March 29, 1938. W. G. KLEMM 2,112,341

FEEDING DEVICE

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Fig. 1

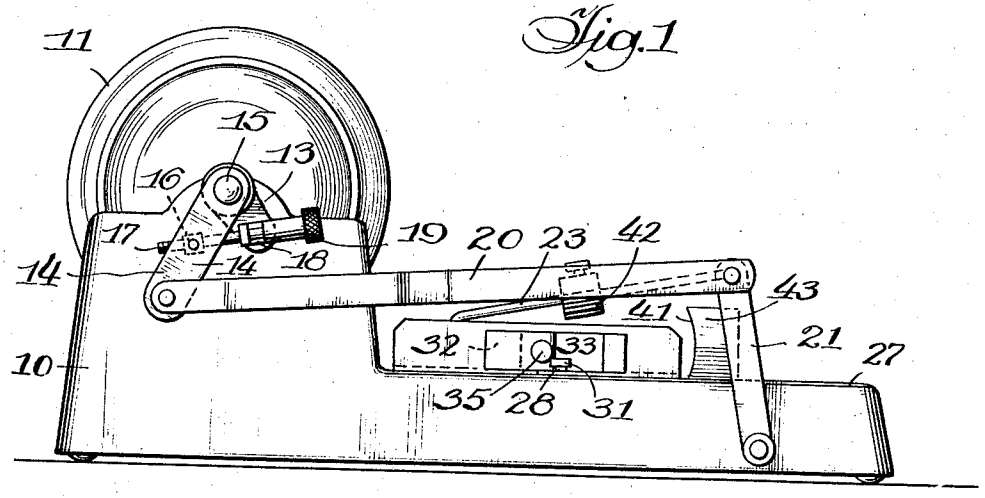
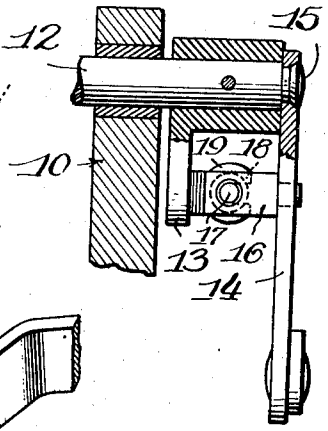


Fig. 3



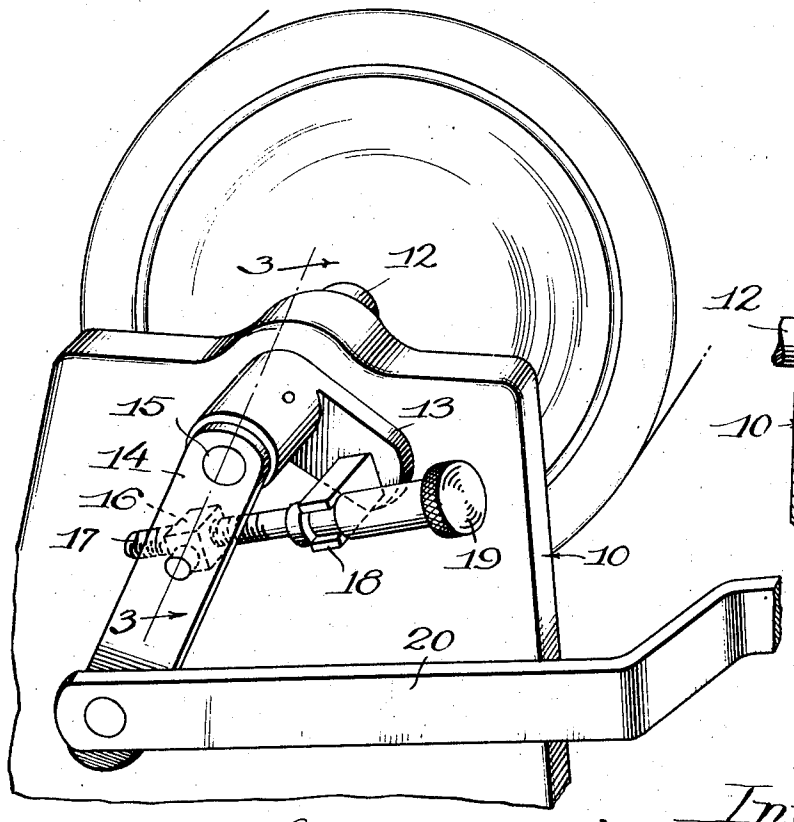


Fig. 2

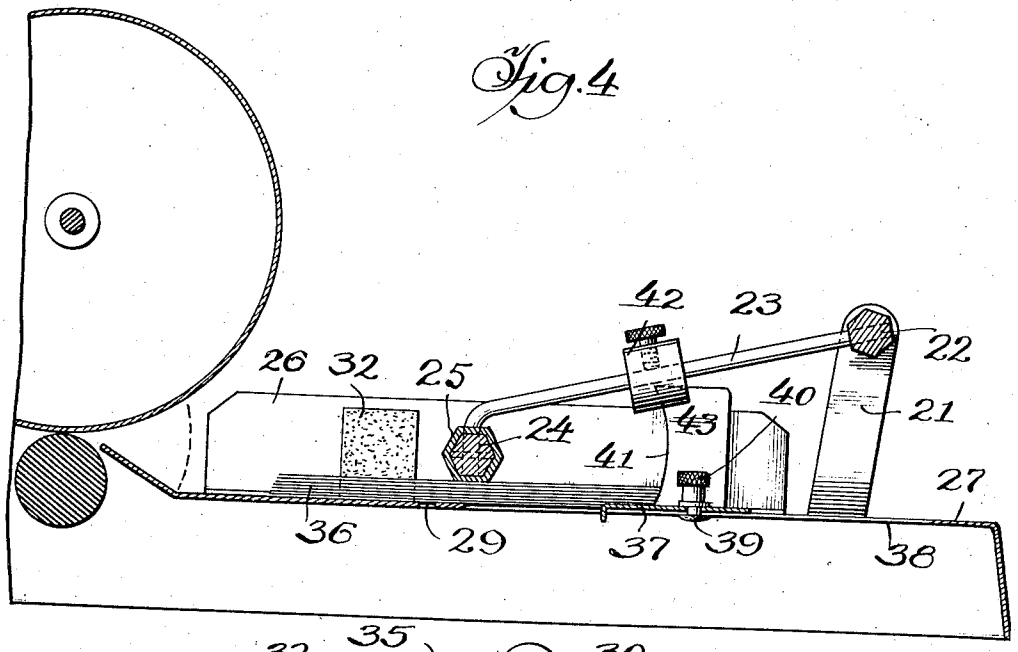
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FEEDING DEVICE

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Fig. 4



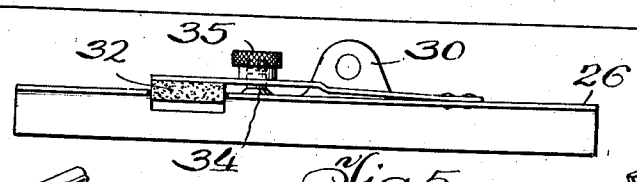


Fig. 5

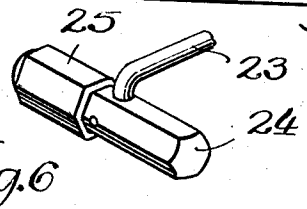


Fig. 6

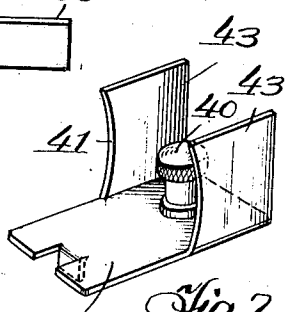


Fig. 7

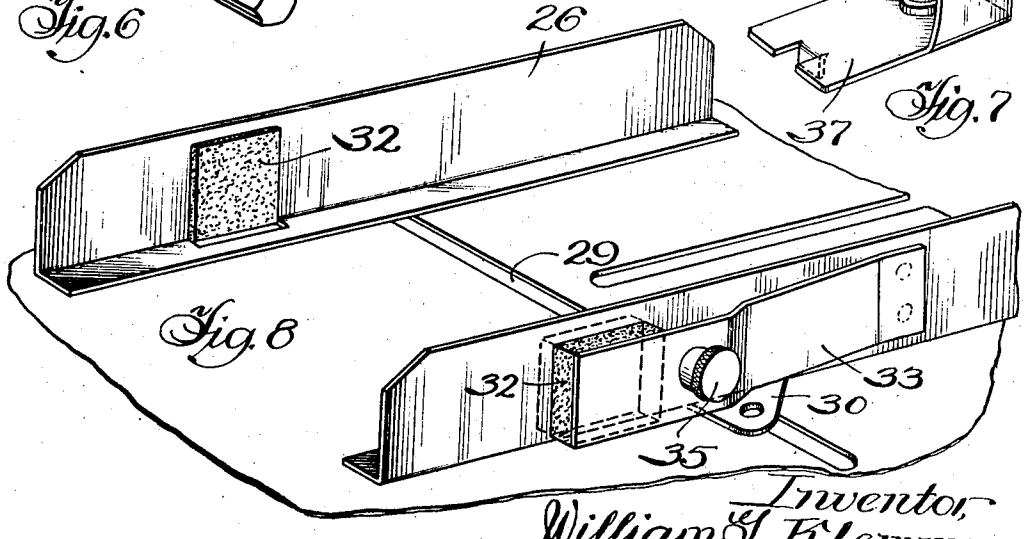


Fig. 8

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2,112,341

UNITED STATES PATENT OFFICE

2,112,341

FEEDING DEVICE

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Application February 18, 1937, Serial No. 126,395

4 Claims. (Cl. 271—42)

This invention relates to improvements in various details of a feeding device and related mechanism suitable for a stencil duplicating machine.

One of the objects of this invention is to provide an improved precision means for regulating the timing of the stroke of certain automatic feed arms, so that paper may be fed with great uniformity and the impressions on one sheet will be substantially in register with that of another.

Another object is to provide a paper backstop designed to aid in feeding paper from a uniform distance and which is adjustable to accommodate lengths of sheets down to the size of a post card, and yet not interfere with the operation of automatic feed mechanism.

Another object relates to details of improved side guides for holding the paper on the feed table.

Another object relates to improvements in the feed shoe whereby a good paper gripping surface can be maintained at all times and its efficiency maintained.

Other objects relate to economy of construction and arrangement of parts which will be apparent from a consideration of the drawings and following description, wherein:

Figure 1 is a side view of a stencil duplicating machine embodying my improvements, and

Figure 2 is a perspective view of a portion thereof, showing the details of the feed arm stroke varying mechanism.

Figure 3 is a fragmentary section on the line 3—3 of Figure 2.

Figure 4 is a fragmentary longitudinal section through Figure 1, showing the paper backstop and feed arm in different positions.

Figure 5 is a plan view of one of the side paper guides.

Figure 6 is a perspective detail of the feed shoe.

Figure 7 is a perspective detail of the paper backstop.

Figure 8 is a perspective detail of the paper side guides, and further shows the slot in which they move on the feed table.

Referring to the drawings 10 indicates the side frames of a conventional stencil duplicating machine, having a drum 11 whose shaft 12 is journaled in said frame. Locked to one end of the shaft is the lever 13 which rotates with it and imparts motion to the link 14 pivoted to the end of the shaft as at 15. Pivoted to the link 14 is the threaded block 16 which receives the screw 17 which is retained by the lever 13 in some suitable manner, as for example at 18, and can be manipulated by means of the knurled nut 19. In this way, by turning the nut 19 precision timing adjustment of the feeding stroke, transmitted through the reciprocating link 20, vertical arms 21, and transverse pivoted bar 22 to the feed arm 23 and feed shoe 24 is obtained.

The feed shoe 24 is preferably formed of an angularly cross sectional bar so as to present a moderately sized gripping surface. Over the ends of the feed shoe are fitted tubular sections 25 of suitable friction material such as rubber. Due to the fact that the shoe does not rotate, only that portion of the rubber tube on the lowermost face of the shoe will receive wear, and as this surface becomes worn from use, the tubing may be rotated, so that with the structure shown, the gripping surface may be renewed five more times.

A pair of side guides 26 are positioned on the feed table 27 and may laterally move thereon to accommodate varying widths of paper by means of the bolts 28 extending through the transverse slot 29 through the ears 30 to the knurled nuts 31. Extending through an opening in the side guides are friction members 32, preferably in the form of rubber. These friction members are affixed to the spring bars 33 secured to the outer side of the guide. A bolt 34 affixed to the outer side of the guide extends through spring bar 33 and by means of the nut 35 refined adjustments for holding the paper stack 36 may be made.

A backstop 37 adjustable in the longitudinal slot 38 by means of the bolt 39 and nut 40, is provided with a curved face 41, to compensate for the varying distances of travel of the sheets on the stack 36. This backstop may be adjusted to accommodate varying lengths of sheets down to post card size. However, at this position of adjustment the backstop, due to its required height for supporting a conventional stack, would under ordinary circumstances interfere with the movement of the feed arm 23 or the weight 42 which it sometimes carries. For this reason I have formed my backstop of two upstanding portions 43 formed integral with the base portion 37 and providing sufficient clearance between them so that the feed arm may reciprocate uninterruptedly at any operative position of the backstop.

What I claim is:

1. In combination with a rotary duplicating machine, a feed table therefor adapted to support a pile of sheets, side guides extending longitudinally of said table and transversely adjustable thereon to substantially engage the sides of said pile, friction means extending through an aperture in said side guides and adapted to engage

said pile, a spring bar adapted to carry said friction means and having one end affixed to the outer side of said side bar, and threaded means extending between said side guides and said spring bar whereby the engagement of said friction means with said pile may be varied.

2. In combination with a rotary duplicating machine, a feed table adapted to support a pile of sheets, a feed yoke extending across and above said table, link means extending from said yoke to said machine and adapted to be reciprocated by the rotation thereof, a feed arm carried by the shaft of said yoke, a fixed feed shoe having an angular cross section affixed to said feed arm and presenting a plane surface substantially parallel to the pile of sheets, and a tubular friction member adapted to be engaged over said feed shoe and to substantially conform to the shape thereof.

3. In combination with a rotary duplicating machine, a feed table adapted to support a pile of sheets, a feed yoke extending above and across said table and carrying a feed arm and shoe adapted to reciprocate on said pile of sheets and lie thereon, and an arcuate bifurcated backstop member longitudinally adjustable on said feed table and adapted to arrest the backward movement of sheets on said pile and align the uppermost sheet thereon in position for feeding movement towards said machine.

4. In combination with a rotary duplicating machine, a feed table adapted to support a pile of sheets, a feed yoke extending above and across said table and carrying a feed arm and shoe adapted to reciprocate on said pile of sheets and lie thereon, and an upright U-shaped backstop member longitudinally adjustable on said feed table and adapted to arrest the backward movement of sheets on said pile without limitation to the movement of said feed arm.

WILLIAM G. KLEMM.