

Sept. 29, 1925.

F. D. MALAGUTI

1,555,136

PRINTING ATTACHMENT FOR COUNTERSKIVING MACHINES

Filed Jan. 11, 1924

3 Sheets-Sheet 1

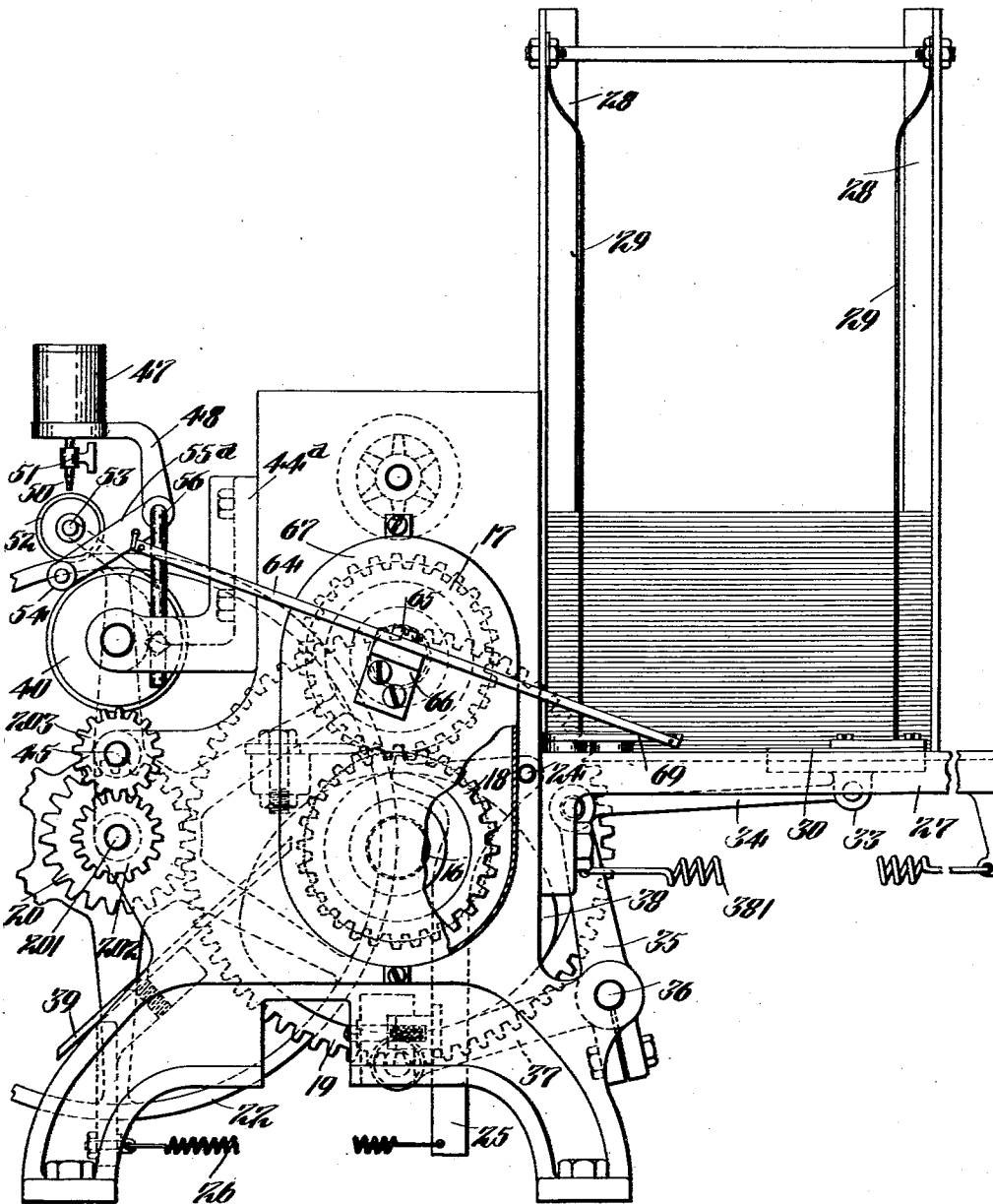


Fig. 1.

Inventor:
Fred D. Malaguti.
by Knight Brown Lundy & May
Attys.

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3 Sheets-Sheet 2

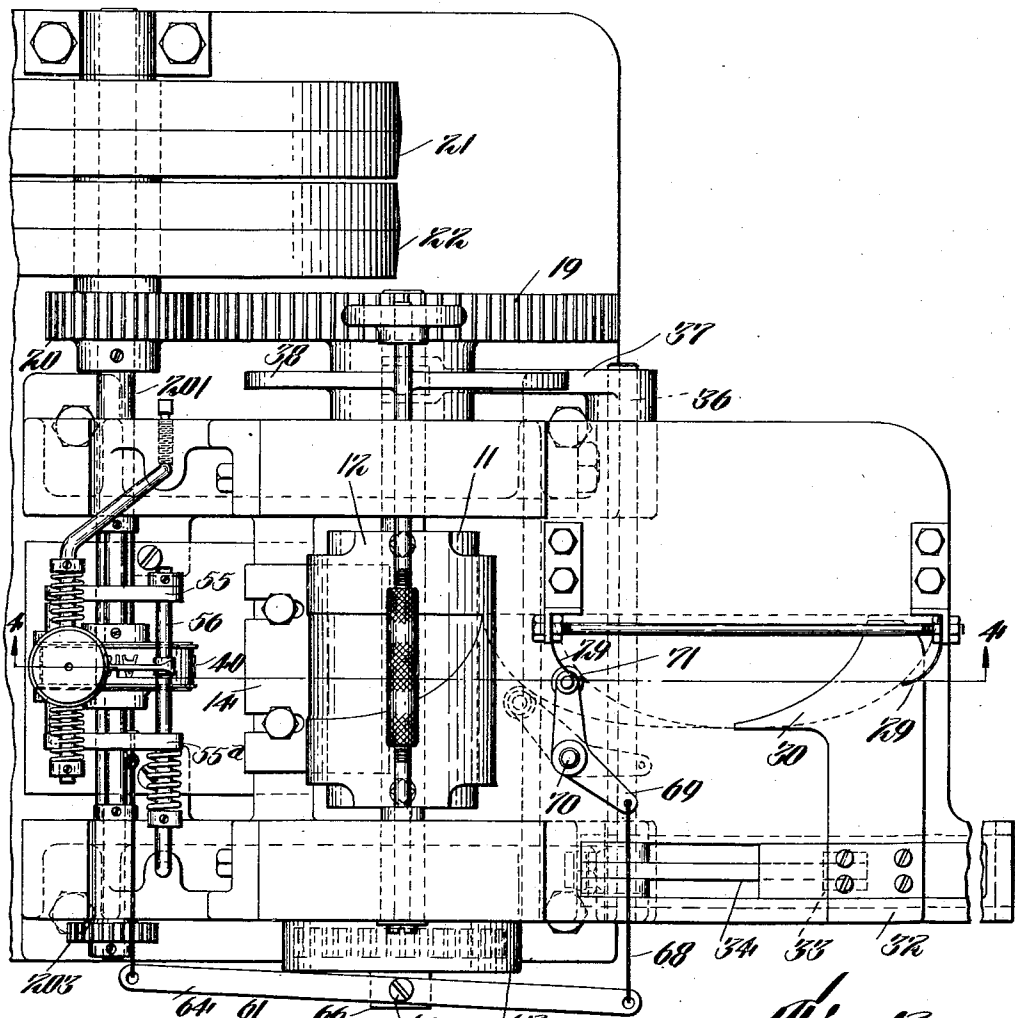


Fig. 2.

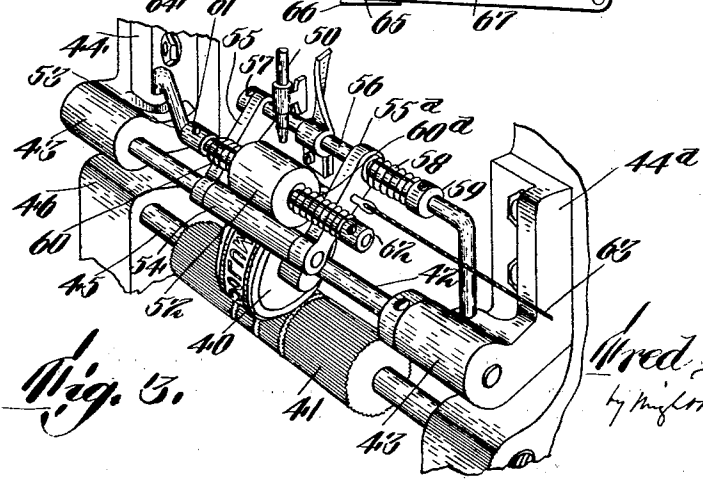


Fig. 3.

Inventor:
Fred D. Malaguti.
by *Myrl B. Brown* *himself* *Manager*
Attys:

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F. D. MALAGUTI

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3 Sheets-Sheet 3

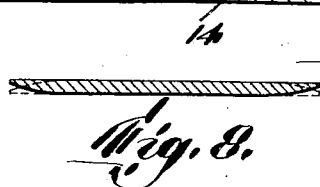
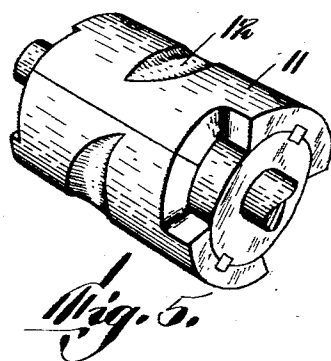
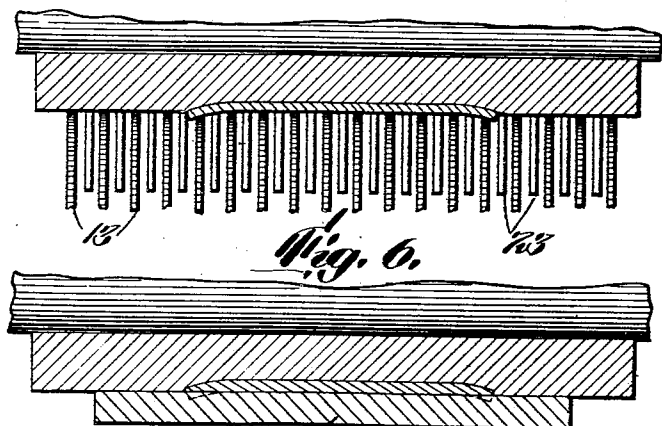
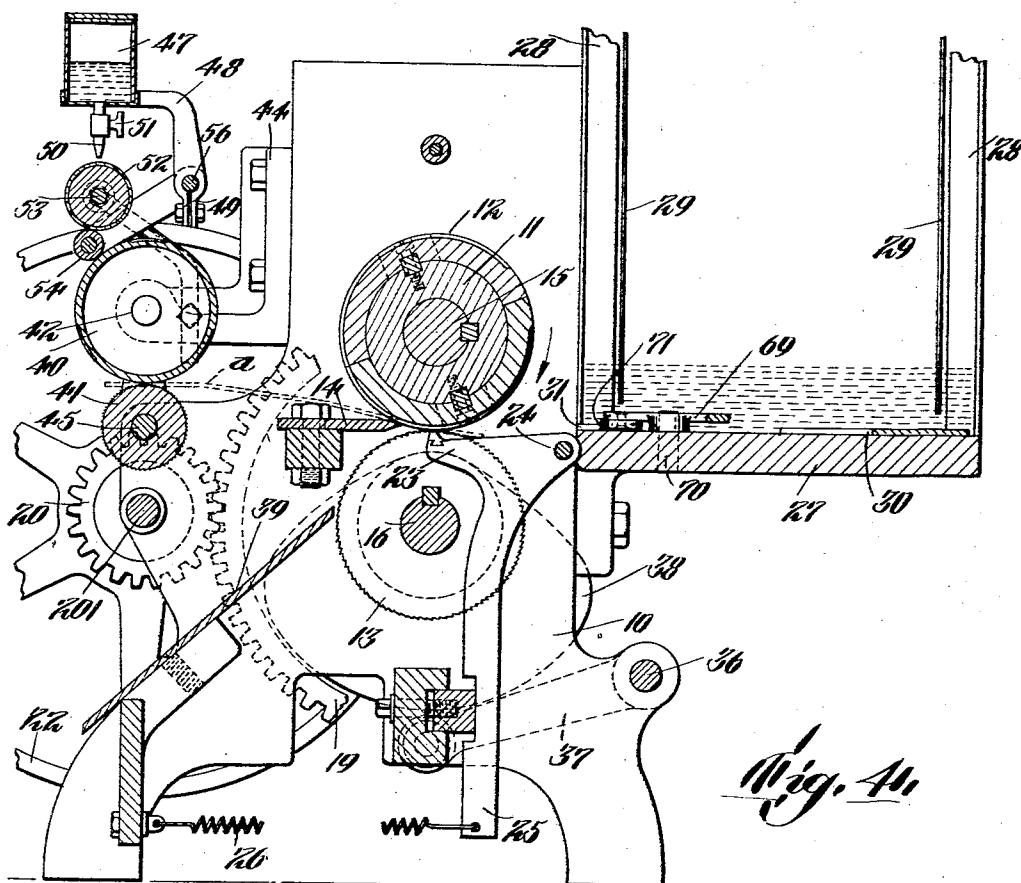


Fig. 7. Invention of Fred D. Malaguti.
by Knight Brown Lundy & May
Attys.

Patented Sept. 29, 1925.

1,555,136

UNITED STATES PATENT OFFICE.

FRED D. MALAGUTI, OF SOMERVILLE, MASSACHUSETTS.

PRINTING ATTACHMENT FOR COUNTERSKIVING MACHINES.

Application filed January 11, 1924. Serial No. 685,554.

To all whom it may concern:

Be it known that I, FRED D. MALAGUTI, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Printing Attachments for Counterskiving Machines, of which the following is a specification.

The object of the present invention is to provide means in combination with a counterskiving machine for printing on the counter as it issues from the machine after being skived. It is not important what the words or symbols imprinted on the counter may be, whether they indicate grades, sizes, qualities, or the maker's name, or what not. The important fact is that, as the skived counters are delivered from the machine, the desired symbols or words, or other devices are printed upon them.

A further important feature of the invention is that a part of the printing attachment is coupled with a part of the machine in such manner that it is operated in a specific way and for a certain purpose, only when counters are passed through the feeding rolls of the skiving machine, and does not operate when the counters are not fed, even though said rolls and the printing device of the printing attachment may be in operation. These specified parts which are thus connected for joint operation are, in the embodiment of the invention here illustrated, the feeding pusher of the skiving machine, and the ink-distributing roller for the printing device. But within the scope of the broad principles for which I seek protection, other parts of the mechanism may be similarly coupled and controlled one by the other.

The precise nature of the invention is more fully explained in the following specification in connection with the detailed description of one form of machine embodying these principles, which machine is illustrated in the drawings provided herewith.

In such drawings,—

Figure 1 is a front elevation of the machine referred to.

Figure 2 is a plan view of the machine.

Figure 3 is a perspective view of the printing attachment.

Figure 4 is a vertical central section of the machine.

Figure 5 is a perspective view of the matrix roll, which is one of the pair of

feeding rolls for a counter blank, and contains a recess or matrix in which the body of the counter blank is pressed while its edges are being skived by a stationary knife.

Figures 6 and 7 are fragmentary longitudinal views of the matrix roll and associated feeding means, illustrating the manner in which the counter blank is skived.

Figure 8 is a cross section of the skived counter, restored to the original plane of the blank.

Like reference characters indicate the same parts in all of the figures.

In the drawings, the numeral 10 represents the frame of a skiving machine, which may be of any desired construction. 11 represents a matrix roll having a matrix or recess 12, of the character and for the purpose known in the art. 13 represents a series of parallel disks cooperating with the matrix roll to feed the counter blank to a stationary skiving knife 14. For the purposes of this description, the disks 13 may be considered as collectively forming a feed roll complementary to the matrix roll. The matrix roll 11 is mounted on a shaft 15, and the disks 13 are similarly mounted on a shaft 16. These two shafts are geared together by intermeshing gear wheels 17 and 18, and the shaft 16 is driven by a gear 19 attached to it. Said gear receives power from a pinion 20 on a shaft 201, on which also are the belt pulleys 21 and 22. Between the disks 13 are arranged presser fingers 23, supported pivotally on a rod 24, and having arms 25. These arms are pulled upon by springs 26 in a manner to press the fingers 23 toward the matrix roll, so as to distort and offset the counter blank into the matrix cavity of the roll, leaving only the edge parts of the blank so projecting as to be cut by the knife 14.

A magazine for counter blanks to be skived is formed by a bracket or shelf 27, on which are secured upright angle posts 28, to receive and position the ends of the counter blanks. To these posts are secured curved guards 29, which so far embrace the curved edges of the counter blanks near their ends as to retain the blanks in a pile on said shelf. The latter is attached to the side of the frame at about the level of the tangent line between the matrix roll and the complementary feed roll.

The guard or retaining means for the counter blanks, at the end next to the rolls, is cut away above the shelf 27 for a distance

equal to the thickness of a single blank, or enough greater than such thickness to permit the blank to pass through such space, but not enough to admit two blanks at the same time.

A pusher 30 is arranged to slide over the surface of the shelf 27, from the outer part thereof toward the rolls, and it has an edge shaped to conform with the outline of the counter blank, and in the plane of the lowermost blank, whereby it is adapted to engage said blank and push it through the discharge opening 31 of the magazine toward the rolls. This pusher has an arm 32 carrying a lug 33, to which is pivoted a link 34. The link is also pivoted to an arm 35, fastened to a rock-shaft 36, on which it is also secured to a second arm 37, carrying a roll which bears on the rim of the cam 38, on the shaft 16. A spring 381 engaged at one end with a fixed arm, and at the opposite end with the arm 35, presses the roll of the arm 37 against the cam 38, so that the rotation of the cam reciprocates the pusher. Thus with each revolution of the rolls, the blank pusher is given a back and forth reciprocation in time to feed the lowermost blank of the pile to the shaft of the feed rolls, whenever the forward end of the matrix cavity is approaching the point of tangency with the lower feed disks.

As the blank passes between the matrix roll and feed disks, it is brought against the edge of the knife, and delivered above the knife, while the skivings fall upon a deflector plate 39. From the knife the newly skived counter as shown by dotted lines at 1^a (Figure 4), passes to a printing device, which consists of a printing roll 40, and an impression roll 41. The printing roll has types on its face, as shown in Figure 3, and is mounted on a shaft 42, rotating in bearings 43, said bearings being parts of brackets 44 and 44^a which are secured to the frame of the skiving-machine. The impression roll in its turn, is mounted on a shaft 45, turning in bearings 46, which are provided in parts of the skiving machine frame itself. These rolls, the printing and impression rolls, form a printing couple which is an attachment to the machine. Not only are they the printing couple, but they also cooperate to grip and feed the counter, supplementing the action of the matrix roll and feeding disks, to draw the rear end of the counter past and away from the knife, after the counter has left the nip of the matrix roll and disks. The impression roll 41 is driven for this purpose from the shaft 201, on which the pinion 20 and pulleys 21 and 22 are also mounted, by a gear 202 on said shaft, and a gear 203 on the shaft 45.

With this aspect of the machine in view, the matrix roll and disks may be considered as the primary feeding means or couple of

the combined machine, and the printing couple may be considered as a secondary feeding means or couple, which combines the function of feeding with that of printing. For that purpose, the surface of the impression roll is preferably fluted or ribbed, as shown best in Figure 3. The types of the printing roll in themselves, provide projections which cooperate with the impression roll to grip the counter.

It is to be understood, of course, that the printing roll may be of any diameter and width of face, and may carry printing types of any description, to impress any desired words or symbols on the counter, provided only that the area of the roll which carries the printing device is sufficiently within the outlines of the counter.

The ink or color for printing is contained in a fount 47, on an arm 48, which is secured detachably to a bracket 49, said bracket in turn being detachably secured to one of the brackets 44 previously described.

A spout 50, leading from the bottom of the fount, and equipped with an adjustable cock 51, allows the ink to flow as copiously as may be needed, on a carrying roll 52 of suitable composition, which is rotatably mounted on a rod 53, secured to the bracket 44. The carrying roll 52 runs in contact with an ink-distributing roll 54, and the latter runs also in contact with the surface of the printing roll 40. The ink-distributing roll 54 turns on a shaft which is carried by two arms 55, 55^a, arranged to turn and slide on a rod 56, which is mounted at one end in the bracket 44^a. These arms 55, 55^a, are spaced apart by the shaft on which the roller turns, and they are normally held in the position shown in Figure 3. The arm 55 is pushed toward a collar 57 by a spring 58 confined between the arm 55^a and the collar 59 on rod 56.

The carrying roll 52 is also free to turn and move endwise on its supporting rod 53, and is retained approximately in the position shown in Figure 3, by springs 60 and 60^a which flank it and are confined by collars 61 and 62, respectively.

The arm 55^a of the distributing-roll holder is connected by a chain 63, with one arm of a lever 64, pivoted on a stud 65 which is carried by a bracket 66 mounted on the casing 67, which encloses the gears 17 and 18, and is in turn attached to the adjacent end member of the skiving-machine frame. The said lever has a second arm which is connected by a chain 68, with a bell-crank lever 69, pivoted at 70 on the shelf 27, which forms the bottom of the counter-blank magazine. The other arm of this bell crank carries a roll 71, which lies close to the supporting surface of this shelf, and in position to be engaged and displaced by the curved edge of the counter blank when the latter

is pushed toward the primary feeding couple. This relation of the bell-crank lever to the blank is best shown in Figure 2, wherein the full lines represent the normal position of the bell crank, and the dotted lines represent its position when displaced by the passage of the blank. When it is displaced, said bell-crank lever causes the distributing roll 54 to be moved endwise across the carrying roll 52 and the printing roll, thus causing the ink which is delivered in a narrow path to the roll 52, to be distributed fully over the faces of the printing device. By this action the counter blank, in being fed to the skiving machine, renders the printing couple effective to print upon it when it has passed the skiving point and advanced to the printing point.

I claim:

1. In a counter-skiving machine, the combination of a knife; primary feeding mechanism in advance of the knife, including rolls adapted to grip a counter blank, and means for rotating the rolls to feed the blank to the knife; and counter-feeding and printing mechanism beyond the knife, including rolls adapted to grip the skived blank, one being a printing roll having types, and the other an impression roll, and means for driving the printing and impression rolls to cause the same to simultaneously print and continue the feeding of the skived blank.

2. A counter-skiving machine comprising

a matrix roll, a complemental feeding roll, a magazine for counter blanks, means for feeding counter blanks successively from said magazine to said rolls, a skiving knife past which the blank is forced by the propelling action of said rolls, a printing couple mounted as an attachment to said machine, and to which the counter passes in its propelled progress from the skiving knife, and an ink-distributing roll for delivering ink to the printing member of said couple, and means controlled by the blank-feeding means of the skiving machine for giving distributing movements to said distributing roll.

3. The combination with a skiving machine, having complemental rolls adapted to grip and feed a blank to be skived, a knife arranged to skive the blank so fed, and a preliminary feeder intermittently acting to deliver counter blanks to said rolls, a printing attachment in which the counter is delivered by said rolls after passing said knife, said attachment including a normally inoperative element, and mechanism actuated by the preliminary feeder whenever a counter blank is fed thereby, for making said element operative in preparation for the arrival of the blank so fed to the printing attachment.

In testimony whereof I have affixed my signature.

FRED D. MALAGUTI.