This invention relates to marking, printing, and embossing devices. More particularly the invention is directed to the provision of an improved and greatly simplified apparatus for branding, embossing, or applying plain or lustresque letters, ornamental designs, monograms, or other legends, on articles made of leather, leather substitutes, fibre, paper, textile fabrics and the like materials.

In my co-pending applications, Serial Nos. 76,595, 86,314 and 116,076 dated December 21st, 1925, February 5th, 1926 and June 15th, 1926, respectively, and filed jointly with Hugo Hoffman, there are described machines of the general nature hereinabove set forth having a plurality of type carrying discs and which may be operated in one manipulation of the lever handle to impress a complete monogram including several letters and a border enclosing the same on the material. In the present invention my purpose is in the main to provide an apparatus of this character in which a single type carrying element is employed whereby one letter at a time may be impressed on the material in comparatively rapid succession to be employed in hat stores and the like places for placing initials on the sweat bands of hats and for like purposes, and it is the further object of this invention to provide a device of this character which shall comprise comparatively few and simple parts, assembled into a very neat, compact and rugged structure, which shall be comparatively cheap to manufacture, easy to manipulate, and efficient in operation to a high degree.

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 my joint-co-pending applications aforementioned, and accordingly are not claimed herein.

With the above exception, the invention accordingly consists in the features of construction, combinations 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 drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a side elevational view of a machine embodying the invention, partly being broken away to show the construction.

Figs. 2 and 3 are cross-sectional views taken on lines 2—2 and 3—3 respectively of Fig. 1.

Figs. 4 and 5 are cross-sectional views taken on lines 4—4 and 5—5, respectively of Fig. 3.

Fig. 6 shows perspective views of border type elements for outlining the type elements so as to form monograms, the type element impressions being shown in dotted lines.

Referring in detail to the drawings, the apparatus 10 embodying the invention here shown in particularly adapted for applying identification initials, monograms, designs or the like to bags, briefcases, the sweat bands of hats, and for like purposes. Said apparatus is seen to comprise a bed or mounting base 11 carrying an upstanding guide member or stud 12 rigidly secured to the base in any suitable manner as by means of set screws 13 threaded into a boss 11a formed on the base. A portion 11b of the base 11 is extended to provide a support for a platen member 15 on which an article or material M is rested during the application of the branding, embossing or printing, as will hereinafter be described.

A frame 16 is mounted for vertical reciprocating movement on the guide member 12 and is supportingly spaced from the base by a helical spring 17 encircling said guide member 12. The spring is adapted to normally retain the frame 16 in its raised position and to automatically return said frame to its normal position after being depressed. For retaining the frame 16 against rotary movement on the guide member 12, a key screw 18 is threaded into the frame which has its leading end engaged in a groove 12a longitudinally extending along the guide member. The latter preferably extends
through the frame and has a pin 19 projecting through its upper end. Said pin forms a pivotal mounting for bifurcated portions 20a of an operating lever 20 and may be retained in place by a set screw 21 threaded into the upper end of the stud 12, as is clearly shown in Fig. 3. The edge portion 20b of each of said lever portions 20a serves as a cam to cooperate with the upper surface 16c of the frame 16, whereby when the lever 20 is swung counter-clockwise as seen in Fig. 1, the frame 16 is depressed against action of the spring 17. Suitable means such as a stop lug 22 may be provided to extend between the bifurcated lever portions 20a to contact with the guide member 12 for limiting the upswing of the lever.

The frame 16 may be constructed with a pair of spaced bracket arms 16b and 16c between which extend a hollow shaft 23 fixedly secured in position in any suitable manner as by means of a set screw 24 threaded into the outer arm 16b. Mounted for rotation on the fixed shaft 23 is another shaft 25 which extends through the inner arm 16c and has an overhanging portion on which is a toothed wheel 26 fixedly mounted. A collar 27 is firmly secured to the shaft 25 to abut the inner arm 16c on the opposite side to the wheel 26 for retaining the shaft 25 against lateral shifting.

Concentrically secured against the wheel 26 by any suitable means, such as spaced screws 28, is a disc 29 on the peripheral surface of which is uniformly spaced dies or type elements 30. Said elements may comprise the letters of the alphabet, numerals or other indicia on which may be formed a wide varied range of desirable combinations of initials, designs, monograms, or legends to be applied to the material or article M. The teeth 30a on the wheel 26 correspond in number to the type elements 30. A detent spring 26b has one end thereof anchored on a radial arm 14a of a brace member 14, the free end of said spring being adapted to engage with the teeth 30a, whereby the disc 29 is releasably set for selectively retaining one of the type elements 30 in printing position over the platen member 15. The brace member 14 may be rigidly secured to the inner bracket arm 16c by any suitable means, as for example by screws 14b.

When the device 10 is used by applying initials or monograms the type elements 30 carried on the peripheral surface of the disc 29 may include twenty-six letters of the alphabet. To simplify the construction and decrease the cost of manufacture, said elements 30 are preferably made independent of the disc 29 and may each be fixedly secured in position on the periphery thereof by suitable means such as a dove-tailed connection 33, (see Fig. 1). When setting the type elements 30 for printing, as will hereinafter more fully appear, the disc 29 and the wheel 36 are rotated with the shaft 35 by turning a knob 31 which preferably is made of a heat insulating material such as wood, fibre, bakelite or the like, and is fixed to the disc in coaxial relation by a bolt 32 or other suitable means. The article or material M to be marked is mounted on the platen member 15 and fingers 34 positioned at each side thereof are provided for retaining said articles and material on the member 15. Said fingers are of resilient construction and preferably extend below the level of the surface of the platen so as not to interfere with the printing operation. Said fingers are secured in any suitable manner as by means of screws 35 to an upstanding ledge portion 15a provided on the member 15. A sweatband of a hat or other article can thus be rested on the platen member 15 and held thereon by said fingers during the marking operation. From the description given thus far of the apparatus 10, it will be noted that the same includes but a single disc and one set of type elements. In order that a plurality of letters or insignia may be imprinted in alignment along side each other on the article M, means is provided for moving the platen member 15 a predetermined distance relative to the disc 29 and type elements 30 carried thereon so that the latter may be impressed in uniform alignment on the article M. In the construction here shown, the platen member 15 having the fingers 34 which carry the article M is slidably movable on the base plate and is actuated by a lever 36 pivotally mounted on a boss 11c on the base 11 by a shouldered screw 37, said lever having an offset handle 36a. The end 36b of the lever opposite the handle 36a is formed with a slot 36c into which extends a screw 38 the latter being threaded into the underside of a cross-head portion 15b projecting from the platen member ledge 15a. The cross-head rides on a guide bar 39 which may be secured by means of screws 40 on spaced supporting lugs 11d projecting up from the base. Each of said lugs 11d carries stop screws 64 for adjustibly limiting the movement of the cross-head on the guide bar between said lugs, as is clearly shown in Fig. 4. A plurality of equally spaced notches 30c is provided on the bar 39 to correspond to the desired uniform spacing of the impressions of the type elements to be marked on the article M. Said notches are adapted to releasably engage with a spring detent 41 carried by the cross-head portion 15d and serves to retain the platen member 15 in adjusted position.

Where ordinary or plain printing is to be done by the apparatus 10, a suitable form of ink applying device (not shown) may be used to ink the type elements in any well known manner understood in the art. Such device preferably is installed in contact with
the type elements so that they are inked as the disc is revolved during the setting operation of the type elements.

So that the apparatus 10 may be used for branding, embossing or applying lustrous letters, a suitable heating means for the type elements is provided. The heating element may be formed in the disc 29 and constructed as disclosed in the aforementioned co-pending application, Serial No. 75,395. In the form here shown, said heating means comprises an electric heater unit 42 of any suitable construction preferably forming a core which is fitted to extend through the hollow shaft 28 as shown in Figs. 2 and 3, said unit being fixedly retained in position by a set screw 43 threaded into said shaft 23.

Portable conductor wires 44 connect with the heater unit 42, said wires being provided with a detachable fitting in the well understood manner, adapted to connect with a suitable electric power source (not shown).

The disc 39 and type elements are preferably made of copper, bronze, brass, aluminum, or other material having relatively high heat conductivity so that they may be readily heated to the required working temperature by the unit 42.

In branding or plain embossing the article 30 or material M, the unit is first connected to an electric power source for heating the type elements after which they are selectively set and successively forced against the article or material by applying pressure to the handle 29a, as will hereinafter be described.

By interposing a metallic foil or leaf of gold, silver, aluminum or other metal or composition between the heated type elements and the article or material M, lustrous letters may be stamped or printed on the latter. For automatically feeding such foil in proper operating sequence a strip feeding mechanism F may be incorporated in the apparatus 10. In the form shown in the drawings, said mechanism F comprises a spool 45 rewound mounted on a shaft 46 and a pair of friction rollers 47 and 48 mounted on shafts 49 and 50, respectively, the shafts 49 and 50 being supported on the radial arm 14c of the bracing member and the shaft 46 on another radial arm 14c of said bracing member 14, said shafts being suitably journelled and supported to move with the frame 16 as shown in Figs. 1, 2 and 3.

A supply of strip material 51 is carried on the spool 45, said spool being provided with a frictional drag 52 of any well understood construction to prevent unwinding of the foil. Said strip material has one side thereof coated with a metallic foil (not shown) from which the lustrous letters are formed, and is fed with the coated face down between the type elements 30 and the platen member 15.

Any suitable strip material of metallic foil, such as is in commercial use may be employed.

Spaced guides 54 are supported by said bracing member 14 to extend between said rollers preferably so as to extend below the normal level of the type elements for guiding the strip material 51 and holding it out of contact when the frame 16 is in raised position, as shown in Fig. 1. For driving the friction rollers 47 and 48, there are provided a ratchet wheel 53 fixedly mounted to the end 49a of the shaft 49 and a pawl 54 therefor supported on a pinion 55 which is freely mounted on said shaft end 49a. The teeth 55a of the pinion engage with a vertically extending rack 56 which is fixedly supported by a brace 57 from the base 11 as will be seen from Figs. 1 and 2. The feeding mechanism F will be effective to advance the strip 51 only on the return motion of the frame 16 to its raised position when the pawl 54 and the ratchet 53 will interlock the wheel to the shaft 49. On the downward travel of the frame the pawl will ride over the teeth of the ratchet and the shaft 49 will not be rotated, as will be readily understood. The roller 48 is frictionally held against the roller 49 by any suitable means, as for example by a spring 58 having an adjustable screw 59 which engages the shaft 50 urging the rollers 47 and 48 in contact. The leading or spent end of the strip material passes between said rollers and automatically is fed between the type elements and the article M on the upward movement of the disc after each impression of the type elements. For enclosing the disc 29 a suitable casing 60 made of bakelite or other heat insulating material is supported by the radial arms of the bracing member 14, said casing preferably extending to cover the disc and type elements. As a convenient means for selectively setting the type elements in printing position, suitable indicating means is provided, said means preferably being in the form of letters or other symbols 61 carried on the side 29a of the disc to correspond with the type elements 30 in such a manner that when a letter such as K is visible through an opening 60a provided in the casing 60, the disc is positioned to mark or emboss the type letter K on the article.

In using the invention, the portable conductor wires 44 are connected to an electric power source to heat the type elements on the disc. By manipulating the knob 31 the disc 29 is set so that a desired letter or symbol appears at the casing opening 60a. A brief case, sweat-band, or other article M is positioned on the platen member 15 and retained in position by the fingers 34, and the handle lever 20 depressed thus causing the frame 16 to descend and forcing the heated type element against the strip material to press the foil or coated side thereof against the ma.
aterial M. The heat from the type element caused the foil to adhere to the material in outline to correspond to the shape and design of the type or other character of the type element.

To provide a border design for the type elements when forming an initial or the like, border type elements 62 and 63 may be provided for outlining two or three type elements respectively. Said border elements are secured to the disc 29 by dovetail connections in the same manner as the type elements 30. Said border type elements are properly aligned on the disc 29 with respect to the other type elements so that when the platen member and the article are properly set, the elements 62 and 63 will imprint a border surrounding two or three type element impressions, respectively.

The lever 20 is then released and the spring 17 returns in the direction 16 to its normally raised position. Simultaneously, the strip material 51 is caused to be fed so as to present an unused portion thereof at the next impression of the type elements. By means of the lever 36, the platen member 15 and the article M mounted thereon is shifted the distance of one notch on the guide bar 39 and the disc 29 rotated until the next desired letter appears at the casing opening 60b. The lever 20 is again depressed and the above described cycle of operation is repeated to form the desired combinations of letters which are imprinted in uniform spaced alignment on the article M. The proper border type elements may be brought into printing position and imprinted to outline the letters, the border type element 62 being designed to outline two letter initials, and the element 63 three-letter initials. (See Fig. 6).

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 drawings is to be interpreted as illustrative and not in a limiting sense.

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

1. A marking apparatus of the character described comprising a rotatable disc, spaced type elements mounted on the disc, electrical means for heating the type elements, means for supporting an article to be marked in spaced relation to said type elements, a foil strip extending between said supporting means and type elements and out of contact with the type elements and supporting means, means for moving the disc and the foil strip against the article, a lever having an arm engaging said article support, adapted to shift said support.

2. A marking apparatus of the character described comprising a rotatable disc, spaced type elements mounted on the disc, means for heating the type elements, means for supporting an article to be marked in spaced relation to said type elements, a foil strip mounted to feed between said supporting means and type elements, means for causing a type element to contact said foil strip against the article, and means for shifting the article support relative to the disc to a plurality of predetermined positions.

3. A marking apparatus of the character described comprising a rotatable disc, spaced type elements mounted on the periphery of the disc, means for supporting an article to be marked, means for heating the type elements, means for selectively positioning one of the type elements for marking said article, a foil strip extending between said type element and supporting means, means for pressing said type element against the foil strip and the article, means actuated by said pressing means for feeding the foil strip relative to the type element, and means for shifting said supporting means relative to the type element.

4. An apparatus of the character described comprising a plurality of single type elements including a border type element for outlining one or more of said elements, a unitary means for carrying said elements and member, means to support an article in spaced relation to said elements, and means to selectively bring one of said type elements and the article together.

5. An apparatus of the character described comprising a plurality of type elements including a border type element for outlining one or more of said elements, a unitary means for carrying said elements, means to support an article in spaced relation to said elements, means to feed a foil strip between the type elements and the article, means to heat the type elements, and means to bring the elements, the foil strip and the article together.

6. An apparatus of the character described comprising a plurality of type elements, a disc for supporting said elements on the peripheral surface thereof, heating means for the type elements a casing enclosing said disc, means to support an article to be marked in spaced relation to said elements, means to feed a coil strip between said article and said elements, means to selectively bring one of the type elements and the article together and guiding means for said strip integral with said casing.

7. An embossing machine comprising a single annular disc, a plurality of type elements fixed to the periphery of said disc, means to support an article to be embossed
in spaced relation to the periphery of said disc, electrical means for heating said disc, means for feeding a foil strip between said disc and the article supporting means, means to rotatably support said disc for selectively bringing one of the type elements adjacent said article supporting means, means for causing relative lateral movement between said disc and said article supporting means to cause said type element to press a portion of said strip against said article for embossing the same, and means controlled by last named means for automatically actuating said feeding means, said actuating means being operable simultaneously with said relative lateral movement between said disc and said article supporting means.

8. An apparatus of the character described comprising a single rotatably mounted disc, a plurality of type elements carried on said disc, means to support an article to be marked in spaced relation to said elements, means to feed an elongated foil strip between the article and the type elements, means to heat the type elements, means to rotate the disc to selectively bring a desired type element into marking position, pressure means for causing sliding movement of said disc for bringing one of the heated type elements, the foil strip and the article together, means to move the article supporting means relative to the disc, and means operative upon movement of the disc mounting for automatically advancing the strip.

In testimony whereof I affix my signature.
MAX A. G. LUEDTKE.