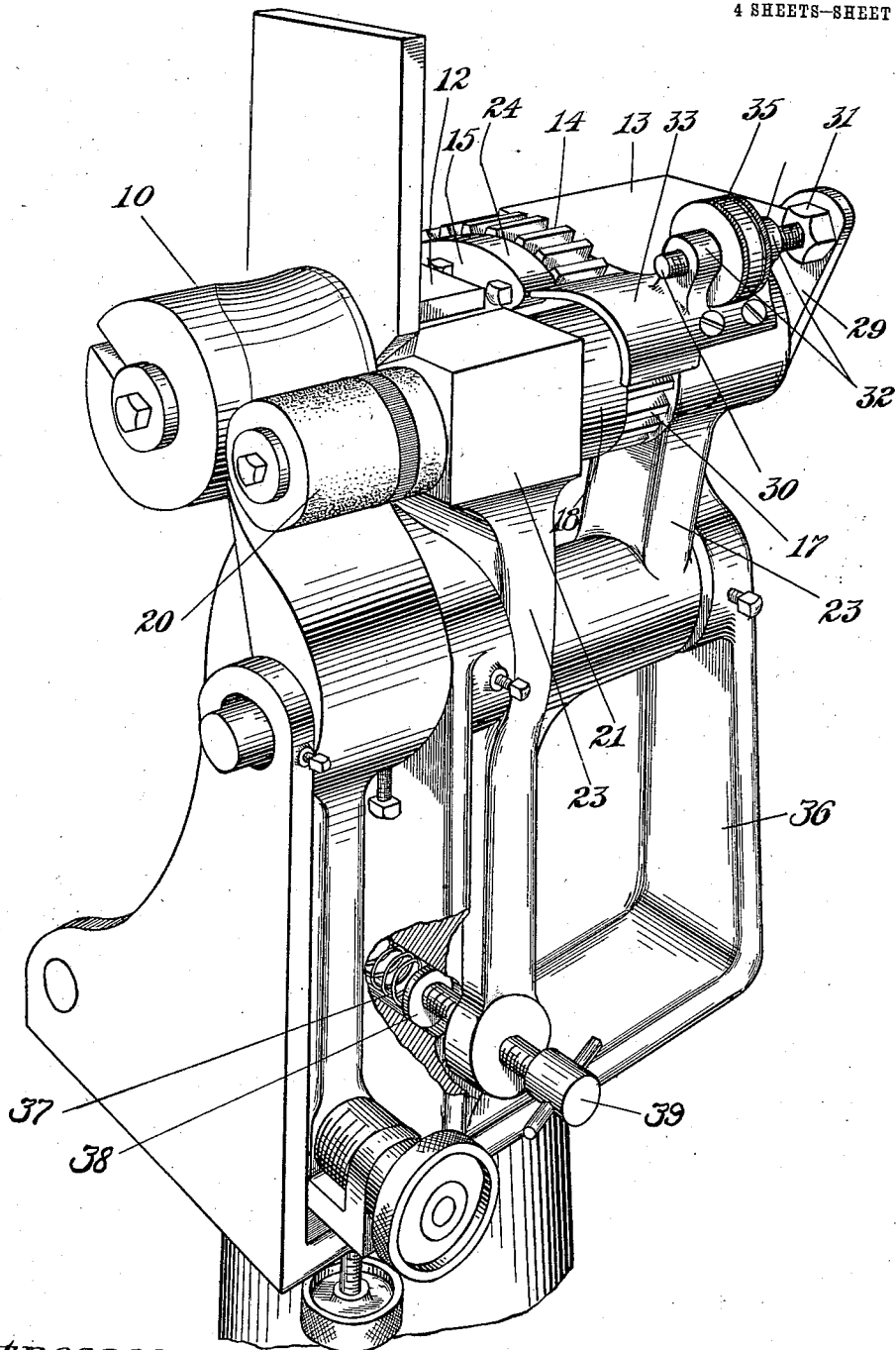


F. L. ALLEY & W. PACK.
SKIVING MACHINE.
APPLICATION FILED JUNE 15, 1907.

996,744.

Patented July 4, 1911.

4 SHEETS-SHEET 1.



Witnesses.

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Edith C. Hollbrook

Fig. 1.

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4 SHEETS—SHEET 2.

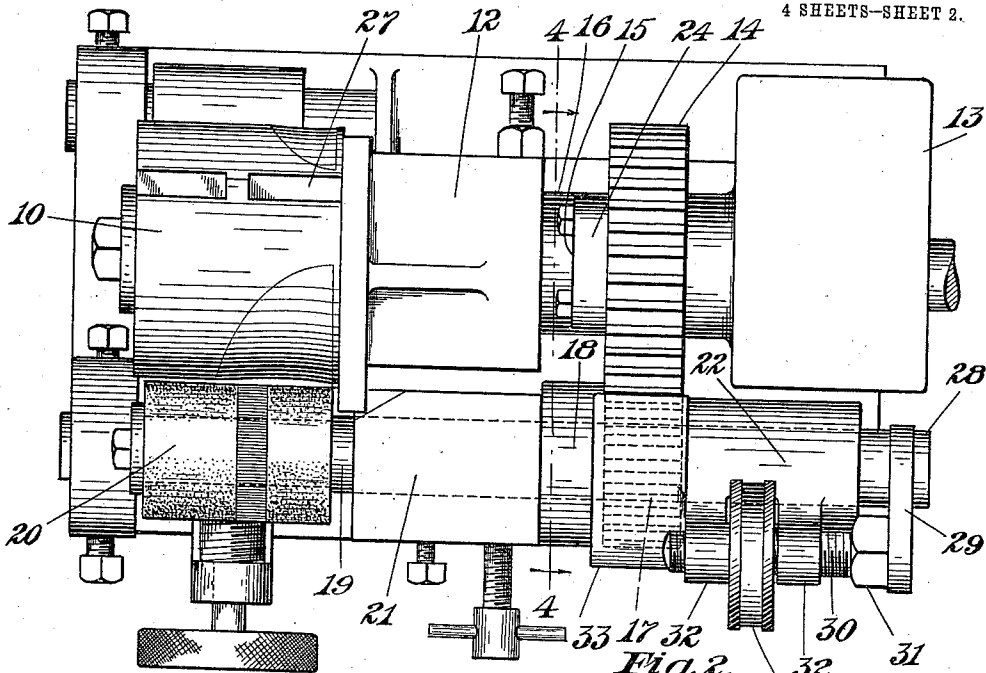


Fig. 2.

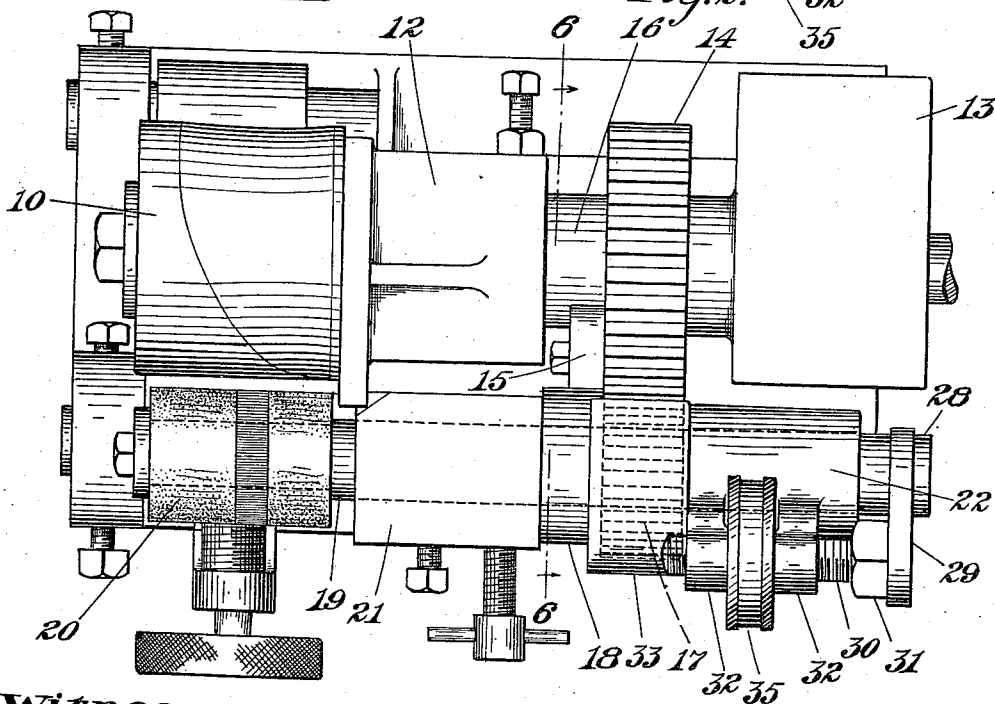


Fig. 3.

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4 SHEETS—SHEET 3.

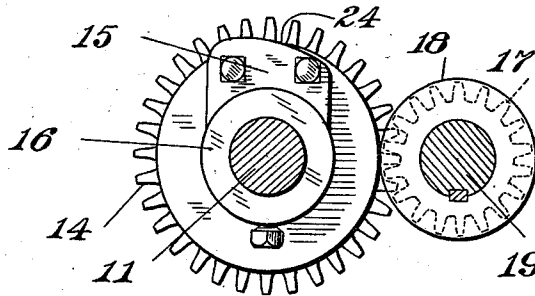


Fig. 4.

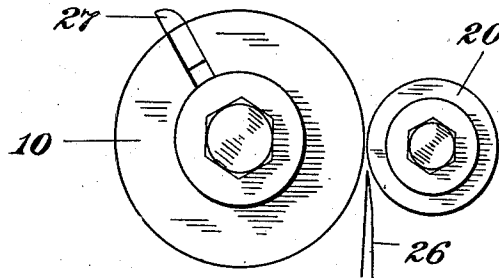


Fig. 5.

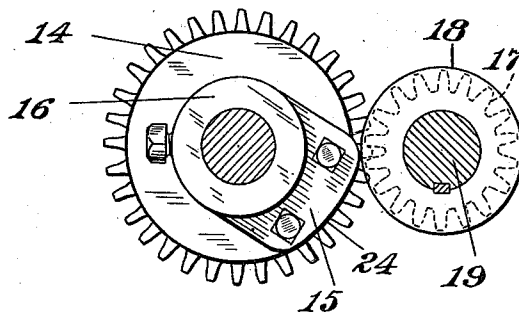


Fig. 6.

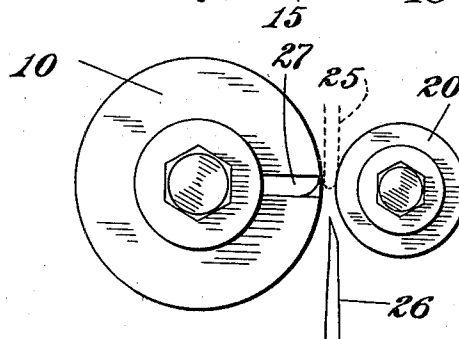


Fig. 7.

Witnesses.

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4 SHEETS—SHEET 4.

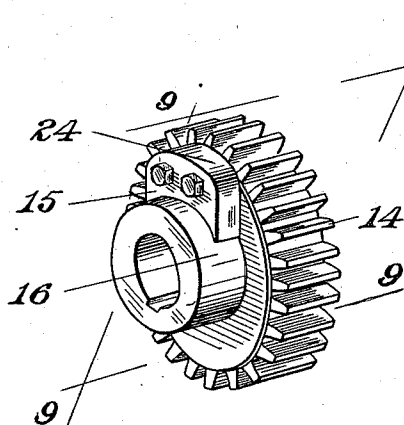


Fig. 8.

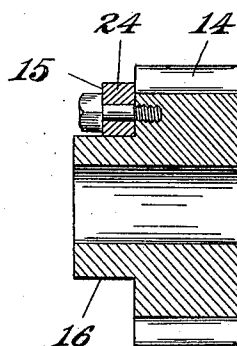


Fig. 9.

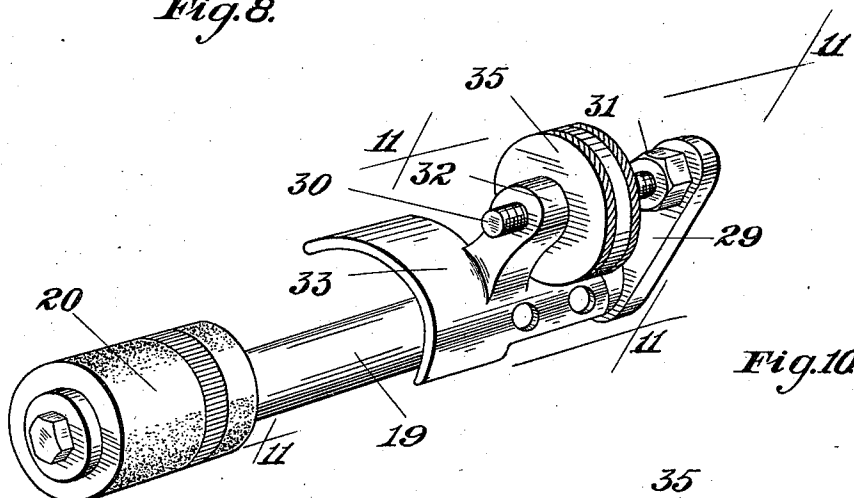


Fig. 10.

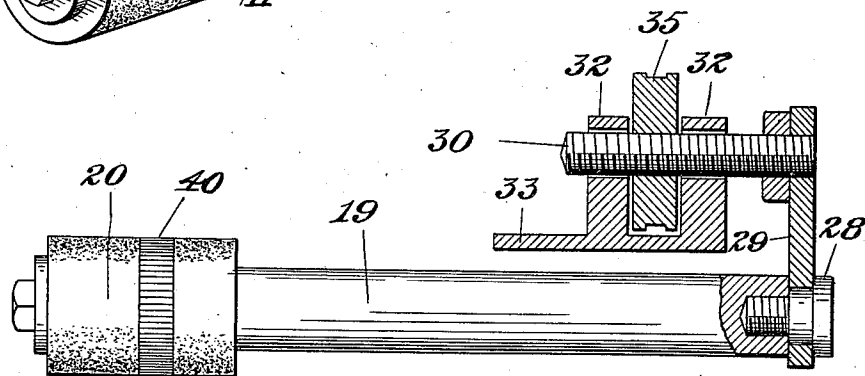


Fig. 11.

Witnesses.

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Elmer C. Hollbrook

Inventors.

Frederick L. Alley
Walter Pack
By their Attorneys,
Melvin M. Howard

UNITED STATES PATENT OFFICE.

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SKIVING-MACHINE.

996,744.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed June 15, 1907. Serial No. 379,276.

To all whom it may concern:

Be it known that we, FREDERICK L. ALLEY, a citizen of the United States, and WALTER PACK, a subject of the King of Great Britain, residing at Sydney, New South Wales, Australia, and Neutral Bay, near said Sydney, respectively, have invented certain Improvements in Skiving-Machines of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to skiving machines and more particularly to machines for skiving articles of leather.

The invention is herein shown embodied in a counter skiving machine comprising a die carrier, herein shown as a die roll, having a die cavity of the shape of a skived blank and a feed roll for pressing the stock into the die cavity arranged for movement toward and from the die roll and acting in conjunction with the die roll to force the stock against a stationary knife.

The primary object of the invention is to overcome a defect which we have observed in the operation of prior machines of this type. In machines of the character shown, the feed roll is held yieldingly toward the die roll and in the insertion of a blank the rolls are forced apart by the blank as it is drawn between them. It will be seen that, on account of the pressure exerted by the rolls upon a blank, there is some resistance to the entrance of the blank between them. At times, when a blank is presented to the machine, the rolls do not grip it immediately with sufficient force to overcome this resistance and the passage of the blank through the machine is not properly timed. The consequent failure of the blank to register accurately with the die cavity causes the production of a thick edge upon the forward end of the blank, while the rear end is skived to a thin edge. This difficulty is particularly liable to be met with where the surface of the feed roll is formed partly or wholly of yielding material, since where such material is employed there is greater likelihood of the rolls slipping upon the stock than where the entire surface of the feed roll is a roughened metallic surface.

To overcome objections such as those men-

tioned, the present invention contemplates the provision, in a machine of the type referred to, of means for temporarily relieving the pressure of engagement of the rolls with the stock during the insertion of the stock between the rolls. Where, as in the present machine, a single skiving operation is completed during one revolution of the die roll, the arrangement is preferably such that the relief of said pressure occurs at a predetermined point in each revolution of the die roll. While any arrangement for temporarily relieving the pressure of the rolls upon the stock is within the scope of the present invention, it is preferred to construct the parts in such a way that the rolls will be automatically forced apart to permit the entrance between them of the stock to be skived. A convenient construction comprises a cam arranged upon one of the shafts which support the die roll and the feed roll, respectively, said cam, in the machine shown, being arranged to move the feed roll shaft away from the die roll for a short interval of time at a predetermined point in the revolution of the die roll.

In the counter skiving machine herein shown the die cavity is arranged transversely about the die roll. The feed roll hereinafter described is provided with a narrow metallic section arranged intermediate its ends, the remaining portion of the roll being formed of yielding material. To secure the best results, the metallic section of the roll should be in substantial alinement with the longitudinal central line of the die cavity. In order to permit this to be accomplished, where the form or size of the die cavity is subject to change, for example in skiving blanks of different sizes, another feature of the invention consists in arranging the feed roll for convenient adjustment longitudinally of the die roll.

Other features of the invention, the advantages of which will be apparent to one skilled in the art, will be hereinafter described and defined in the claims.

In the drawings, which illustrate a machine constituting one embodiment of the invention,—Figure 1 is a view in perspective of the more important parts of the machine; Fig. 2 is a view in plan of the machine shown in Fig. 1, the rolls being shown in their closed position; Fig. 3 is a view similar

to Fig. 2, illustrating the position of the parts when the rolls are forced apart to permit the insertion of a blank; Fig. 4 is a vertical sectional view on the line 4—4 of Fig. 2; Fig. 5 is an end view of the rolls in a position corresponding to that of the parts in Fig. 4; Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 3; Fig. 7 is an end view of the rolls in a position corresponding to the position of the parts in Fig. 6; Fig. 8 is a perspective view of a detail; Fig. 9 is a sectional view on the plane 9—9 of Fig. 8; Fig. 10 is a view in perspective of the feed roll and its adjusting mechanism; Fig. 11 is a view in plan of the parts shown in Fig. 10, with portions in section on the plane 11—11 of Fig. 10.

In the figures of the drawings, 10 represents a die roll secured in fixed position upon a shaft 11, said shaft being arranged for rotation in stationary bearings 12 and 13. A feed roll 20 is mounted upon a shaft 19 arranged for rotation in bearings 21, 22, formed in an arm 23, said arm being arranged for pivotal movement about a suitable supporting stud, mounted upon a supporting frame 36, as will appear from Fig. 1. The frame 36 is provided with a cavity adjacent the lower end of the arm 23, said cavity being formed to receive a spring 37. A washer 38 bears upon the outer end of said spring, said washer being entered by the end of a screw 39 adjustably secured in the lower end of the arm 23. It will be seen that the spring 37 holds the shaft 19 yieldingly toward the shaft 11 and that the pressure with which said shaft 19 is forced toward the shaft 11 may be varied by adjusting the screw 39. To insure that the blank to be skived will be introduced between the rolls at the proper point in the revolution of the die roll 10, said roll is provided with an end gage 27 with which the end of the blank may be brought in contact when presented to the machine. The construction of said end gage is without novelty and its arrangement and mode of operation may be the same as that disclosed in U. S. Letters Patent, 521,090, granted June 5, 1894, to J. R. Scott.

The shaft 11 is provided at a point intermediate its ends with a pinion 14, said pinion meshing with a pinion 17 arranged upon the shaft 19. To the pinion 14 is secured a cam 15 as illustrated in Fig. 8. Said cam 15 is provided with an inclined face 24, which, at each rotation of the shaft 11 engages the hub 18 of the pinion 17, and in its movement gradually forces the shaft 19 into the position illustrated in Figs. 3, 6 and 7. The teeth upon the gears 14 and 17 are of such length that they are in contact at the point of maximum separation of the shafts 11 and 19.

As will appear from the drawings, the

feed roll 20 is provided with a corrugated metallic section 40, intermediate its ends, the remaining portion of the roll being formed of yielding material such as rubber. A bracket 33 is secured to the upper portion of the arm 23, said bracket being provided with bearings 32 in which is arranged a threaded spindle 30. The spindle 30 is provided with a depending arm 29, said arm 29 being provided with a perforation at its lower end to receive loosely the shank of a screw 28 inserted in the end of shaft 19. An adjusting wheel 35 is mounted upon the spindle 30 between the bearings 32. It will be seen that by manipulating the wheel 35, the shaft 19 may be adjusted longitudinally to the precise position desired. The pinion 17 and its hub 18 are splined upon the shaft 19, so that said shaft may be adjusted longitudinally without disturbing the position of said pinion.

The operation of the machine shown will be readily understood from the above description. In each rotation of the die roll, at a predetermined point, the feed roll is moved gradually away from the die roll. In Fig. 6 the parts are shown with the feed roll at the limit of its outward movement and it will be clear from said figure that the relative position of the die roll and the feed roll is adapted to facilitate the manual insertion of a counter between the rolls. In the further movement of the die roll from the position shown in Fig. 6, the cam 15 allows the feed roll to close quickly upon the counter and the two rolls cooperate to force the counter against the knife, the portion of the counter lying outside of the die cavity being skived off in the usual manner. It will be observed that the movement of the feed roll away from the die roll is gradually secured by a progressive movement of the cam. This is of advantage in that it obviates the shock to the parts which would be occasioned by an abrupt separation of the rolls and which has always occurred in prior machines where the rolls have been separated by the blank itself.

By the manipulation of the wheel 35, the metal section of the feed roll may be adjusted to bring it opposite the longitudinal central line of the die cavity, as will be obvious from the drawings and the above description. This operation may be performed, if desired, while the rolls are in rotation.

Having described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. A skiving machine, having in combination, a knife, a die carrier and a feed roll for advancing the stock to be skived against the knife arranged to have engagement with the opposite sides of the stock, and automatic means for temporarily relieving the

pressure of engagement of said carrier and feed roll with reference to a determined position of the die carrier.

2. A skiving machine, having in combination, a knife, a plurality of rolls for advancing the stock to be skived against the knife, means for holding said rolls yieldingly together, and means for automatically spreading the rolls temporarily apart to permit the stock to be pressed into the die cavity.

3. A skiving machine, having in combination, a knife, a plurality of rolls for advancing the stock against the knife arranged to have engagement with opposite sides of the stock, and means for automatically relieving the pressure of engagement of the rolls with the stock during the insertion of the stock between them.

4. A skiving machine, having in combination, a knife, a die carrier having a cavity of a predetermined form, a feed roll co-operating with said die carrier to advance the stock against the knife and constructed to press the stock into the die cavity, means for holding said roll and carrier yieldingly together and means for temporarily spreading them apart at a predetermined point in the operation of the die carrier.

5. A skiving machine, having in combination, a knife, a plurality of shafts arranged on opposite sides of said knife, a die roll mounted upon one of said shafts, and a feed roll mounted upon the other shaft in position to coöperate with the die roll in advancing the stock against the knife, means for yieldingly holding the feed roll shaft toward the die roll shaft and a cam arranged upon one of said shafts for moving the feed roll shaft away from the die roll shaft at a predetermined point in the revolution of the die roll.

6. A skiving machine, having in combination, a die roll provided with a die cavity of a predetermined form, a feed roll formed of yielding material and provided with a metallic section intermediate its ends arranged to engage the stock at substantially the middle part of the die cavity and means for adjusting the feed roll longitudinally of the die roll.

7. A skiving machine having in combination, a knife, a die carrier and a feed roll for advancing the stock to be skived against

the knife arranged to have engagement with the opposite sides of the stock, and means for temporarily relieving the pressure of engagement of said carrier and feed roll with the stock at a predetermined point in the operation of the die carrier.

8. A skiving machine having in combination, a knife, feeding mechanism constructed and arranged to engage the stock upon opposite sides with a yielding pressure and means for relieving the pressure of engagement of said feeding mechanism with the stock during the insertion of the stock therein.

9. A skiving machine having in combination a knife, a die roll, a feed roll, yielding means for holding said rolls together and means for spreading the rolls temporarily apart, said last named means becoming inoperative as soon as the stock has been inserted, whereby said stock is immediately pressed into the cavity in the die roll.

10. A skiving machine having in combination a knife, a die roll, a feed roll, yielding means for holding said rolls together and automatic means for temporarily separating the rolls during the operation of the machine.

11. A skiving machine having in combination a knife, a die roll, a feed roll, means for driving said rolls continuously and automatic means for separating said rolls temporarily during each revolution of said die roll a number of times equal to the number of die cavities in said die roll.

In testimony whereof I, the said FREDERICK L. ALLEY, have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK L. ALLEY.

Witnesses:

BERNARD BARROWS,
H. DORSEY SPENCER.

In testimony whereof I, the said WALTER PACK, have signed my name to this specification in the presence of two subscribing witnesses.

WALTER PACK.

Witnesses:

CHARLES EDWARD GRAHAM,
HENRY WATCHORNE CLARKE.