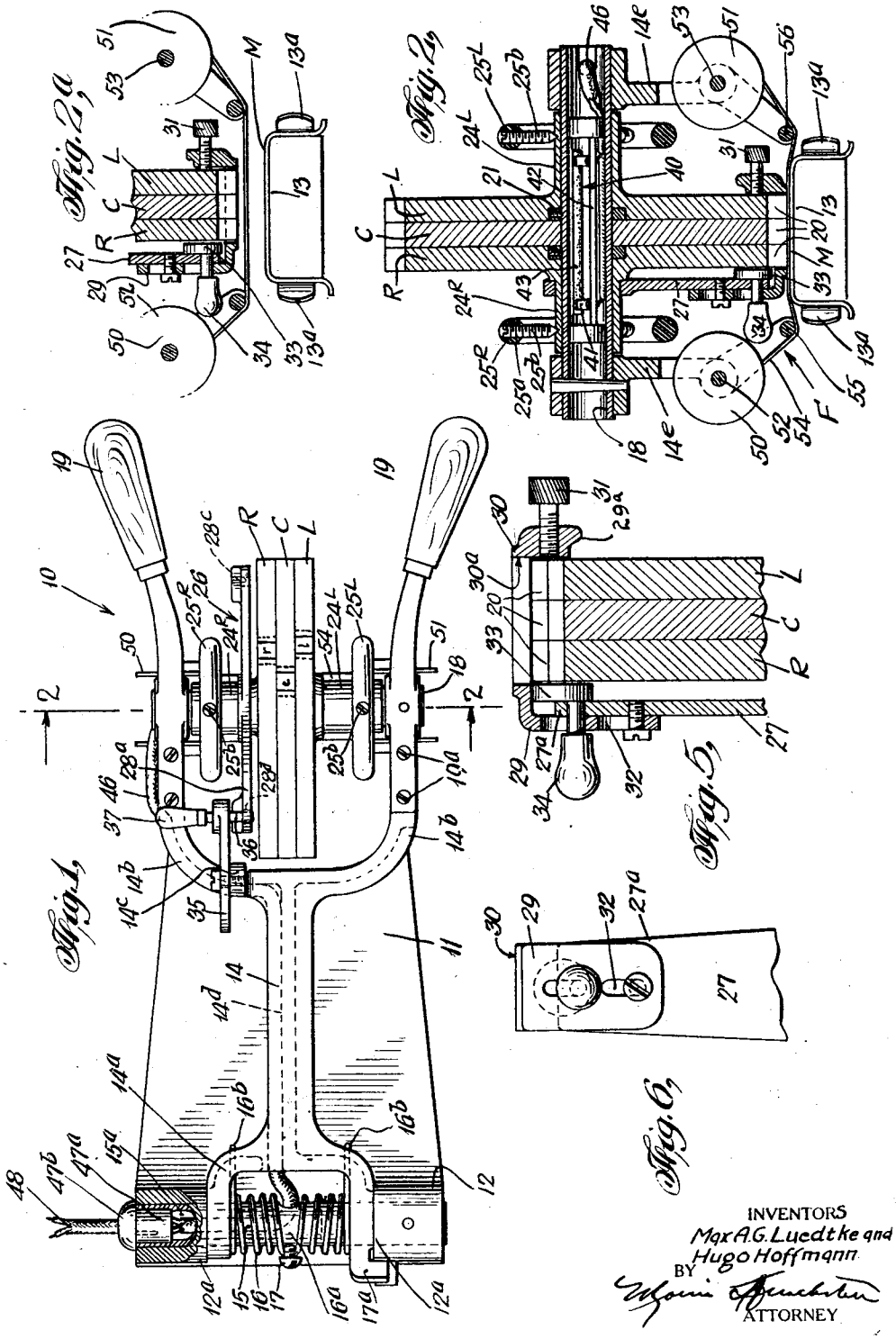
Sept. 3, 1929. M. A. G. LUEDTKE ET AL 1,726,575

MARKING, PRINTING, AND EMBOSSING DEVICE

Filed June 15, 1926 2 Sheets-Sheet 1



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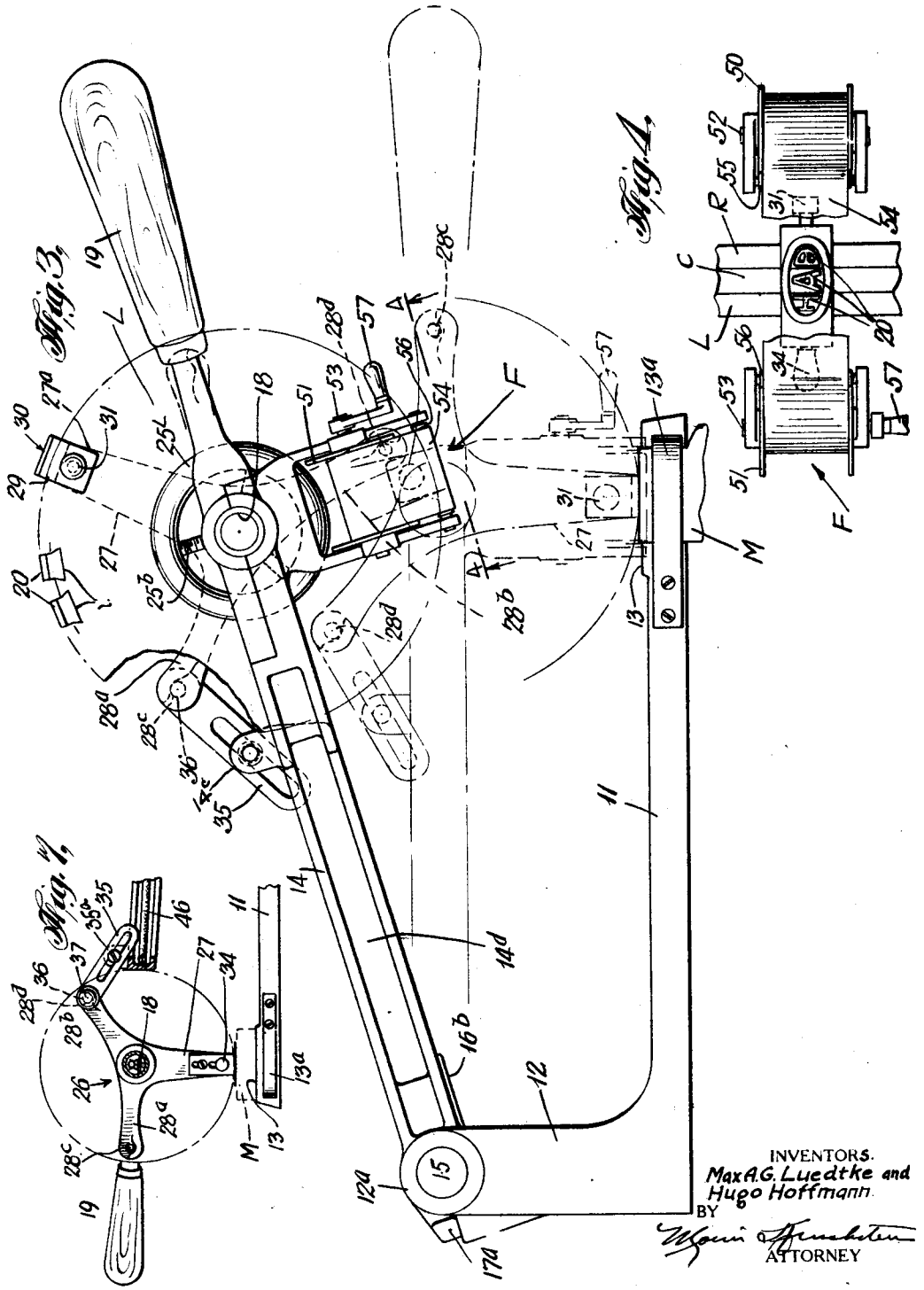


Fig. 3.

Fig. 4.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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MARKING, PRINTING, AND EMBOSSING DEVICE.

Application filed June 15, 1926. Serial No. 116,076.

This invention relates to marking, printing, and embossing devices.

One object of the invention is the provision of an improved apparatus of simplified construction for branding, embossing and applying plain or lustrous letters, ornamental designs, monograms or legends on articles made of leather, leather substitute, fibre, paper, woven textile fabrics and other material which apparatus shall comprise few and simple parts and shall be compact in construction, relatively cheap to manufacture, easy and simple to manipulate, and practical and efficient in operation to a high degree.

A further object of the invention is the provision, in an apparatus of the character described, of means for adjusting the printing position of type elements relative to the platen supporting the material being printed upon so as to conform to various thicknesses of such material.

Another object of the invention is to provide simpler and more cheaply constructed means for securing together the type element carrying discs with the type elements in proper alignment.

A still further object is to provide an improved means for retaining the material or article being worked upon in position on the platen.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

Certain features herein shown and described are shown, described and claimed in our co-pending applications Serial No. 76,595 and Serial No. 86,314 filed in the United States Patent Office on the 21st day of December, 1925, and February 5, 1926, respectively, and accordingly not claimed herein.

With the above exception, the invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a plan view of the machine embodying the invention.

Fig. 2 is a cross-sectional view taken on line 2—2 in Fig. 1.

Fig. 2ª is a fragmentary cross-sectional view showing the disposition of the parts with the discs partially raised from the platen.

Fig. 3 is a side elevational view of the improved device showing the frame in raised position.

Fig. 4 is a bottom view looking in the direction of the arrows 4—4 in Fig. 3, a portion of the tape being broken away to expose the type elements.

Fig. 5 is an enlarged fragmentary sectional view showing the detailed construction of the border mounting.

Fig. 6 is a fragmentary portion of the side elevational view of said border mounting.

Fig. 7 is a fragmentary side elevational view showing the adjustment means set to print on a comparatively thick article.

Referring in detail to the drawing, 10 denotes an apparatus embodying the invention which, as here shown, is constructed particularly for applying identification initials, monograms, designs, or the like to sweat bands of hats, bags, brief cases and for the like purposes. The apparatus 10 comprises an elongated bed or base 11 having spaced stanchions 12 upstanding at one end thereof, the other end of said base being provided with a raised surface or platen 13 on which rests the article or material M during application of the branding, embossing or printing as will hereinafter be described. Where said material M comprises a sweat band or the like article, there is provided suitable gripping means such as a pair of spring members 13ª positioned to extend along opposite sides of the base 11 adjacent the platen 13 for retaining the article against accidental movement as is shown in Figs. 2 and 3.

A frame 14 is pivotally mounted to swing on a shaft 15 which is fixedly supported between the upper ends 12ª of said stanchions. To retain the frame 14 in a normally raised position, the pivoted or rear end thereof may be made with a bifurcated portion 14ª spaced

to accommodate a suitable coil spring 16 wound on the shaft 15. Said spring 16 is suitably fixed to the shaft 15, preferably by screw 17 securing the mid-portion 16^a thereof to said shaft, the free ends 16^b of the spring being extended to the underside of said bifurcated portions 14^a, as shown in Fig. 1. The spring 16 is set to urge the ends 16^b thereof against the portions 14^a for normally retaining the frame 14 in a raised position and serves to automatically return said frame to its raised position after having been depressed. Suitable detent means may be provided for limiting the upward swing of the frame 14, as for example a stop 17^a projecting from one of the bifurcated portions 14^a, said stop being adapted to engage the adjacent stanchion as is shown in Figs. 1 and 3. The outer or free end of the frame is formed with spaced, forwardly extending, bracket arms 14^b which carry therebetween hollow shaft 18 rigidly fixed thereto and extending transversely of the length of the frame 14. Each arm 14^b may terminate in an outwardly and forwardly extending handle 19, said handles being attached in an overlying relation to the end portions of said arms by bolts 19^a so that the overlying portions of said arms and handles form a split bearing or support for the ends of the shaft 18. (See Figs. 1 and 2.)

Mounted for rotation in the shaft 18 between the bracket arms 14^b may be one or more discs comprising, as for example, a set of three consisting of a center disc C, a right disc R and a left disc L. The discs are rotatively adjustable on the shaft 18 for movement with respect to each other, and each disc carries on the peripheral surface thereof in uniformly spaced relation, suitable die or type elements 20, such as letters of the alphabet, numerals or other indicia, from which may be set up a wide and varied range of desired combinations of initials, designs, monograms or legends to be applied to the material or article worked upon.

The discs are arranged to be releasably secured together so as to move as a unit when the type elements are set in a desired combination. For this purpose, the center disc C is mounted to revolve freely between a pair of collars 21 fixed to the shaft 18 and the discs R and L positioned to abut the opposite sides of said center disc C. Said discs R and L may have integrally formed with each extended hub or hollow shaft portions 24^R and 24^L, respectively, which are slidably and rotatably supported on the shaft 18. Said hollow shaft portions 24^R and 24^L may be each provided with suitable hand wheels or knobs 25^R and 25^L respectively fastened to the extended ends of said shaft portions to facilitate the setting of the discs, as will hereinafter appear.

Each of the hand wheels 25^R and 25^L is preferably constructed to have a ring rim 25^a made of a non-metallic material, such as fibre, "bakelite," or the like material having heat insulating properties, and radially disposed set screws 25^b extending through said rims. Said set screws serve as spokes for the wheels and also as a fastening means for firmly securing said wheels to the hollow shafts 24^R and 24^L as shown in Figs. 1 and 2.

The type elements 20 carried on the peripheral surface of each disc may comprise twenty-six letters of the alphabet uniformly spaced from each other, and to simplify the construction and decrease the cost of manufacture, said elements 20 are preferably made independent of the discs and fixedly secured in position in any suitable manner, as by providing dovetail grooves or spaces. If desired, one or more extra grooves may be provided for receiving demountably interchangeable type elements (not shown) in the manner fully described in my aforementioned co-pending application, Serial No. 76,595.

To secure the discs against relative displacement after aligning the type elements 20 in a desired combination, any suitable means may be provided. As shown in Figs. 2, 6 and 7, said means comprises a spider 26 supported to rotate on the hollow shaft 34^R, said spider having spaced radially extending arms 27, 28^a and 28^b. On the end 27^a of the arm 27, there is movably mounted a clamping member 29 which may also serve to support a border type 30 for surrounding the aligned type elements 20 in the manner hereinafter described. The member 29 has a finger screw 31 threaded into the free end 29^a thereof, said screw 31 being adapted to tighten against the exterior side of the disc L for releasably clamping discs R, L, C together, as shown in Fig. 2. To permit the member 29 to be raised out of engagement with the discs when the finger screw 31 is released, any suitable means such as a sliding pin and slot connection 32 is provided at the end 27^a of the arm 27 and to facilitate raising said member from its normal effective clamping position, a suitable cam or rock shaft 33 may be journaled on member 29 over said pin and slot connection 32. The cam 33 which is adapted to engage on the underside of the member 29 may be provided with a suitable operating finger-piece 34 extending outwardly from the arm 27 as shown in Fig. 5.

The arms 28^a and 28^b are arranged to engage with an adjustable stop 35 mounted on one of the bracket arms 14^b, as at 14^c, for limiting the rotary movement of said spider to facilitate the aligning of the type elements on the discs and for fixedly securing the aligned elements to the frame 14 during the printing operation as will hereinafter be explained. The stop 35 is adapted to selectively engage either the arm 28^a or the arm

28[b], and, as will be seen from Figs. 1 and 7, when the spider is rotated rearwardly, the arm 28[a] will abut a sliding pin 36 mounted on the adjustable stop member 35, said pin 36 being provided with a finger-piece 37 whereby it may be withdrawably entered into a hole 28[c] in said arm 28[a] for releasably locking the spider 26 to the stop member 35 and the frame 14.

With the arm 28[a] locked to the stop member 35, the clamping member 29 which is provided with an opening 30[a] through which the type elements 20 may be aligned with the border type 30 surounding said opening, is then positioned above the frame 14 so that the operator has an unobstructed view for the alignment setting operation of the type elements 20.

The apparatus 10, as shown in the drawing, is provided with three discs with which a desired combination of type letters, as, for example, HAB, may be set up and aligned as follows: The arm 28[a] is locked to the stop member 35 and the clamping member 29 is raised to the position shown in Fig. 5 by rotating the finger-piece 34 so that the discs L, C and R may be freely rotated on the shaft 18. The knob 25[L] is then pulled to the left to move the disc L out of its normal abutting position against the disc C. The discs C and R are now rotated together by manipulating the knob 25[R] until the desired type letter A appears on the disc C beneath the opening 30[a]. Before returning the knob 25[L] to its normal position, it is rotated until another desired type letter H aligns with said letter A. Then the knob 25[L] is pressed to slide the disc L back into its normal abutting position against the disc C. The knob 25[R] is next pulled to the right for sliding the disc R out of its normal abutting position against the disc C. The disc R may now be rotated, free from the other discs, until the third desired type letter B appears below said opening 30[a] in alignment with the type letters, H and A, already set, thus completing the sequence of type letters forming the desired combination. The knob 25[R] is now pushed to slidingly return the disc R to its normal abutting position against the disc C. On manipulating the finger-piece 34, the cam 33 is rocked for lowering the member 29 into its effective clamping position and for projecting the type elements HAB through the opening to align said elements with the type border 30. The finger screw 31 may now be tightened to clamp the discs together.

To bring the desired combination of aligned type letters HAB from their setting position into position for branding, embossing or printing the article or material M, resting on the raised surface 13 of the base 11, and gripped by members 13[a], the sliding pin 36 is withdrawn from the hole 28[c] of the arm 28[a] and the discs rotated as a unit by means of finger-piece 34 until the end of the arm 28[b] abuts pin 36 where it is inserted into a hole 28[d] and locked to the stop 35. The arm 28[b] is designed to bring the aligned type elements 20 with the outlined border type 30 in proper position ready for evenly contacting with the material M on the platen 13. On applying pressure to the handle 19, the frame 14 is swung downwardly and the type letters are brought into contact with the article or material M. Upon releasing the handle 19, the frame will automatically return to its raised position through the action of spring 16 and the aligned type letters may then be brought back to their setting position by releasing the arm 28[b] from the stop member 35 and rotating the discs and again locking the arm 28[a] to the stop member 35.

Where ordinary or plain printing is to be done, any suitable form of ink applying device (not shown) may be used to ink the type elements in any manner well understood in the art. Such device is preferably installed below the front side of the handles 19 so that the type elements are inked as the discs are revolved as a unit on the shaft 18 during the rotation thereof from the setting position to the printing position as described above.

So that the apparatus 10 may be used for branding, embossing or applying lustrous letters, a suitable heating means for the type and border elements is provided. Said means may comprise an electric heater unit 40 of any suitable construction, and as here shown forms a core fitted to extend through the hollow shaft 18, as shown in Fig. 2. Said heater unit is here seen to comprise a pair of spaced clip terminals 41 mounted on an insulated base 42 and one or more resistor elements 43 which are removably supported by said clip terminals. Conductor wires 46 connect with said clip terminals 41 and pass along an edge channeled groove 14[d] formed along the edge of the frame 14. The ends 46 of said conductor wires may extend through an axial passage 15[a] provided in the shaft 15 and may be terminated by a receptacle 47[a] of a detachable fitting 47 having a cap 47[b] which is adapted to connect with a suitable electric power source (not shown) by means of a portable conductor wire 48.

The member 29, discs C, R and L and shaft 18 are preferably made of copper, bronze, aluminum or other material having a relatively high heat conductivity so that the border and type elements are readily heated to the required working temperature by the unit 40.

In branding or plain-embossing an article or material M, the unit 40 is first connected to the power source for heating the type letters which, after having been set in a de-

sired sequence and rotated into printing position, are forced against the article or material M by applying pressure to the handle 19 as described above.

By interposing a metallic foil or leaf of gold, silver or other metal or composition between the heated border and type elements, and the material M, lustrous letters may be stamped or printed thereon. For this purpose, a simple strip feeding mechanism F may be incorporated in the apparatus 10. In the form shown in the drawing, said mechanism comprises a pair of spools 50 and 51 revolubly mounted on shafts 52 and 53, respectively, which are suitably supported on hangers 14^e extending down from bracket arms 14^b. A supply of strip material 54 in form of a roll is carried on the spool 50. Said strip material has one side thereof coated with a metallic foil (not shown) from which the lustrous letters are formed, said strip being fed between the type elements and the platen 13 with the coated side facing down. Any suitable strip material or metal foil such as is in commercial use may be employed.

Spaced rollers 55 and 56 are supported from the hanger 14^e, preferably so as to extend below the normal level of the type elements for guiding the strip material 54 across the discs and for holding it out of contact therewith when the frame 14 is in raised position, as shown in Fig. 2^a.

The strip 54, after use, may be wound on the spool 51 by rotating the spool shaft 53 by means of a crank arm 57. The spool 50 carrying the supply material 54 is preferably held against free rotation on shaft 52 by any suitable friction means in any well understood manner. Thus, the feeding mechanism F is manually operated and the advancing of the strip is effective by simply rotating the crank arm 57 after each printing operation.

In using the invention, the portable conductor 48 is connected to an electric power source to heat the type elements on the disc. By raising the member 29 and manipulating the knobs 25R and 25L, as described above, the discs are set so that the desired combination of letters or other type elements appears under the opening 30^a of the member 29. A briefcase or other article, such as sweatband M, is then positioned on the platen 13 and gripped by the members 13^a. After lowering the member 29 and clamping the discs together therewith, the member 29 with the desired type elements is swung into printing position and the handle 19 is depressed. As the frame 14 descends, the type elements engage the strip material 54 to press the foil or coated side thereof against the sweatband M. The heat from the type and border elements causes the foil to adhere to the material in outline corresponding to the shape and design of the type and border elements.

To mark, print or emboss any articles of various thicknesses, it is desirable to provide suitable means whereby the aligned type and border elements may contact with the article evenly throughout. As seen from Fig. 3, the aligned type and border elements pivot about the shaft 15, so that the elements, when set in printing position are disposed to evenly contact with the upper surface of an article M having a definite thickness. When the article M is replaced by another of different thickness, the plane of contact of the type and border elements with the replaced article should be varied to conform with the change of level of the upper surface of the latter article to obtain the best printing results. To accomplish this purpose, the stop member 35 is made adjustable as for example, by providing a slot and screw connection 35^a for mounting said member 35 on the frame 14. Thus, the adjusting stop may be set as shown in Fig. 7 to accommodate thin or thick material.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interposed as illustrative and not in a limiting sense.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:—

1. An apparatus of the character described comprising a plurality of sets of type elements, means for supporting said sets of elements for movement relative to each other, means for selectively aligning the type elements of the various sets, means extending adjacent said elements for clamping said sets in an aligned position, means spaced from said elements for supporting an article, and means for bringing the aligned elements into contact with said article.

2. An apparatus of the character described comprising a plurality of sets of type elements, means for supporting said sets of elements for movement relative to each other, means for selectively aligning the type elements of the various sets, means extending adjacent said elements for clamping said sets in an aligned position, means spaced from said elements for supporting an article, clamping means for retaining said article to the supporting means, and means for bringing the aligned elements into contact with said article.

3. An apparatus of the character described comprising a plurality of sets of type elements, means for supporting said sets of elements for movement relative to each other, means for selectively aligning the type ele-

ments of the various sets, means extending adjacent said elements for clamping said sets in an aligned position, means spaced from said elements for supporting an article, clamping means for retaining said article to the supporting means, means for bringing the aligned elements into contact with said article, and means for adjusting the printing position of the aligned elements to conform to articles of various thicknesses, as and for the purpose described and specified.

4. In an apparatus of the character described a plurality of discs parallelly mounted for movement relative to each other, type elements carried on each disc, a member for clamping said discs together, and a border type carried by said member for outlining said elements.

5. In an apparatus of the character described a plurality of discs, a shaft to parallelly mount said discs for movement relative to each other, type elements carried on the peripheral surface of each disc, a releasable clamping member for securing said discs together with the elements aligned in a desired sequence, a border type carried by said member for outlining said elements, and means for heating said type and border disposed within said shaft.

6. In an apparatus of the character described a plurality of discs, a shaft to parallelly mount said discs for movement relative to each other, type elements carried on the peripheral surface of each disc, a releasably clamping member for securing said discs together with the elements aligned in a desired sequence, a border type carried by said member for outlining said elements, and means for manually feeding a strip over said aligned elements and border.

7. In an apparatus of the character described a plurality of discs parallelly mounted for movement relative to each other, type elements carried by each disc, means for aligning said elements, means extending adjacent said aligned elements for releasably clamping said discs together with said elements aligned in a setting position, and means for limiting the movement of said discs from said setting position into a printing position.

8. In an apparatus of the character described a plurality of discs parallelly mounted for movement relative to each other, type elements carried by each disc, means for aligning said elements, means extending adjacent said aligned elements for releasably clamping said discs together with said elements aligned in a setting position, means for limiting the movement of said discs from said setting position to a printing position, and means for manually feeding a strip of foil over the aligned elements.

9. An apparatus of the character described comprising a plurality of type elements mounted for movement relative to each other, means for selectively setting said elements in alignment while said elements are in the unobstructed view of the operator, means normally spaced from said elements adapted to support an article, means for manually moving said aligned elements from said setting position to a printing position, and means for bringing the type elements and article into contact, as and for the purpose described and specified.

10. In an apparatus of the character described including a plurality of type elements mounted for movement relative to each other, means for selectively setting said elements, movable means for gaging the setting alignment of said elements, and means for releasably locking said gaging means in unobstructed view of the operator for setting said elements.

11. In an apparatus of the character described including a plurality of type elements mounted for movement relative to each other, means for selectively setting said elements, movable means for gaging the setting alignment of said elements, means for releasably locking said gaging means in unobstructed view of the operator for setting said elements, and means for moving said gaging means and aligned type elements as a unit into a printing position.

12. In an apparatus of the character described including a plurality of type elements mounted for movement relative to each other, means for selectively setting said elements, movable means for gaging the setting alignment of said elements, means for releasably locking said gaging means in unobstructed view of the operator for setting said elements, and means for locking said unit in position for printing.

13. In an apparatus of the character described, a disc, type elements carried by the disc, means normally spaced from said disc for supporting an article, pivoted means for bringing a type element into contact with said article, and means for adjusting the printing position of the type elements to conform to articles of various thicknesses positioned on said supporting means.

14. In an apparatus of the character described, a plurality of type elements mounted for movement relative to each other, means for selectively setting said elements in alignment, means for moving the aligned type elements as a unit to a printing position, means for bringing said elements into contact with the surface of an article, and means for adjusting said elements for printing in various planes whereby articles of different thicknesses may be printed.

15. In a device of the character described, the combination of a disc, type elements carried by said disc, means for heating said type elements, a handwheel for rotating said disc

and elements, said wheel having a non-metallic rim portion and means for securing the rim to the disc.

16. In a device of the character described in combination with a heated disc carrying type elements a handwheel adapted to rotate said disc, said wheel having a non-metallic rim and spaced radially extending set screw means extending through the rim for fastening the wheel to the disc.

17. In a printing device of the character described, in combination with a head having a plurality of type movably mounted thereon, and a platen mechanism for moving type into set-up position, means for moving the set-up type bodily relative to said head into printing position and means for moving said head relative to said platen.

18. In a printing device of the character described, a plurality of type carrying elements, means for positioning said elements to bring selected type into a printing combination, and securing means for encompassing said combination of type.

19. In a printing device of the character described, a plurality of type carrying elements means for positioning said elements to bring selected type into a printing combination, and securing means for encompassing only said combination to retain said type sets in fixed position.

20. In a device for printing monograms in combination, means for setting up the characters of a monogram, and means to provide an ornamental character to said monogram, said ornamental means being mounted to encompass the characters of the monogram, and being operable to clamp the setting up means in fixed position.

21. In a printing device, a base, a printing head movably mounted on said base and having a plurality of printing means adjustable thereon, means for positioning said printing means so that the set up characters to be printed are directly in sight of the operator, and means for moving the set-up characters bodily into printing position and means for moving said head relatively to said base.

22. In a printing device, a base, a printing head movable relative to said base and having a plurality of printing means adjustable thereon, means for selectively positioning said printing means so that the set-up characters to be printed are in predetermined position directly in sight of the operator, and means for moving the aligned set-up characters relatively to said head into juxtaposition to an article to be imprinted.

23. In a printing device, a base, a printing head movable relative to said base and having a plurality of printing means adjustable thereon, means for positioning said printing means directly in sight of the operator, and means for bodily moving the positioned printing means relatively to said head into juxtaposition to an article to be imprinted.

24. In a printing device, a base, a printing head movable relative to said base and having a plurality of printing means adjustable thereon, means for selectively positioning said printing means so that the set-up characters to be printed are in predetermined position directly in sight of the operator, and means for bodily moving the set-up characters a predetermined distance relatively to said head into juxtaposition to an article to be imprinted.

25. In a printing device, a base, a printing head movable relative to said base and having a plurality of printing means adjustable thereon, means for positioning said printing means so that the set-up characters to be printed are directly in sight of the operator, means for moving the set-up characters into juxtaposition to an article to be printed, and stop means for defining the two positions.

26. In a printing device, a base, a printing head movable relative to said base and having a plurality of printing means adjustable thereon, means for positioning said printing means so that the set-up characters to be printed are directly in sight of the operater. means for bodily positioning the set-up character into juxtaposition to an article to be printed, and adjustable stop means coacting with said printing means for defining said two positions.

27. In an apparatus of the character described including a printing head having a plurality of type elements mounted thereon for movement relative to said head and relative to each other, means for selectively setting said elements, and means for moving said set elements relative to said head a predetermined amount.

28. In an apparatus of the character described including a printing head having a plurality of type elements mounted thereon for movement relative to said head and relative to each other, means for selectively setting said elements, means for locking said elements in set position, and means for moving said locked elements relative to said head a predetermined amount.

29. In a printing device of the character described, in combination with a printing head having a plurality of type elements mounted thereon, mechanism for moving said type into set up position on said head and means independent of movement of said head. for moving the set up type bodily relatively to said head to active position for printing.

In testimony whereof we affix our signatures.

MAX A. G. LUEDTKE.
HUGO HOFFMANN.