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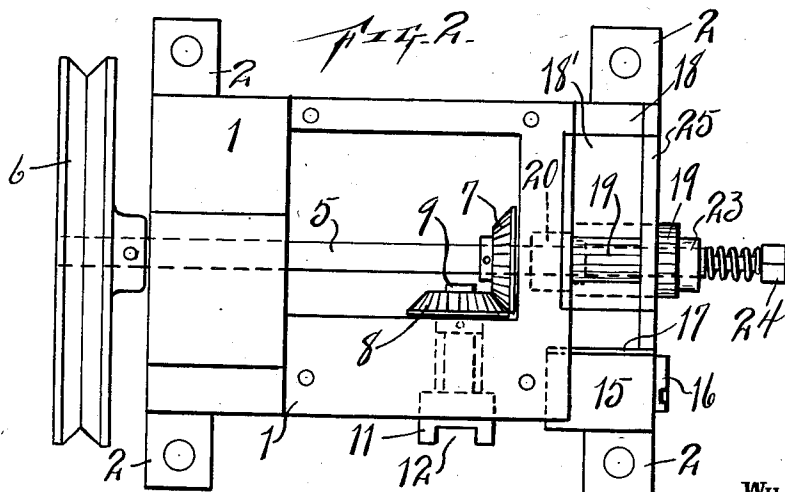
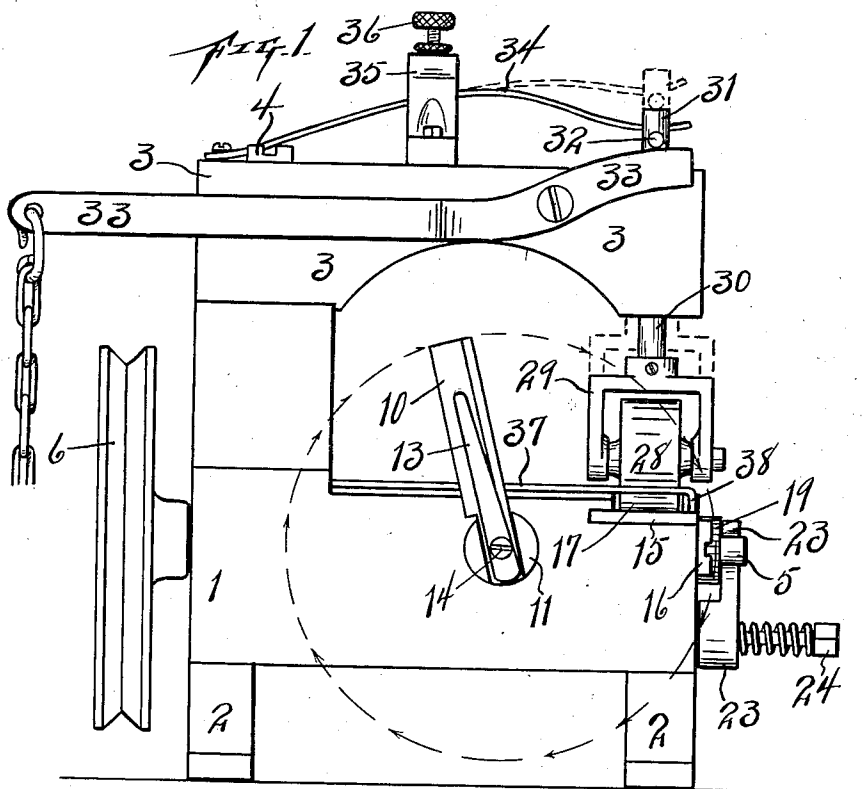
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2,051,491

LOOP CUTTER

Filed Nov. 29, 1930

2 Sheets-Sheet 1



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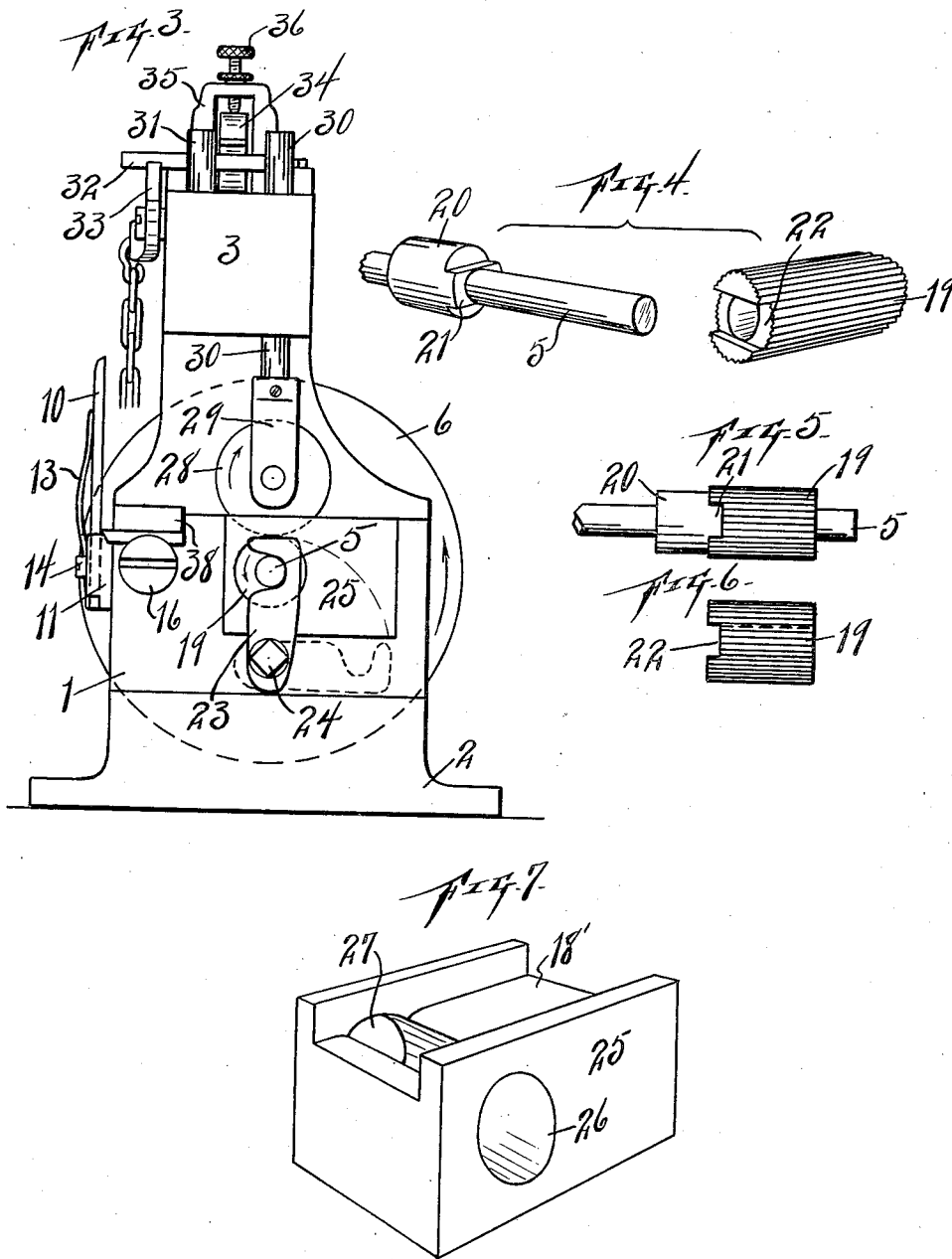
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2,051,491

LOOP CUTTER

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Application November 29, 1930, Serial No. 498,936

6 Claims. (Cl. 271-2.4)

This invention relates to loop cutters and has particular reference to a machine for use in factories where men's trousers are manufactured and where it is necessary to cut strips of material into predetermined lengths for the purpose of making loops for belts around the waist of said trousers and its principal object resides in the provision of an apparatus comprising a novel combination of parts by which strips of material may be cut into shorter lengths with rapidity and accuracy.

Another object of the invention resides in the provision of a mechanism whereby long strips of material can be passed therethrough without the aid or assistance of any human agency, other than the starting of the material through the mechanism, and which will automatically sever from such strips of material a multiplicity of shorter lengths.

Still another object of the invention is manifest in the provision of a device of the character described wherein are provided certain novel arrangements by which may be accomplished the severance of great numbers of short strips, the length of which can be predetermined, from strips of material of greater lengths.

Broadly, the invention comprehends a mechanism comprising a combination of parts capable of accomplishing the purpose above set forth, yet simple and inexpensive in construction and compact in form, and which by its use, a great saving of time and expense may be realized.

While the foregoing objects are paramount, other and lesser objects will become manifest as the description proceeds taken in connection with the appended drawings wherein:

Reference is had to the accompanying drawings which form a part of this application.

Fig. 1 is a side elevation of the machine assembled.

Fig. 2 is a plan view with the upper frame member removed for illustrating the inclosed gearing.

Fig. 3 is a front elevation of the machine assembled.

Fig. 4 is a perspective view of the drive shaft and the feed roller driven by the shaft.

Fig. 5 is a broken plan view, showing the coupling of the feed roller to a collar on the drive shaft.

Fig. 6 is a plan view of a roller, illustrating a larger size roller.

Fig. 7 is a perspective view of box or chuck for holding the feed roller in operative position.

In factories where it is necessary to cut material into short lengths and where large quantities

of such material are required it is desirable to afford some mechanical device to accomplish this. Much time is required to cut such strips by hand, using a pair of shears, or the like, making such operations expensive as well as undesirable for the reason that it is difficult to maintain absolute accuracy in the varying lengths of the material which sometimes result in waste.

Similar characters of reference are used to indicate the same parts throughout the several views.

The machine is provided with a base member 1 which is provided with flange supports 2 cast with the frame. The machine is provided with a top member 3 which is made rigid with the member 1 by bolts 4. A driving shaft 5 is journaled in the frame member 1. Shaft 5 is driven by a pulley 6 which is rigidly attached to the shaft. The member 1 is a hollow frame, providing space within the frame for gear wheels. A bevel gear wheel 7 is rigid with shaft 5 and shaft 5 drives wheel 7 and wheel 7 drives a gear wheel 8 which is rigid with a shaft 9 and drives this shaft. The shaft 9 drives the cutter blade 10. The shaft 9 has a flanged head 11 which has a slot 12 therein to receive the blade 10. The shank of the blade is placed in the slot 12 and a spring 13 is placed on the outside of the blade 10. A screw 14 binds the spring 13 and blade 10 in the slot in the head 11. A stationary blade 15 is mounted in a slot 30 in the frame member 1 to cooperate with the revolving blade 10. Blade 15 is held in place by a screw 16. For taking up wear of the blade 15, one or more shims 17 may be placed between the inner end of the blade and the back wall of its slot.

Means are provided for feeding the strips of cloth or woven tape past the blades 10 and 15. A transverse groove 18 is formed in the face of the member 1 for the passage of the cloth strip or tape. The tape or loop material is fed through the slot 18 by a milled driven roller 19 which is mounted on the shaft 5 and coupled to a collar 20. The collar 20 is rigid with the shaft 5 and has a rib 21 integral therewith and the roller 19 has a groove 22 to receive the rib 21. The roller 19 is held in place by a locking latch 23 which is mounted on a stud bolt 24 which is screwed into the frame member 1.

The feed roller 19 is carried in a box or chuck 25 which is mounted and horizontally disposed in a cavity in the frame member 1. The top of the block or chuck 25 is flush with the surface of the frame 1 and the chuck 25 has a groove 18' for the passage of the tape or cloth loop material.

The bottom of the groove 18' and the bottom of the groove 18 in the frame member are flush with each other, so that the loop material will not be obstructed in its passage to the blades 10 and 15.

5 The chuck 25 has a cylindrical opening 26 to receive the roller 19. The opening 26 is cut through the surface of the bottom of groove 18' so that the periphery of the roller 19 will project high enough to engage the loop material to force the material towards the blades 10 and 15. See 27 in Fig. 7.

10 In order to hold the passing loop making material in place, a roller 28 of yielding material is yieldingly mounted to press on the passing loop material. The roller 28 is journaled in a bracket 29 which is attached to and carried by a thrust rod 30 which is vertically disposed in the frame member 3 and the rod 30 is held in vertical position by the cylindrical opening through the member 3 and is prevented from binding by a similar but shorter rod 31 which is also mounted in a cylindrical opening in the member 3. A horizontal rod 32 is projected through the rods 30 and 31 and beyond the rod 31 to form a lift by which 25 a lever 33 can raise the two rods 30 and 31 and the roller 28. The lever 33 is fulcrumed on the frame member 3. The roller 28 is held yieldingly downward by a spring 34 which is attached at one end and at the other end rests on the rod 32. 30 The spring 34 projects through a bracket 35 which is attached to the frame member 3. A set screw 36 is screwed through the bracket 35 and bears on the spring 34 and more or less pressure can be put on the spring by means of the screw 36.

35 In operation, a roller 19 is mounted in the chuck 25 and the chuck with the roller is mounted in the cavity in frame member 1 and the roller 19 is turned manually or otherwise until the slot 22 engages the rib 21 of the coupling roller 20. The 40 loop material is run through the slots 18 and 18' to the blades 10 and 15. In order to run the loop material through the slots 18 and 18', it is necessary to raise the roller 28 by the lever 33. When the lever 33 is released, the roller 28 will be pressed on the loop material by the spring 34. 45 The machine is then started to running by the power wheel or pulley 6. This will drive shaft 5 and the roller 19 will feed the loop material to the blades 10 and 15 continuously. The blade 50 10 will be driven from the shaft 5 and will co-operate with the stationary blade 15 for cutting the loops. The variation in the lengths of the loops will be accomplished by using different sized rollers 19 and using different chucks 25 55 having larger openings 26 for the larger rollers.

A guard 37 is provided for guiding the loop forming material after the material leaves the groove 18. This guard is attached to the upper face of the frame member 1 and has a flange 38 60 to form one side of the passage way to the blades 10 and 15.

The purpose of the invention being to cut strips of material into predetermined lengths, it is necessary that the knurled roller make one revolution to one of the revolving knife 10 and, due to the arrangement of gears 7 and 8, this is accomplished. Obviously, by changing the size of the rollers 19 a section may be cut from the material of greater or lesser length, depending upon 70 the circumference of the feeding or knurled roller 19.

By providing several chucks 25, each having a different size passage 26 therethrough arranged

to allow its axial point to register with the shaft 5, feeding or knurled rollers 19 of varying sizes may be disposed therein. The only function of the roller 28 being to provide a tension upon the material to insure proper feeding through 5 the machine.

Although the invention has been described with great particularity, it is understood that it is not intended that the same shall be limited to the specific arrangement and construction of 10 parts and that certain changes and modifications may be resorted to from time to time as may fall within the scope and meaning of the appended claims.

What we claim, is,—

1. In a device for cutting strips of material into predetermined lengths, a base having a recess therein capable of receiving interchangeable chucks each of which is adapted to receive a feed roller of given size rotatably disposed 20 therein for advancing strips of material a predetermined distance before cutting.

2. In a device for cutting strips of material into predetermined lengths, a base and head, means in said base to receive interchangeable 25 chucks each having different sized annular passages therethrough to receive varying sized knurled feed rollers capable of advancing the material a distance equal to the circumference thereof to be cut. 30

3. In a device for cutting strips of material into predetermined lengths, a base and head, a recess in said base capable of receiving interchangeable chucks, each of said chucks having a 35 different sized annular passage therethrough in which are rotatably disposed knurled feed rollers of varying circumferences capable of advancing the said strips of material a distance equal to their circumferences before being cut into predetermined lengths. 40

4. In a device for cutting strips of material into predetermined lengths, a base and head, a recess in said base capable of receiving interchangeable chucks, a varying sized annular passage through each of the said chucks capable of 45 receiving feed rollers of different circumferences to advance the said material a distance equal to the circumferences of the said rollers upon each revolution thereof enabling said material to be cut into predetermined lengths. 50

5. In a device for cutting strips of material into predetermined lengths, a base and a head, a recess in the said base receiving interchangeable 55 chucks, each having a single bore of a different diameter rotatably receiving an interchangeable knurled feed roller of a circumference equal to that of the diameter of the said bores in the said chucks advancing the said strips of material a predetermined distance before being cut. 60

6. In a device for cutting strips of material into predetermined lengths, a base and a head, means in the said base to receive interchangeable 65 chucks, each having a single bore therethrough and each of the said bores varying in diameter and receiving a knurled feed roller of a circumference equal to the diameter of the said bores, the said feed rollers advancing the material to be cut a distance equal to the circumference of the said feed rollers. 70

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