferences of circles; for example, one inch on this scale is 3.1416 inches from the zero point of this scale. The zero point of this scale is taken at the end of the slidable member near-

est the cutting blade, the construction of which will be presently described.

The zero point of scale 6 is established at a point coinciding to the adjacent end of the cutting blade.

A dove-tailed track 15 is formed on the upper face of the base 2 adjacent the forward edge thereof, and cooperating with this dove tailed track is the similar shaped slot formed in the bottom face of a block 17. The track and slot are designated by the numerals 15 and 16 respectively, and the same cooperate to provide a means for guiding the block 17 during its sliding movement along the upper face of the base. A projection or rib 18 is formed on the rear side of this slidable block, and is operable within the groove 5 formed in the front face of the strip 4 to further guide the block and maintain the same in proper position on the base. The forward end of this slidable block is cut at an angle and provides a packing engaging face 19 as clearly illustrated in Figure 1.

Carried by the upper face of this slidable block 17 is a double ended pointer 20, and in order that said pointer may be adjusted to any predetermined position on the upper face of said block, there is provided in the intermediate portion of the block a recess 21 which communicates with the upper face of the block through the medium of a restricted slot 22, the slot being of a width less than the width of the recess and this is clearly illustrated in Figures 1 and 3 of the drawing. A bolt 23 has its head slidable in this recess 21, the threaded shank of the bolt extending upwardly through the slot 22 and carrying at its upper end a thumb nut 24. This thumb nut will engage the upper face of the double ended pointer 20, and thereby hold the same in any predetermined adjusted position on the upper face of the slidable block.

The slidable block is furthermore adjustably secured in any predetermined position on the base 2 by means of the thumb screw 25, the same being threaded through the block and engaging the base.

The upper face of the block 17 is formed with a scale 26 adjacent the forward edge thereof and this scale represents clearance between the ends of the packing ring formed after a length of packing material has been cut to the particular size required.

The present invention further comprehends the provision of a vertically extending post 27 which is swivelly mounted at the forward enlarged end 3 of the base. This post extends upwardly above the strip and is located adjacent the forward end of said strip. The front face of this post is formed with a vertically extending channel 28. A hand lever 29 is pivotally secured at its inner end on the post 27 at the upper end thereof as at 30 and a cutting knife or blade 31 is operatively

connected to the intermediate portion of this pivoted lever 29 by means of a link 32.

A complementary post 33 is formed at its lower end with a dowel pin which is removably fitted in any one of a series of openings 34 formed in an arcuate manner in the forward portion of the enlarged forward end 3 of the base 2, and the inner face of this post 33 is also provided with a vertically extending channel complementary to the channel 28 formed in the front face of the swiveled post 27 whereby the respective ends of the cutting knife or blade 31 may be guided to insure the positive vertical movement of the cutting knife when the lever 29 is actuated.

The post 33 may be set in any one of the openings 34 so that the particular angle at which the packing is to be cut may be obtained. In the present instance, the face 19 is cut at an angle and the blade 31 is also disposed at substantially the same angle.

Variations in settings of the cutting blade do not necessarily require an individual or new block 17. The shorter end of all packing strips for a given condition are all of the same length, no matter at what angle the cutting blade is set; the longer end of the packing strip increases in length as the angle in which the blade is set increases, but the shorter end remains constant. Hence, if the face of the block 17 nearest the cutting blade is cut at an angle equivalent to the greatest angle being cut by the cutting blade, then this block will be proper at further angles so long as care is taken to have the shortest side of a packing strip tight to the point of contact of block 17 with strip 4, which insures a proper length of the packing strip being cut.

The use of my improved device may be briefly stated as follows: There are three facts that govern the length of a piece of packing to be applied to a given diameter rod or plunger: (1) The diameter of the rod or plunger; (2) The size of the packing stock to be used; (3) The gap between the ends of the packing ring after it is applied to the rod or plunger, sometimes called clearance. The proper length of a strip or ring of packing is determined from the following formula:

$3.1416 R \text{ plus } 3.1416 P \text{ minus } C$ in which:

R is the diameter of the rod or plunger.

P is the size of the packing stock width in inches.

C is the clearance.

The member 7 is moved along the forward edge portion of the strip 4 until the pointer 13 indicates the rod or plunger size on the scale 6. The movable member 7 is then locked against further sliding movement by the set screw 12. The double ended pointer 20 is then adjusted along the upper face of the slidable block 17 until the desired clearance is indicated by the pointer on the scale 26.

The pointer is then clamped in this adjusted position by tightening the thumb nut 24.

The zero point is located to the left of the line of cut a distance equal to the distance from the pointer 20 when the pointer is at zero on scale 26, to the edge of the block 17 nearest the cutting blade. This method of establishing the zero point will compensate for all apparent errors. The packing that is cut by the present device will be of trapezoidal shape.

The movable block 17 is slid along the track 15 on the upper face of the base 2 until the inner end of the double pointer 20 indicates the packing stock to be used on scale 14 arranged on the front face of the portion 10 of the slidable member 7. The block 17 is then clamped against sliding movement by tightening the thumb screw 25. Now all of the movable parts of the apparatus or device are clamped in properly adjusted position. One end of the packing A is inserted at the forward end of the device beneath the knife 31 until said end engages the face 19 of the slidable block 17. The free end of the lever 29 is then moved downwardly so that the sharpened lower edge of the blade will cut through the packing strip, thereby forming a packing ring of a predetermined size, and when the cut strip is formed in a circle or is wound around the rod being packed, the same will properly fit the rod and sufficient clearance will be provided between the adjacent ends of the strip.

It will thus be seen from the foregoing description that I have provided a novel measuring and cutting device which will at all times be positive and efficient in its operation, and due to its simplicity, the movable parts may be readily and easily adjusted.

While I have shown the preferred embodiment of my invention it is to be understood that minor changes may be made therein without departing from the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a device of the class described, a base, a strip on the upper face of the base at the rear edge portion thereof, said strip being provided with a scale representing rod diameters, a member slidable along the front face of the strip and having a scale thereon representing the size of packing material, a block slidable on the base in front of said strip, said block having a scale arranged on the top face thereof representing clearances, pointers for the respective scales and packing stock cutting means at one end of the base.

2. In a device of the class described, a base, a strip on the upper face of the base at the rear edge portion thereof, said strip being provided with a scale representing rod diameters, a member slidable along the front face of the strip and having a scale thereon

representing the size of packing material, a block slidable on the base in front of said strip, said block having a scale arranged on the top face thereof representing clearances, pointers for the respective scales, packing stock cutting means at one end of the base, and guide means for the slidable block.

3. In a device of the class described, a base, a strip on the upper face of the base at the rear edge portion thereof, said strip being provided with a scale representing rod diameters, a member slidable along the front face of the strip and having a scale thereon representing the size of packing material, a block slidable on the base in front of said strip, said block having a scale arranged on the top face thereof representing clearances, pointers for the respective scales, packing stock cutting means at one end of the base, and means for independently securing the slidable members in any predetermined adjusted position.

In testimony whereof I affix my signature.
ORWELL F. SCHOEPLFLE.

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