June 3, 1941. B. W. FREEMAN 2,244,613

DIE

Original Filed July 13, 1936 3 Sheets-Sheet 1

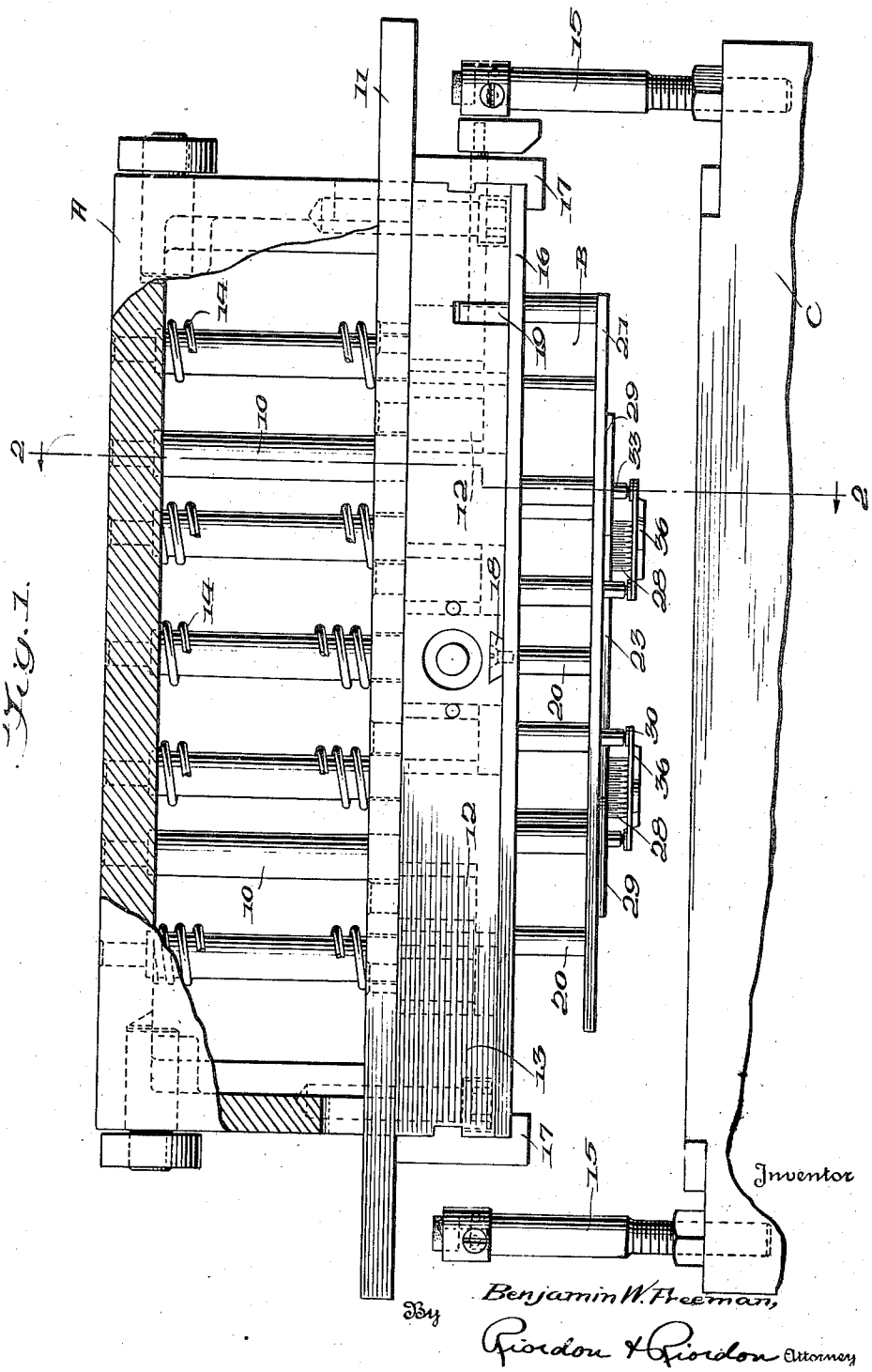


Fig. 1.

Inventor

Benjamin W. Freeman,

By Riordon & Riordon Attorneys

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Fig. 2.

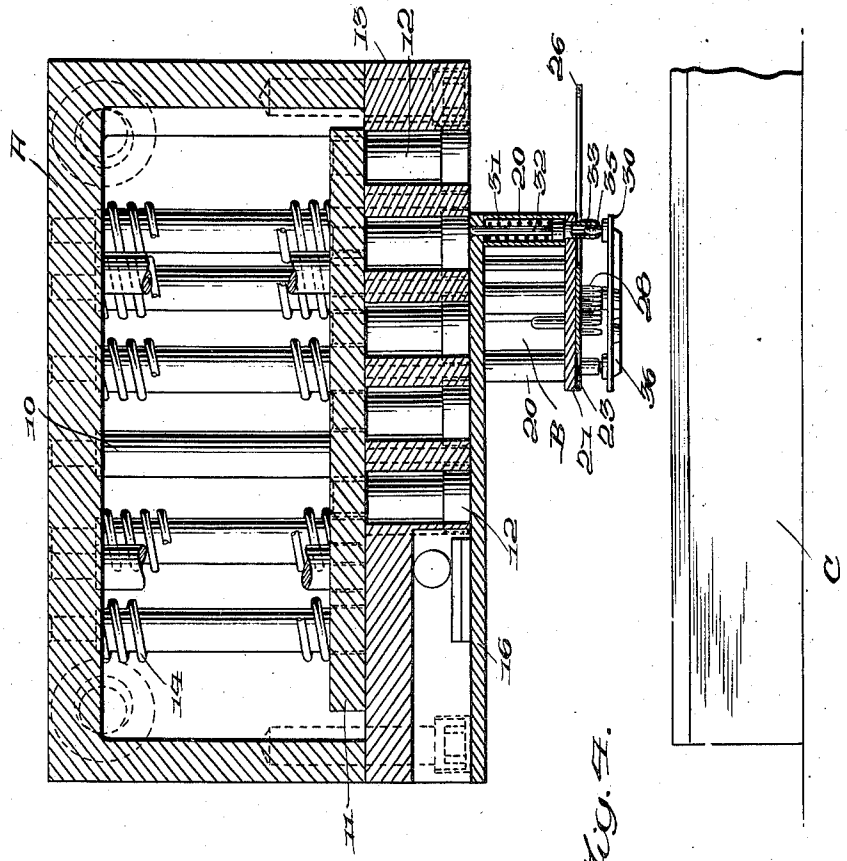


Fig. 3.

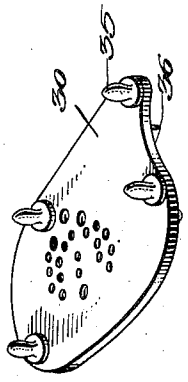
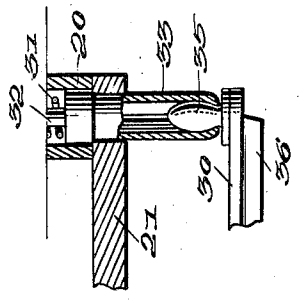


Fig. 4.



Inventor

Benjamin W. Freeman

By Riordon & Riordon

Attorneys

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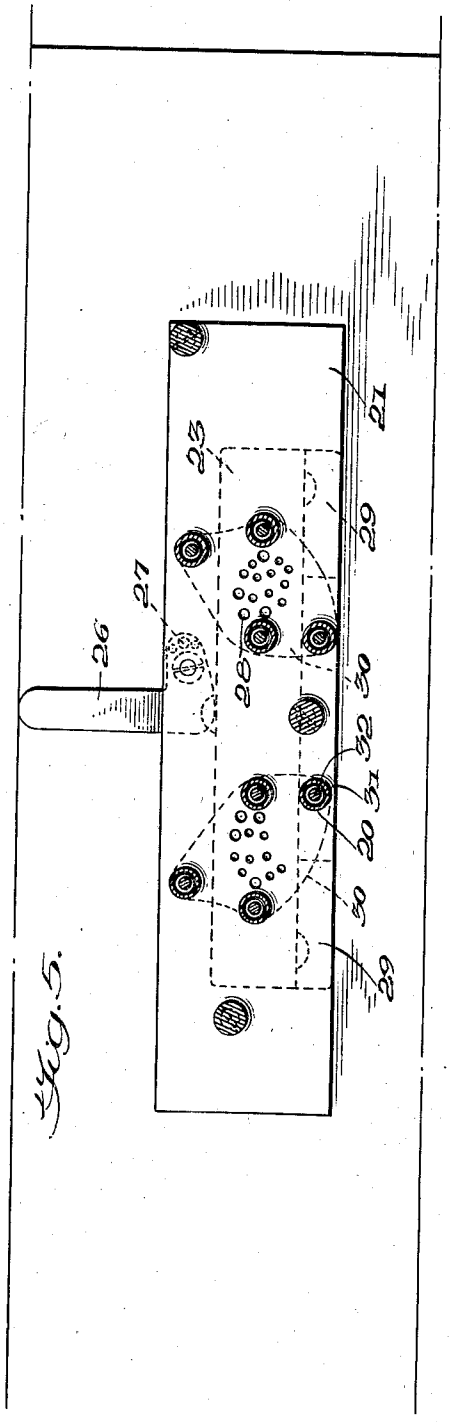


Fig. 5.

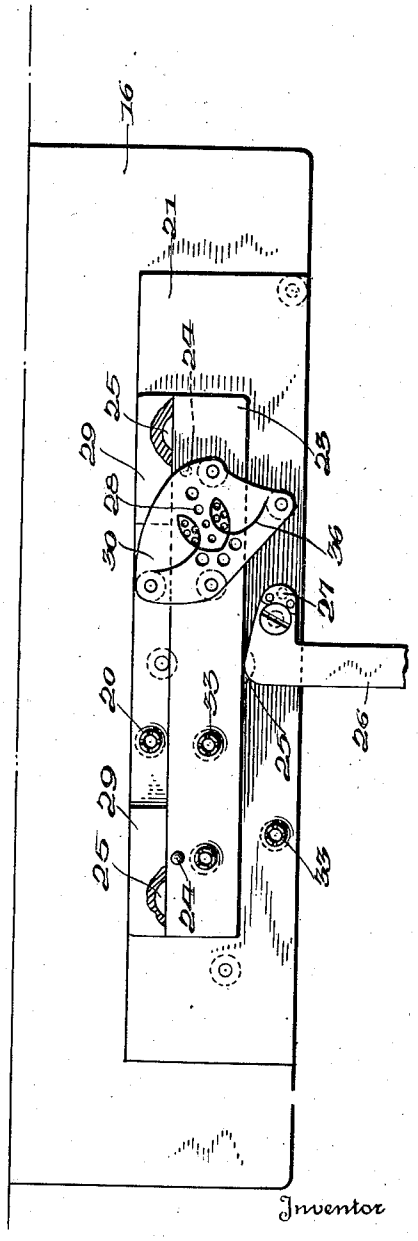


Fig. 6.

Inventor

Benjamin W. Freeman,

By Riordon & Riordon

Attorneys

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2,244,613

UNITED STATES PATENT OFFICE

2,244,613

DIE

Benjamin W. Freeman, Cincinnati, Ohio

Application July 13, 1936, Serial No. 90,427
Renewed December 27, 1938

32 Claims. (Cl. 101—30)

This invention relates to shoe machinery, and more particularly to improvements in dies for use in ornamenting shoe uppers and shoe parts by forming cutouts or perforations in portions thereof.

The illustrated embodiment of the invention, is a type of die adapted for operation upon skins, upper blanks, fitted or closed uppers, and the like, in which the work is marked with ink, or pigment, at the same time or as a part of a cycle of operations, during which the work is also ornamented by the perforating or cutting out of the design therein. Preferably the marking and perforating or cutting will be performed in a single machine operation.

Specifically this invention relates to an improved die particularly designed for use in the type of machine disclosed in the co-pending patent to Benjamin W. Freeman et al., No. 2,047,198, dated July 14, 1936, and reissued as Re. 20,294 on March 16, 1937, and in the co-pending application of Benjamin W. Freeman, Serial No. 83,796, filed June 5, 1936.

With many types of work, the pressure requirements for ornamenting and for stripping are very heavy and the machines described therein are designed to meet such requirements, particularly with relation to the stripping of the work from the die.

Conventional strippers include some mechanism directly associated with the die unit, e. g., a stripper plate mounted on springs which serve normally to maintain the plate in a position slightly in advance of the cutting edges of the die. The spring pressure must be so adjusted as to accommodate varying thicknesses of leather or material upon which the die is working, and difficulties arise in this connection, especially when marking edges are placed on the stripper. Thus if the spring pressure is adjusted to mark and properly strip a light piece of calf skin, it would probably injure a heavy piece of leather. Obviously, when the material is thick the stripper will be depressed more by the material, than would be the case with thin leather.

Varying pressures are required with different characters of leather as well as with different thicknesses, and as the number of cutouts or perforations in a piece of work is increased, the need for greater pressure likewise increases and such pressures are very difficult of attainment, if not impossible, with conventional stripping devices now in use.

In the solution of these problems, the machines of said applications and the die of the present invention contemplate a stripping mechanism, wherein the pressure is applied by an arrangement independent of the die, this being accomplished by building a stripper pressure applying mechanism into the machine as distinguished from supplying each individual die with a self-contained complete stripping arrangement. The usual stripper plate, mounted in advance of the cutter is retained and this plate may be provided with marking edges thereon.

A primary object of the present invention is the provision of a die with a structural design to cooperate with such a "built-in" pressure applying mechanism, and with a stripper plate resiliently mounted for normal location in advance of the cutting edges of the die, but with a mounting of such a nature that little or no pressure will be exerted on the plate, and hence on the work, until the main stripping pressure is applied.

In repairing or replacing cutter members, stripper plates and the like, considerable time and the use of tools is usually required, and it is another object of the present invention to improve the construction of dies, such that the stripper may be rapidly detached from the die without the use of tools.

It is a further object to provide for rapid detachment, not only of the stripper plate but of the cutter or tube plate, thus providing ready access to any part of the structure without the use of tools, at a minimum expenditure of time, and also to facilitate repair and replacement of the cutting members.

To this end a novel mounting for the stripper is utilized, in which resiliently mounted sockets are detachably engaged with studs on the stripper, and are mounted in the base of the die independently of the stripper.

The tube plate is arranged to be firmly latched to the base of the die, but in such a manner as to permit quick release.

To the attainment of the foregoing and other objects which will appear as the description proceeds, reference may be made to the accompanying drawings in which—

Fig. 1 is a front elevation, partly in section, illustrating a die mounted in a machine;

Fig. 2 is a side elevation partly in section on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of a stripper plate removed from the die;

Fig. 4 is an enlarged detail partly in section showing the mode of attaching the stripper plate to the die;

Fig. 5 is the top plan of the die block, and

Fig. 6 is a bottom plan of the die unit.

Referring now more particularly to the drawings in which like reference numerals designate like parts, it will be seen that such parts of the machine as are necessary to show the operation of the die have been illustrated. The die carriage A which houses the mechanism for applying stripping pressures, carries the die unit B, in operative relation to the work support C. The die carriage A is in the form of a hollow

block, reinforced internally by struts 10, any desired number of which may be utilized. Extending transversely of the interior of the carriage is a pressure plate 11, the ends of which project beyond the sides of the die carriage, and the side walls of the carriage are cut out to permit movement of this plate up and down within the carriage. This plate 11 carries a series of studs 12 on its lower side, which ride in suitable guide openings in the heavy base block 13 of the die carriage. Between the upper side of the plate 11 and the top wall of the carriage are a series of heavy springs 14 which are tensioned normally to maintain the ends of the studs 12 substantially flush with the bottom outer surface of the carriage.

The work support C as illustrated is a vertically movable plunger arranged to press the work upwardly against the die, thus effecting the ornamenting operation on the work. Posts 15 mounted on the work support are located to engage the extending ends of the plate 11 as the plunger rises, thereby raising the plate against the action of the springs 14, and at the same time raising the studs 12 within their guides. These posts 15 may be adjusted, for the purpose of regulating the movement of the plate 11, this adjustment affording a means of controlling the compression of the springs 14 and hence the downward pressure applied to the plate 11.

The die unit B, in the form illustrated, comprises a base plate 16, by means of which the unit is secured to the base block 13 of the die carriage. Lugs 17 may be provided to prevent springing of the die when in use. A dovetail wedge 18 and an upstanding perforated lug 19 may be utilized on the plate 16, to cooperate with suitable locking means on the base 13, a preferred form of locking means being described and claimed in the above-mentioned application Serial No. 83,796.

Secured to the base plate 16 by means of struts or sleeves 20 is a die block 21. A single block, suitably apertured for exit of chips or cuttings, might well be used, in lieu of the base plate 16 and die block 21 spaced apart by struts, but for economy in manufacture as well as facility in adjusting or varying the height of the die unit the spaced plates are preferable.

A cutter or tube plate 23 is detachably mounted on the die block 21, guide studs 24 being provided to ensure accurate placement thereof. As a convenient mode of attachment the die block 21 may be formed with enlarged openings and the tube plate 23 provided with overhanging flanges or lips insertable under the edges of such openings. A pivoted latch 26, mounted for movement over one of the flanges or lips 25 serves as a convenient means of latching the plate in position, it being understood the flanges on one edge of the plate are first inserted, and then the latch is swung over the flange on the opposite edge. Any suitable detent as indicated at 27 may be used as an effective means of holding the latch 26 in position at either end of the pivotal movement.

Plates 29 may be secured to the die block 21 in position to partially block the openings for the flanges 25, whereupon the flanges may be slid thereunder.

The die block 21 will be suitably perforated beneath the tubes or cutting members 23 to permit expulsion of chips and cuttings.

It is necessary that the stripper plate 30 be mounted for yielding movement with respect to the tubes 23, and to this end certain of the struts 20 are utilized to house a spring 31, encircling a freely reciprocable pin 32. The die block 21, the tube plate 23 and the base plate 16 are perforated to permit reciprocation of the pins. The outer end of each pin 32 terminates in a resilient socket 33, adapted to receive and grip one of the knobs or ball shaped protuberances 35 on the underside of the stripper plate 30. It will be evident that the stripper plate may be quickly removed from the die unit and as easily replaced, and being carried by the spring mounted pins 32, may readily move with respect to the tubes or cutting members 23. The springs 31 are preferably very light in construction, having sufficient strength only to position the stripper 30 normally in advance of the cutting element.

If the die is to be used for marking as well as cutting operations, marking elements 36 may be formed on the outer side of the stripper 30.

From the foregoing description, the operation and advantages of the invention will be readily apparent. When the die unit is secured in operating position on the base 13 of the die carriage, the location of the pins 32 is such that they are opposed to the studs 12, the latter being of much greater cross sectional area than the pins 32, and so distributed throughout the base 13 as to permit a wide leeway to the die maker in locating the pins 32.

As the studs 12 move upwardly or away from the die with the plate 11, clearance will be afforded beneath the heads of the studs for the upper ends of the pins 32 on the stripper plate.

Little or no pressure is required for ink marking, and consequently when there is relative movement between the plunger or work support C and the die carriage A, toward each other, the marking elements 36 on the stripper plate will touch the work lightly, yielding toward the cutting elements under continued pressure. This operation will be followed by the cutting out step as further relative movement occurs, the pins 32 meanwhile projecting up into the guides for the studs 12. The posts 15 will, by that time, have lifted or pushed the plate 11 upwardly to compress the springs 14, and carry the studs 12 away from the base plate 16.

After an operation has been performed on the work, the plunger or work support C and carriage A separate, whereupon the springs 14 will push the plate 11 and studs 12 toward the die unit and against the projecting ends of the pins 32 thereby pushing the stripper plate 30 outwardly to remove the work from the cutting elements. At this time, as will be evident, the marking elements are not pushing the work against the plunger, i. e., the plunger is offering no resistance at all, to the work, which therefore may be readily stripped from the cutting elements without injury by the marking elements, it being a feature of this invention, that during the portion of the stroke when the cutting elements are penetrating the work, the resilient opposition of the marking elements 36 to the relative movement, is insufficient to cause an indentation or cutting of the work by the marking elements.

Many economies in the manufacture of dies may be effected by the arrangement of this invention. Inasmuch as the means for providing stripping pressures is not required in an individual die, the die construction can be simplified by the elimination of stripper springs, rubber strippers, reduction in the number of stripper

posts and simplification of the various parts. By the simplification and reduction in number of the stripper posts it is possible to locate these posts at points on the die heretofore thought impractical due to the small space provided.

As described in the aforesaid co-pending cases, marking plates, stripper plates, and the like can be made in sections corresponding to the work to be cut and marked and may be provided with a top surface having portions higher at some points than at others, thereby accommodating the plate to laminated work such as appliques, overlays, foxings, saddles, and the like, which in a closed shoe upper form a surface varying in level. A marking plate made in sections, will adjust itself readily to care for varying levels or thicknesses of the work without exerting greater pressures on high points than on low points, or in other words, the marking will be uniform throughout.

Again, an even distribution of pressure is obtained, regardless of the particular die used, and tendency toward rocking or tilting of the stripper is avoided. This prevents binding of the stripper plate, with attendant failure to strip.

It is to be understood that the illustrated embodiment of the invention as described herein, is intended as illustrative, rather than limiting, as many modifications within the scope of the invention will occur to those skilled in the art. For example the arrangement of the die may be such as to cut up instead of down; the relative movement between the die carriage and the work support may be obtained by moving the die carriage toward the work support; and the die itself may be made with a single base plate instead of a die block separated by struts from the base plate as described herein.

The features of the invention, are of course, readily applicable to dies which cut or perforate only, and which are not utilized for marking purposes.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A die unit for use in an ornamenting machine, comprising a base, cutting means on said base, stripping means associated with said cutting means, and mounted for movement relative to said cutting means, means to exert a light yielding pressure against said stripping means to maintain same normally in an extended position relative to said cutting means, and means engageable with said stripping means and with a pressure applying element of the machine, said last means being effective by such engagement to actuate the stripping means through a work stripping operation.

2. A die unit for use in an ornamenting machine, comprising a base, cutting means on said base, stripping means associated with said cutting means, and mounted for movement relative to said cutting means, means to exert a light yielding pressure against said stripping means to maintain same normally in an extended position relative to said cutting means, and means movably mounted in said unit, said last means being engageable with said stripping means and with a pressure applying element of the machine, and effective by such engagement to actuate the stripping means through a work stripping operation.

3. A die unit for use in an ornamenting machine, comprising a base, cutting means on said base, stripping means mounted for movement relative to said cutting means, means to exert a light yielding pressure against said stripping means to maintain same normally in an extended position relative to said cutting means, and means connected to said stripping means for movement therewith, said connected means being engageable with a pressure applying element of the machine, and effective by such engagement to actuate the stripping means through a work stripping operation.

4. A die unit for use in an ornamenting machine, comprising a base, cutting means on said base, stripping means mounted for movement relative to said cutting means, means to exert a light yielding pressure against said stripping means to maintain same normally in an extended position relative to said cutting means, and means mounted in said unit and connected to said stripping means for movement therewith, said connected means having a portion extendable beyond the normal confines of the unit whereby to engage a pressure applying element of the machine, and effective by such engagement to actuate the stripping means through a work stripping operation.

5. A die unit for use in an ornamenting machine comprising, a base, cutting means thereon, a combined marking die and stripper movably mounted relative to said base, means to apply light pressure to said combined marking die and stripper, for marking the work, and means connected to said marking die for movement therewith into engagement with a pressure applying element of the machine, said last means being effective by such engagement to actuate the combined marking die and stripper through a work stripping operation with respect to said cutting means.

6. In a self-contained die unit of the class described, the combination with a die base in said unit having a surface effective to engage a surface of a bed and platen type of ornamenting machine so that the die unit may be supported in a stationary operative position in the machine, and may be removed as a unit from said machine, of cutting means on said die base, stripping means resiliently mounted for movement relative to said cutting means, said stripping means having a stud extending through the base and movable with said stripper, during normal operation of the cutting means, to a position where one end projects beyond the plane of an external surface of the base, said stud thereafter being effective to actuate the stripping means.

7. In a self-contained die unit of the class described, the combination with a die base in said unit having a surface effective to engage a surface of a bed and platen type of ornamenting machine so that the die unit may be supported in a stationary operative position in the machine, and may be removed as a unit from said machine, of cutting means on said die base, stripping means resiliently mounted for movement relative to said cutting means, a stud extending through said die base, said stud being detachably connected to said stripping means for movement therewith during normal operation of the cutting means, to a position where one end projects beyond an outer surface of said base, said stud being effective thereafter to actuate the stripping means.

8. In a die of the class described, a base, cutting means on said base, and a stripper for said cutting means having a rounded protuberance on its underside, a resiliently mounted gripping means carried by said base for engagement with said protuberance and effective by gripping action

therewith to detachably secure said stripper in yieldable relation to the base.

9. In a die of the class described, a base, cutting means detachably carried by said base, and a stripper for said cutting means having a rounded protuberance on its underside, a resiliently mounted gripping means carried by said base for engagement with said protuberance and effective by gripping action therewith to detachably secure said stripper in yieldable relation to the base.

10. In a die of the class described, a base, a cutter plate having cutting elements thereon and formed with projections, said base being perforated to receive said projections, and having latching means effective to detachably secure said cutter plate in position on said base when said projections are extended into the perforations of the base.

11. In a die of the class described, a base, a cutter plate having cutting elements thereon and formed with projections, said base being perforated to receive said projections, and having latching means effective to detachably secure said cutter plate in position on said base when said projections are extended into the perforations of the base, and a stripper for said cutting elements detachably mounted on said base.

12. A die of the class described, comprising, a die block and a base plate, said die block and base plate being spaced by hollow struts, said block and plate being formed with perforations located in coincident relation to the respective ends of the several struts, cutting means mounted on said die block and a stripper associated with said cutting means, said stripper having studs extending from its underside through said perforations and struts, spring means normally maintaining said stripper slightly advanced with respect to said cutting means but yieldable toward the cutting means upon engagement of a work piece by the stripper, said perforations in the base plate being effective to permit projection of the studs therethrough.

13. In a die of the class described, a base, cutting means on said base, and a stripper for said cutting means formed with marking elements effective to mark the work during a cutting operation, and separable, inter-engaging means detachably mounting said stripper on said base.

14. In a self-contained die unit of the class described, the combination with a die base in said unit having a surface effective to engage a surface of a bed and platen type of ornamenting machine so that the die unit may be supported in a stationary operative position in the machine, and may be removed as a unit from said machine, of a marking die mounted for movement on said base, said marking die being provided with a stud extending through the die base and movable with the marking die during a normal marking operation, to a position where one end projects beyond the plane of an outer surface of said base.

15. A combination die unit for use in ornamenting machines, comprising a base, a cutting die on said base, a combined stripper and marking die mounted for movement relative to said cutting die, effective upon engagement with the work to mark same, and effective thereafter to strip the work from the cutting die, and means attached to said stripping means and engageable with a pressure applying element of the machine, said last means being effective by such engagement to actuate the stripping means.

16. A die of the class described, for use in a machine having pressure applying means, comprising cutting means, stripping means in said die therefor, means constantly applying light stripping pressure to said stripping means, and additional means, engageable with the pressure applying means of the machine, effective to apply stripping pressure intermittently to said stripping means.

17. A die of the class described for use in a machine having a pressure applying plunger effective to produce relative movements between a supported work piece and the die, into and out of a cutting and marking contact, comprising a base, cutting means on said base, and marking means overlying and movable with relation to said cutting means, said marking means being formed with marking elements adapted to receive ink and ink mark the work piece during a single operation in which the work piece is cut, means resiliently mounting said marking elements on said base in a plane advanced with respect to the cutting means, said resilient mounting being proportioned and arranged to develop a pressure sufficient only to provide a light contact of the marking elements with the work piece throughout the cutting movement, to properly ink mark the supported work piece as part of a single marking and cutting operation, and means in said die effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

18. A die of the class described for use in a machine having a pressure applying plunger effective to produce relative movements between a supported work piece and the die, into and out of a cutting and marking contact, comprising a base, cutting means on said base, and a marker plate overlying and movable with relation to said cutting means, said plate being formed with marking elements adapted to receive ink and ink mark the work piece during a single operation in which the work piece is cut, means resiliently mounting said plate on said base in a plane advanced with respect to the cutting means, said resilient mounting being proportioned and arranged to develop a pressure sufficient only to provide a light contact of the marking elements with the work piece throughout the cutting movement, to properly ink mark the supported work piece as part of a single marking and cutting operation and means in said die effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

19. A die of the class described for use in a machine having a pressure applying plunger effective to produce relative movements between a supported work piece and the die, into and out of a cutting and marking contact, comprising a base, cutting means on said base, and a marker plate overlying and movable with relation to said cutting means, said plate being formed with marking elements adapted to receive ink and ink mark the work piece during a single operation in which the work piece is cut, means including light springs mounting said plate for yielding movement on said base, relative to said cutting means, said springs being proportioned and arranged to project said plate normally beyond said cutting means, and to develop a pressure sufficient only to provide a light contact of the marking elements with the work piece through-

out the cutting movement, to properly ink mark the supported work piece as part of a single marking and cutting operation, and means in said die effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

20. A die of the class described for use in a machine having a pressure applying plunger effective to produce relative movements between a supported work piece and the die, into and out of a cutting and marking contact, comprising a base, cutting means on said base, and marking means overlying and movable with relation to said cutting means, said marking means being formed with marking elements adapted to receive ink and ink mark the work piece during a single operation in which the work piece is cut, means including light springs mounting said marking elements for yielding movement on said base relative to said cutting means, said springs being proportioned and arranged to project the marking elements normally beyond said cutting means and to develop a pressure sufficient only to provide a light contact of the marking elements with the work piece throughout the cutting movement, to properly ink mark the supported work piece as part of a single marking and cutting operation, and means in said die effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

21. A die of the class described comprising a base, cutting means on said base, and a plate overlying and movable with relation to said cutting means, said plate being formed with marking elements effective to ink mark the work during a cutting operation, mounting means for said plate having an amplitude of movement greater than the relative movement between the work and that portion of the cutting means of the die which must penetrate the work in order to cut it, and spring means resisting movement of said mounting means insufficiently to build up a pressure during the penetration of work by said cutting means greater than required for ink marking the work without penetrating or indenting the same. and means in said die effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

22. A cutting and marking instrumentality for use with a cutting and marking operation wherein means is provided for developing stripping pressures exclusive of the cutter and marker, comprising a base, cutting means on said base, and marking means overlying and movable with relation to said cutting means, said marking means being formed with marking elements effective to ink mark the work during a cutting operation, mounting means for said marking means having an amplitude of movement greater than the relative movement between the work and that portion of the cutting means of the instrumentality which must penetrate the work in order to cut it, and spring means resisting movement of said mounting means insufficiently to build up a pressure during penetration of work by said cutting means greater than required for ink marking the work without penetrating or indenting the same by said marking elements, and means in said instrumentality effective thereafter to transmit pressures of greater intensity than said marking pressure, to the work piece, whereby to strip the work piece from the cutting means, after a complete marking and cutting operation.

23. A cutting and marking instrumentality for use with a cutting and marking operation wherein means is provided for developing stripping pressures exclusive of the cutter and marker, comprising a base, cutting means on said base, movable stripping means associated with said cutting means, work marking elements movable with said stripping means, means carried by the instrumentality to position said stripping means normally advanced with respect to said cutting means and to apply light pressure through said stripping means to mark the work, and additional means to receive and transmit a pressure to the work in the same direction as said first mentioned pressure, whereby to strip the work from the cutting means.

24. A cutting and marking instrumentality for use with a cutting and marking operation wherein means is provided for developing stripping pressures exclusive of the cutter and marker, comprising a base, cutting means on said base, a stripper plate for said cutting means, work marking elements mounted on said stripper plate, means carried by said instrumentality to apply light pressure to said plate to mark the work, and to position said plate normally in advance of said cutting means, and means independent of said pressure applying means to receive and transmit additional pressure against the work whereby to strip the work from the cutting means.

25. A cutting and marking instrumentality for use with a cutting and marking operation wherein means is provided for developing stripping pressures exclusive of the cutter and marker, comprising a base, cutting edges on said base, a marking plate resiliently mounted on the base in advance of the cutting edges, for yielding movement upon engagement with the work piece, means mounted in and forming part of the instrumentality and positioned to receive and transmit pressure to the work piece when engaged with the cutting edges and marking plate, to assist in stripping it from said cutting edges, the resilient mounting of the marking plate being such as to impart a marking pressure only to the work piece engaged thereby, independently of the aforesaid pressure receiving and applying means.

26. A cutting and marking instrumentality for use with a cutting and marking operation wherein means is provided for developing stripping pressures exclusive of the cutter and marker, comprising a base, cutting edges on said base, a marking plate spring-mounted resiliently over said cutting edges, in advance thereof, and surrounding same so that relative movement between the parts of the instrumentality will press a supported work piece against the said parts to first depress the marking plate and then cut the work piece as the cutting edges project through said plate, the spring means for resiliently mounting the marking plate being proportioned to apply a proper marking pressure to the work engaged thereby, and additional means arranged to receive and transmit a stripping movement to the work in addition to the spring means for the marking plate, said additional

means adapted to be actuated by a machine mechanism independent of the marking plate.

27. A die unit for use in an ornamenting machine, comprising a base, cutting edges on said base, a resiliently mounted marker in said unit, the mounting thereof being constructed and arranged to yieldingly project the marking portion of the marker beyond the plane of the cutting edges, under a light pressure which will resist movement properly for effecting the marking of a piece of work, and means to receive and transmit a pressure to the work additional to the marking pressure of the resilient mounting for the marker, whereby to facilitate stripping the work from the die unit.

28. A die unit for use in an ornamenting machine, comprising a base, a die block, cutting means on said die block, said die block being perforated adjacent said cutting means and arranged in spaced relation to said base to provide a chamber for the reception of cuttings, stripping means associated with said cutting means, and mounted for movement relative to said cutting means, and means engageable with said stripping means and with a pressure applying element of the machine, said last means being effective by such engagement to actuate the stripping means.

29. A die unit for use in an ornamenting machine, comprising a base, a die block, cutting means on said die block, said die block being perforated adjacent said cutting means and arranged in spaced relation to said base to provide a chamber for the reception of cuttings, stripping means associated with said cutting means, and mounted for movement relative to said cutting means, and means movably mounted in said unit, said last means being engageable with said stripping means and with a pressure applying element of the machine, and effective by such engagement to actuate the stripping means.

30. In a die of the class described, cutting means, stripping means therefor, means mounting said stripping means for quick detachment from the die, means constantly applying a light stripping pressure to said stripping means, and means to receive intermittently applied stripping pressure.

31. In a die of the class described, a base, cutting means on said base, and a stripper for said cutting means formed with marking elements effective to mark the work during a cutting operation, and means detachably mounting said stripper in said die.

32. In a die of the class described, a base, a die block, cutting means on said die block, said die block being perforated adjacent said cutting means and mounted in spaced relation to said base to provide a chamber for the reception of cuttings, stripping means associated with said cutting means and including marking elements effective to mark the work during a cutting operation, and means detachably mounting said stripping means in said die.

BENJAMIN W. FREEMAN.