

Oct. 14, 1947.

J. KAHN

2,428,879

ATTACHMENT FOR METALLIC LEAF APPLYING PRESSES

Filed May 11, 1944

4 Sheets-Sheet 1

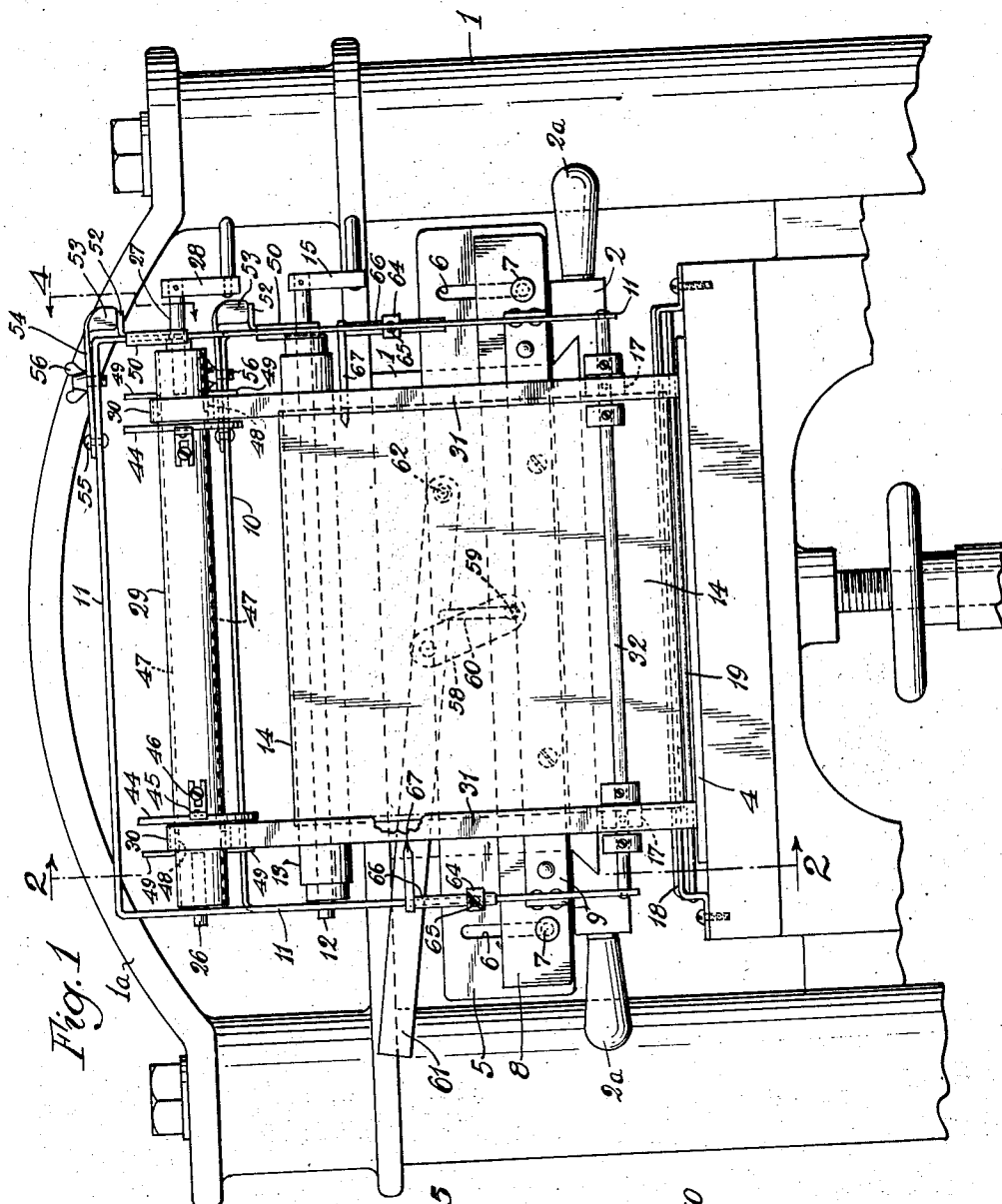


Fig. 1

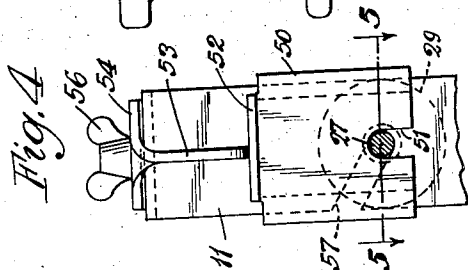


Fig. 4

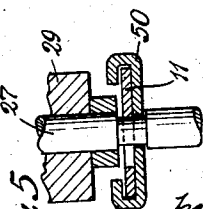


Fig. 5

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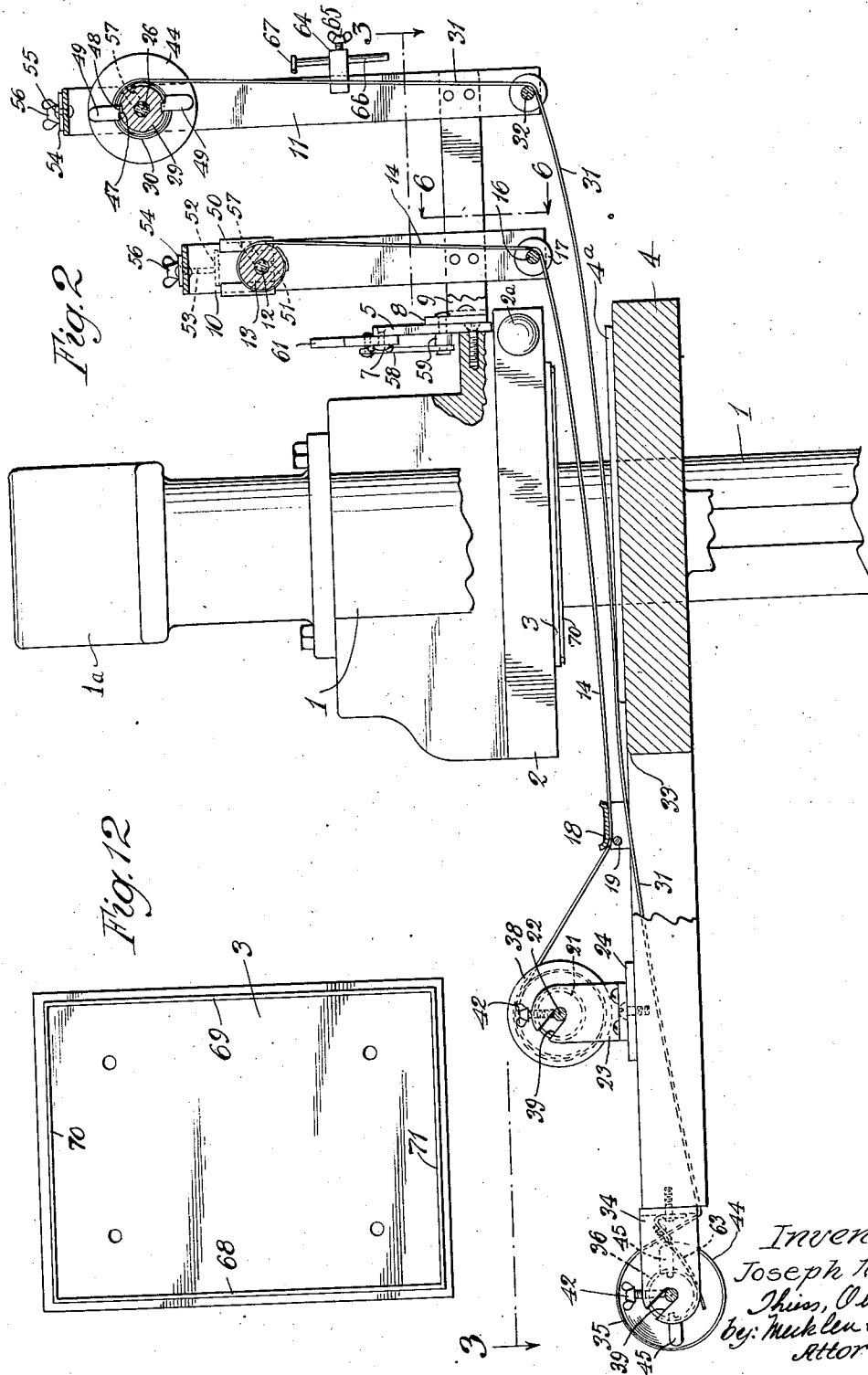
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4 Sheets-Sheet 2



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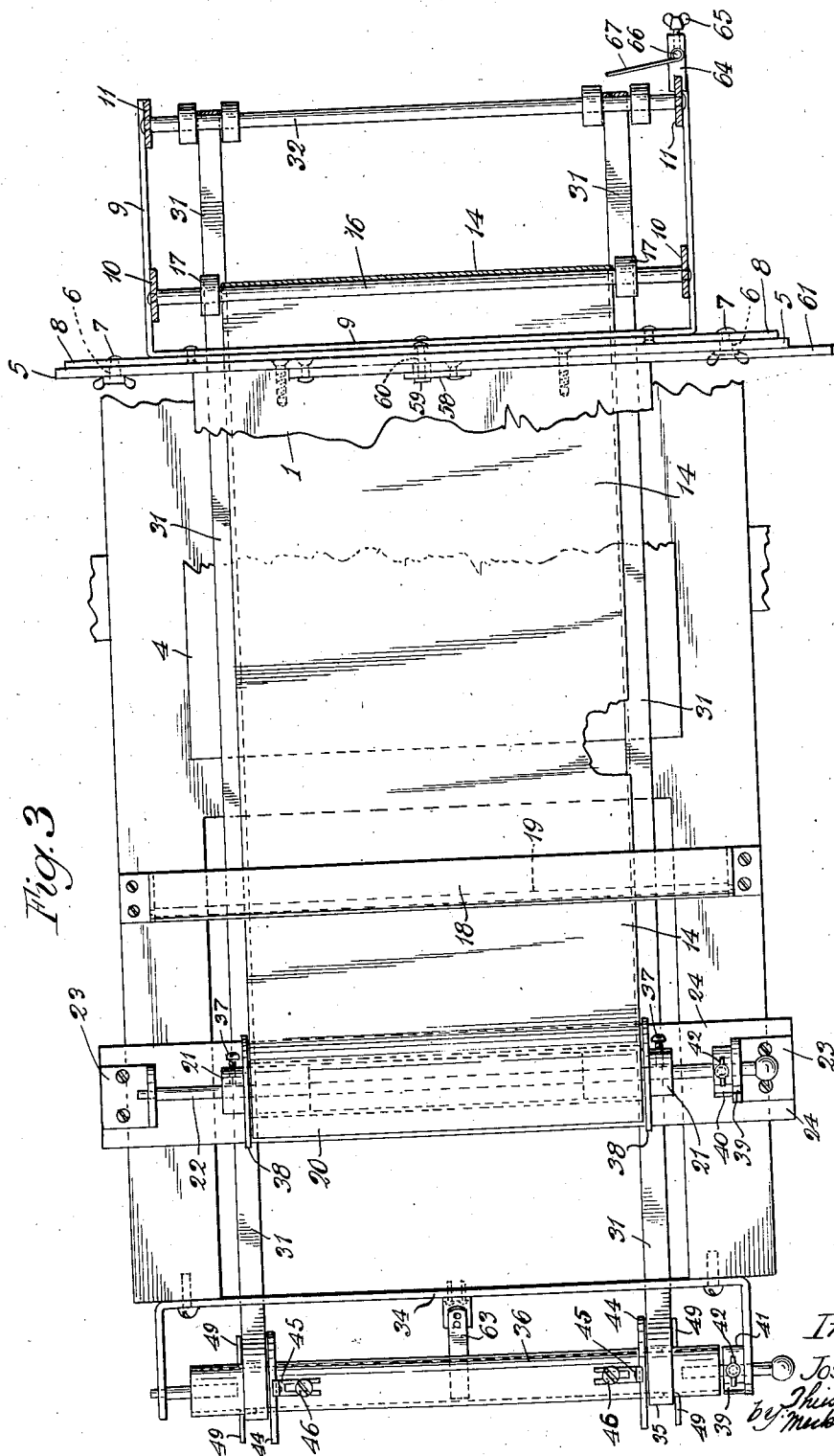
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4 Sheets-Sheet 3



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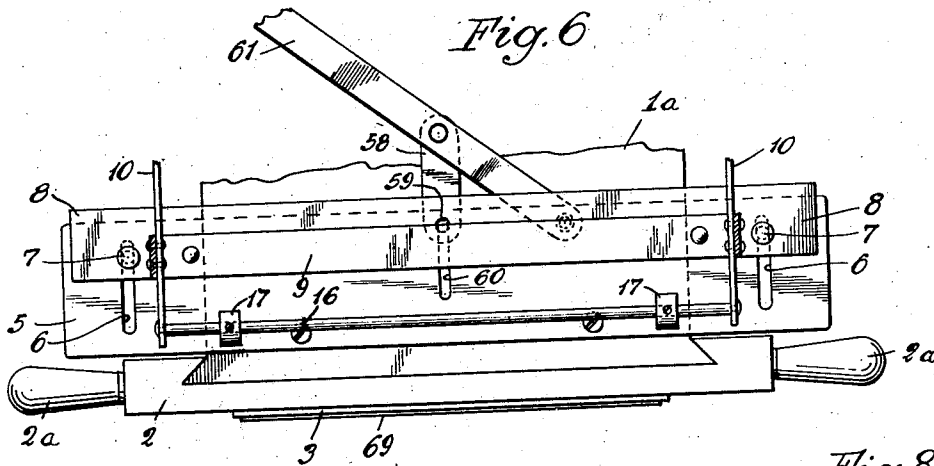
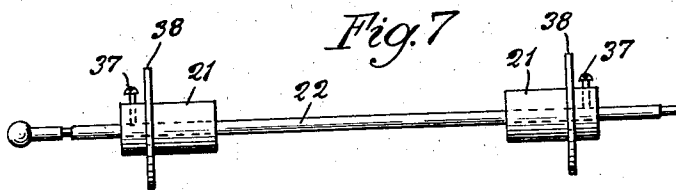
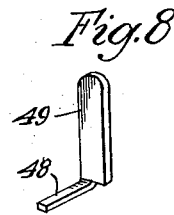
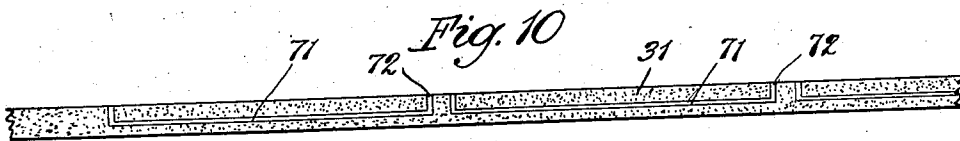
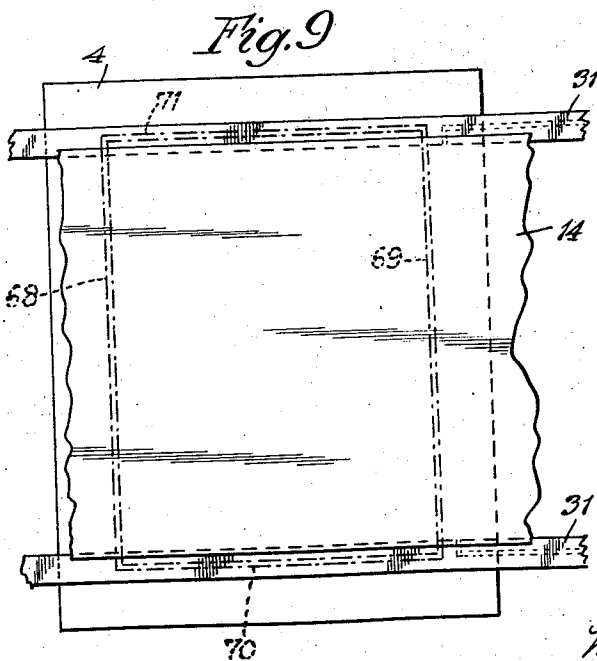
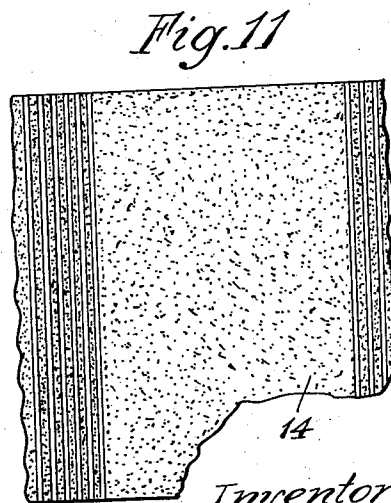
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ATTACHMENT FOR METALLIC LEAF APPLYING PRESSES

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ATTACHMENT FOR METALLIC LEAF
APPLYING PRESSES

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Application May 11, 1944, Serial No. 535,096

5 Claims. (Cl. 41-7)

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This invention relates to improvements in feeding attachments for gold stamping and embossing presses, and more particularly to such attachments for hand operated presses although capable of attachment also to power operated ones. This attachment is most essential in gold stamping and embossing gold borders upon book covers, picture frames, labels and in all such other instances where such gold stamping and embossing may be desired, but it is also highly efficient for doing all kinds of gold stamping and embossing on cardboard, paper, leather, and velvet cloth, and for doing fancy gold and aluminum leaf embossing on cigar boxes, cigar labels or any other kind of material.

One of the objects of my invention is to provide means whereby in stamping and embossing gold borders and the like a great saving in gold is effected, thus greatly reducing the cost of this class of work, broadening its field of operation so that its use may be extended in a manner heretofore considered impractical due to its cost. The gold stock for this type of work comes in rolls containing approximately 250 feet of metallic leaf of widths to suit the type of work in hand. In border work, such as book covers, etc., the gold or other material inside the borders was wasted or its future use greatly limited, whereas in the instant mechanism all of the material, with but an infinitesimal loss, often less than one per cent, is utilized.

Another object of the present invention is to provide a novel feeding means or attachment composed of few parts that are readily accessible for adjustment, repair or replacement, that are durable and not likely to get out of order, that are inexpensive to manufacture, readily applied to or removed from the press and that are highly efficient in operation.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described, pointed out in the claims and illustrated in the accompanying drawings that form a part of this patent, and in which

Figure 1 is a front view of a hand-operated gold stamping and embossing press illustrating the application of the feeding attachment;

Fig. 2 is a side view of Fig. 1, taken on the line 2-2 thereof;

Fig. 3 is a view of the press and attachment, partly in horizontal cross section but mainly in plan, on the line 3-3 of Fig. 2;

Fig. 4 is an enlarged detail view of the attachment taken on the line 4-4 of Fig. 1;

Fig. 5 is a cross-sectional view through Fig. 4 on the line 5-5 looking in the direction of the arrows;

Fig. 6 is a detail view of a portion of the front of the press and of the feeding mechanism in ele-

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vation and partly in section, taken on the line 6-6 of Fig. 2;

Fig. 7 is a detail elevational view of one spool shaft employed;

Fig. 8 is an elevational view of a wing lock or key employed for securing a spool to its shaft;

Fig. 9 is a top plan view showing the relation of the ribbons to each other and to the die;

Fig. 10 is a plan view of a portion of the narrow strip indicating its relation to the die;

Fig. 11 is a view of a wide metal-coated ribbon illustrating the manner in which the metallic coating is completely utilized by the instant attachment; and

Fig. 12 is a face view of a die.

The construction shown in the drawings comprises the sides 1 of the stamping and embossing press, a reciprocable ram or head 1a, the die block 2 to which the die 3 is secured in any suitable manner and the bed 4 on which the book or other object 4a to be embossed is placed. The head plate 5 that extends across the face of the machine is formed near its ends with the vertical slots 6, 6 in which are disposed the shanks of the pins 7 to slidably secure thereto the plate 8. The said plate 8 of narrow construction extends longitudinally of said plate 5 and has secured thereto the horizontally disposed U-shaped bracket 9, the sides of which extend forwardly and carry the shorter inverted U-shaped frame 10 and, in advance thereof, the larger inverted U-shaped frame 11, said frames and bracket being moved vertically together as the plate 8 is adjusted with respect to the head plate 5.

Removably mounted in the sides of the frame 10 is the shaft 12 of the large core 13 upon which the ribbon having a removable layer of gold or other material 14 is wound by rotation of the handle 15 at the end of said shaft. When said ribbon of material 14 is received from the factory, it usually carries a short strip of paper at one end which is secured to said spool by mucilage, brads, or otherwise, to serve as a lead for the ribbon to start it upon the core. From the core 13 the ribbon extends downwardly and about a pin shaft 16 carried by frame 10 and between flanged guide collars 17, 17 adjustable upon said shaft, rearwardly of the press proper beneath and bed 4 and beyond the press proper beneath a guide bar 18 and between same and a wire rod 19 carried by said bar to the ribbon spool or core 20 operatively and removably disposed upon collar inserts 21, 21 upon a shaft 22 supported in brackets 23, 23 arranged upon a span bar 24 connecting the bifurcated rear end of the tail apron 25 of the press, which apron also supports the said guide bar.

The core 20 is hollow and at its ends receives the collar inserts 21 which are adjustably secured to shaft 22 by set screws 31 which also secure in

position the discs 38 arranged upon said inserts contiguous to the ribbon to confine same therebetween and prevent lateral weaving or ribbon shift. The shaft 22 is removably supported in said brackets 23, one bracket having a round perforation to receive one end of said shaft, the opposite bracket being formed with an oblique slot 39 to receive said shaft, the hub on the bracket 23 being provided with a like slot 40 to receive the shaft, a wing screw 42 serving to hold the shaft 22 in position. While this form of shaft and spool assembly is shown, any other means desired may be substituted therefor.

Referring now to the frame 11, removably and operatively supported in the sides thereof are the stub spool shafts 26, 27, the latter provided with an operating handle 28, said shafts having thereon the core 29 for the two narrow ribbon spool cores 30, 30, one upon each side of the frame, each spool core having wound thereupon by rotation of said handle the narrow strips of metallic ribbon 31 that extend downwardly and about the pin shaft 32 supported by the ends of the frame 11 and then rearwardly between the bed 4 and die 3 and over the rear edge 33 of the bed 4 to keep the ribbon clear of said bed, said ribbon then passing between the ends of the bifurcated apron and beneath the base of an U-shaped frame 34 secured to the ends of said apron and then about the narrow live metallic ribbon spools 35, 35 which are the sources of supply of said ribbon and which are releasably arranged upon the ends of the core 36 releasably secured in said frame 34.

In the assembly shown in connection with core 36 and core 29, guide discs 44 adjustable longitudinally of said cores serve to guide the metallic ribbon and are retained in adjusted positions by the sectional brackets 45 and screws 46, the bracket sections being secured to said discs and to the cores. The core 29 is formed with diametrically opposed longitudinal keyway recesses 47, 47, in which one end of the ribbon is secured, and said narrow spool cores 30, 30 have keyways registering with the keyways 47 and a key 48 is inserted in the keyways, said narrow spool cores 30 being retained in adjusted position upon said core 29 thereby, each key 48 having an arm or flange which abuts a narrow spool core 30 which is thus positioned between two of said arms 49 and a disc 44.

As the metallic ribbon passes from the rear spools 20, 35, 35 through the press to the forward dead ribbon core 13 and narrow spool cores 30, 30, it is kept under tension to prevent sagging, the narrow ribbons passing beneath the frame 34, over the edge 33 and about pin shaft 32 while the wide ribbon 14 passes from the spool 20 between wire rod 19 and guide bar 18, about pin shaft 16 to the core 13. The stub shafts 26, 27 and core shaft 12 are kept under tension by direct engagement by a sleeve 50 (Figs. 1, 2, 4 and 5), slidably arranged upon one side of each frame 10 and 11, formed in its lower edge with a shaft-engaging notch or slot 51, the upper edge of said sleeve having integral therewith a lip 52 horizontally disposed and adapted for engagement by the downturned end 53 of a resilient clamp 54 rockably secured by pin 55 to the frame 10 or 11, said clamp being kept in resilient pressure engagement with said lip 52 by the clamping screw 56 connecting it to the frame. In this way any tension desired upon the shaft may be exerted. The shaft 27 or shaft 12 is received in the frame 11 or 10 through an oblique slot 57 formed

therein. Additional tension by spring 63 mounted on the frame 34 and bearing on the core 36 is also provided.

Referring again to the narrow plate 8 that carries the bracket 9, said plate is connected by link 58 and pin 59, movable in a slot 60 in the head plate 5, to a hand lever 61 connected by pin 62 to said plate 5 so that by means of said lever the plate 8 with bracket 9, frames 10 and 11 and connections may be raised from the position shown in Fig. 1 to that shown in Figs. 2 and 6, in which latter position the die block 2 may be removed by its handles 2a to remove or insert a die. As shown in Fig. 6, the die block 1 is dovetailed to the reciprocable ram or head 1a. To permit this movement, the ribbons have been slacked to provide clearance for said block. A bracket 64 secured removably to one side of the frame 11 has adjustably connected thereto by set screw 65 a shaft 66 that carries an indicator 67 directed to the ribbon 31 to denote the proper spacing between impressions.

The shaft 66 with indicator 67 is reversible; that is, the shaft may be removed from the supporting bracket and inserted with the indicator beneath or about as far below the bracket as it is above same in uppermost position and in both positions it is readable upon the ribbon and its markings. It will be noted that the two narrow ribbons pass beneath the wide ribbon and overlap same, as clearly shown in Fig. 9 so that horizontal and vertical lines of a design will meet and form corners of the design. For the gold stamping or embossing operation the design is placed in the die block in the usual manner with the ribbons passing between the bed 4 and die 3. The objects 4a, to portions of which a film of metal such as gold leaf is to be applied, are put in position successively underneath the leaf carrier ribbons 14 and 21, and the die 3 is brought down on each object when placed in a press to cause the metallic coating on the ribbons underneath the embossed portions of the die to be removed from the ribbons and transferred to the object to be coated.

Formerly, if a border for a book or a picture frame or the like was to be stamped or embossed, after the lines were imprinted upon the object, the ribbon was advanced completely beyond the die or design and in most cases a portion of metallic ribbon equal to the space between the border lines was lost or wasted and seldom could be utilized for any purpose. With the instant structure, if the stamping or embossing is in the form of horizontal and vertical lines forming a square, oblong, rectangle or similar figure, little or none of the coated ribbon between the border lines is wasted or lost. Referring now to the design shown in the die, Fig. 12, an oblong or rectangular figure is shown. To make the first impression, the narrow ribbons 31, 31 are so spaced apart beneath the wide ribbon and overlapping the same as to make the vertical lines that will correspond to the sides or border lines 70, 71 of the die upon the object and the wide ribbon is so positioned by handle 15 with the forward end of the ribbon just beyond the die forwardly as to make the border lines 68, 69 horizontally upon the object when the press is operated. The amount of ribbon now used from the narrow spools is equal to the length of the borders 70, 71, and the wide ribbon used is equal to the width of the horizontal borders 68, 69.

In use, the length of a design is considered as the distance it covers longitudinally of the rib-

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bon, as otherwise the narrow spools which provide the ribbon for impressions longitudinally would be too quickly used up. Therefore, the lines 70, 71, Fig. 12, are the vertical lines of the impression, and lines 68, 69 are the horizontal or cross-ribbon ones.

In using the indicator 67, the length of the design is the length of a line 70 or 71. This is known or determined in inches and fractions thereof. The wide ribbon is in position for the first impression when it extends through the press to the core 13. The narrow ribbons 31 are in position when they extend through the press to the core 29. An impression is now made. The object 4a which has just been embossed is removed and another object to be embossed is put in its place. Thereafter the wide ribbon is advanced the width of one horizontal line 68 or 69 and the narrow ribbons are advanced the length of one line 70 or 71, plus the width of one horizontal line. The distance which the wide ribbon is to be advanced can be determined by observation and experience. The distance which the narrow ribbons should be advanced is determined by the use of the indicator 67. The front end 72 (Fig. 10) of the narrow ribbon is brought into registration with the indicator 67. A second impression can now be made. This operation is repeated for each object to be embossed.

When the short pull movements of the wide ribbon have used up the ribbon between the lines 68, 69 a long pull of the wide ribbon is made equal to the distance between the lines 68, 69 plus two horizontal line widths. The "line width" advances of the wide ribbon are known as "short pulls" while the longer ribbon movements are known as "long pulls." In this manner all of the ribbon material in the wide ribbon is used as denoted in Fig. 11 and all of the ribbon on the short spools is utilized except that in excess of the width of the corresponding border of the die design.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In feeding mechanism for metallic leaf applying presses, the combination with a frame, and impress mechanism carried thereby, of a wide metallic leaf spool for live leaf operatively carried by said frame rearwardly of said impress mechanism, narrow metallic leaf spools for live leaf operatively carried by said frame rearwardly of said impress mechanism and laterally of said wide leaf spool, all of said ribbon passing through said impress mechanism, the leaf of said narrow spools passing beneath and overlapping the leaf of said wide spool, spaced frames disposed forwardly of said first named frame and supported thereby, actuating cores carried by said spaced frames, one of said cores receiving the wide leaf after same has passed from said impress mechanism, a handle for rotating said core, cores receiving the narrow leaf after same has passed through said impress mechanism, a handle for said cores, and an indicator carried by one spaced frame readable in connection with said leaf.

2. In feeding mechanism for lineal embossing and stamping presses, the combination with a frame and die impress mechanism carried by said frame, of metallic leaf spools connected

to said first named frame, metallic leaf receiving cores operatively carried by said spaced frames, the leaf of certain of said cores passing beneath and overlapping the leaf of another core, guide means for all leaf for directing same through said impress mechanism, and indicating means carried by one of said spaced frames for indicating the extent of advance of at least one of said leaves.

3. In feeding mechanism for border embossing and stamping presses and the like, the combination with a frame and die impress mechanism carried thereby, of spools of metallic leaf mounted on said frame, spaced frames adjustably connected to said first named frame, metallic leaf receiving cores operatively carried by said spaced frames, the leaf of the cores of one frame being disposed beneath and overlapping the leaf of the core of the other frame, the leaf running from said spools through said impress mechanism to said cores, handles for operating said cores, and indicating means carried by one of said spaced frames readable upon the used leaf for determining the extent of successive handle movements necessary to effect contiguous consecutive live leaf impresses.

4. As an article of manufacture, an inverted U-shaped frame, a shaft in said frame, a sleeve slidable upon one frame side notched to engage said shaft, a lip at one end of said sleeve, a resilient clamp rockably secured to the inverted base of said frame having one downturned end frictionally engaging said lip in one position of said clamp, and a set screw releasably connecting said frame and clamp.

5. In a metallic coat applying press for applying a metal coating to a quadrilateral band surface surrounding a quadrilateral surface of an object to be coated, relatively reciprocable die and platen members, said die member having an impression portion comprising a quadrilateral band surface, said surface comprising two spaced relatively narrow longitudinally extending zones and two spaced relatively narrow transverse zones, means enabling feeding two narrow metal carrying sheets spaced apart to correspond to the spacing apart of the narrow zones step by step underneath the press between operations, means enabling feeding a wide metal carrying strip lying between the two narrow strips step by step underneath said press between operations, the step feed of the wide sheet for each operation being at least equal to and not materially greater than the width of a transversely extending zone and the step feed of a narrow sheet being at least equal to the length of a longitudinally extending zone, the width of the wide sheet being substantially equal to the length of a transversely extending zone and the width of the narrow sheet being substantially equal to and not materially greater than the width of a longitudinally extending zone.

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