

J. E. BURGHOFF & J. B. WILKS.
EMBOSSING AND CUTTING DEVICE.
APPLICATION FILED DEC. 14, 1910.

1,055,872.

Patented Mar. 11, 1913.

2 SHEETS-SHEET 1.

Fig. 1.

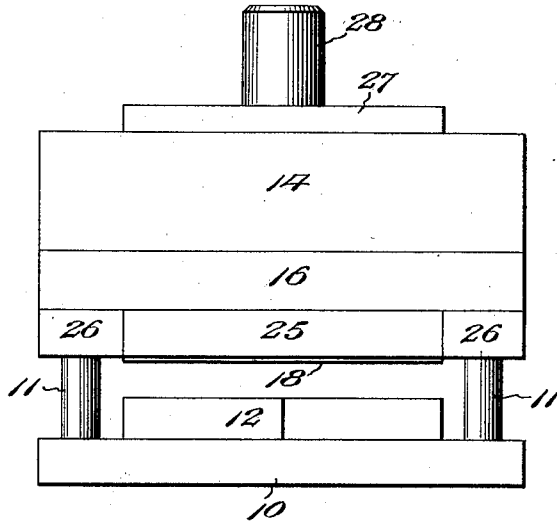


Fig. 2.

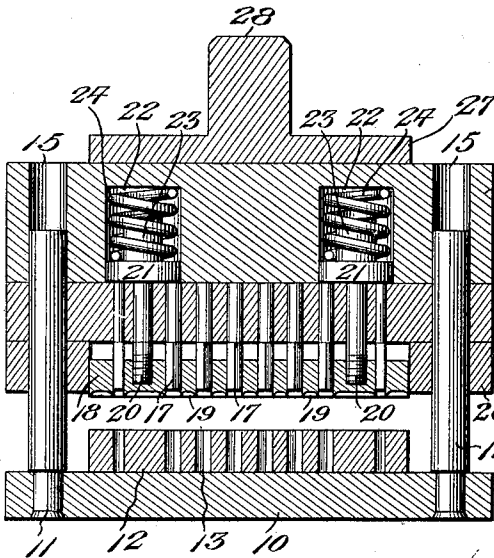
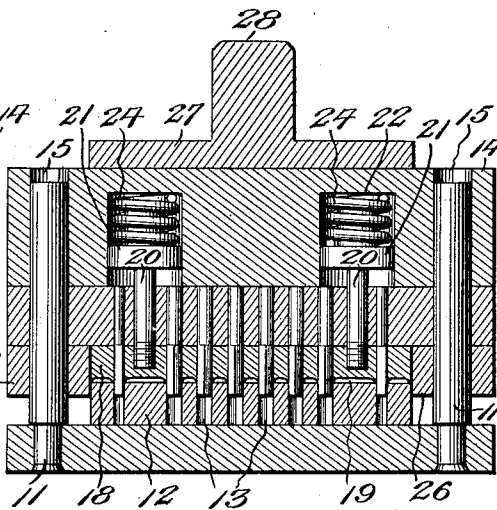


Fig. 3.



Witnesses

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Fig. 4.

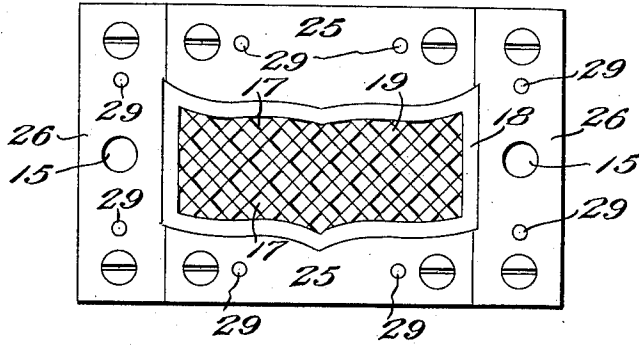


Fig. 5.

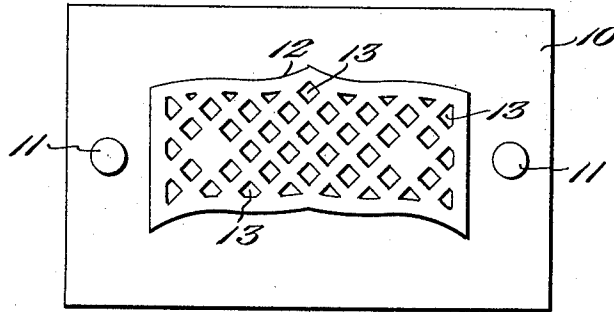
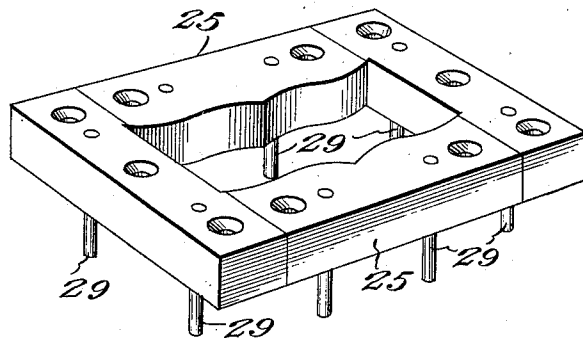


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN E. BURGHOFF AND JOHN B. WILKS, OF LEOMINSTER, MASSACHUSETTS.

EMBOSSING AND CUTTING DEVICE.

1,055,872.

Specification of Letters Patent.

Patented Mar. 11, 1913.

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To all whom it may concern:

Be it known that we, JOHN E. BURGHOFF and JOHN B. WILKS, citizens of the United States, residing at Leominster, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Embossing and Cutting Devices, of which the following is a specification.

The invention relates to an embossing and die cutting device, and more especially to the class of devices for embossing and cutting barrettes, comb-backs or the like.

The primary object of the invention is the provision of a device of this character in which a sheet of celluloid, rubber or other suitable material may be embossed and cut into the required shape for forming a comb back or barrette, the sheet of material being simultaneously perforated for giving lattice-like ornamentality thereto.

Another object of the invention is the provision of a device of this character in which there are arranged coöperative punches and a die, the punches being adapted to interfit the die for the purpose of perforating a strip of material embossing it and cutting the same into the required shape for producing a comb back or barrette in a single operation.

A still further object of the invention is the provision of a device of this character in which the punches are fixedly supported upon a punch carrying plate, while the embossing die is yieldably supported, whereby the said die may recede for the projecting of the punches to perform the cutting operation upon a piece of material operated upon by the punches and die of the device.

A still further object of the invention is the provision of a device of this character which is simple of construction, thoroughly reliable and efficient in operation and inexpensive in manufacture.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the hereunto appended claim.

In the drawings:—Figure 1 is a front elevation of a device constructed in accordance with the invention. Fig. 2 is a vertical longitudinal sectional view therethrough. Fig. 3 is a similar view showing the punches penetrating a piece of material for forming a barrette. Fig. 4 is a plan view of the

punch plate and the embossing die connected therewith. Fig. 5 is a plan view of the base plate showing the work support or cutting plate thereon. Fig. 6 is a perspective view of the sectional frame plate removed from the punch plate.

Similar reference characters are employed to designate corresponding parts throughout the several views of the drawings.

Referring to the drawings by numerals, the device comprises a base plate 10 which may be of any desirable shape, preferably rectangular and has fixed thereto and rising from the same at opposed points vertical guide stems with which slidably engage a punch carrying block, as will be hereinafter more fully described.

Located upon and detachable from the base plate 10 is a cutting plate 12, the same being shaped correspondingly to an article to be cut from a piece of material, such as celluloid, rubber or other suitable material to be operated upon by the device for the formation of a comb-back or barrette. This cutting plate 12 is provided with a series of spaced diagonal rows of punch receiving openings 13 into which pass punches fixed to the punch carrying block, as will be hereinafter more fully described.

The punch carrying block comprises a body 14 preferably rectangular in shape and provided with openings 15 receiving the guide stems 11 so that the said body may be moved and guided toward and away from the base plate in the operation of the device. Detachably secured to one face of the body 14 is a punch plate 16 into which latter are detachably fitted rigid punches 17, the same being disposed in alinement with the punch openings 13 in the cutting plate so as to engage therein on the approach of the punch carrying block toward the base plate.

Mounted upon the punch plate 16 is a yieldable embossing die 18, the same being provided with complementary series of openings with respect to the punches 17 into which the latter fits, the working face of the die 18 being channeled, as at 19, for embossing of the material acted upon thereby. This die 18 is connected with follower pins 20 each being provided with a head 21 mounted for sliding movement within a counterbore 22 formed in the body 14. Formed on the heads 21 of the follower pins 20 are centering lugs 23 for engagement with expansion springs 24 connected within

the counterbore 22, the spring working against the closed ends of the counterbores in the said body 14 of the punch carrying block, and these springs normally hold the die 18 in position, whereby its embossing face having the channels 19 will be flush with the free cutting ends of the punches 17, but will permit of the receding of the die 18 for projection of the punches therethrough. On the movement of the punch carrying plate toward the base plate this die 18 is shaped reciprocally to the cutting plate 12 for a purpose as will be hereinafter more fully described.

Surrounding the die 18 is a shaping or frame plate comprising side and end sections 25 and 26, respectively, the same being detachably secured to the punch plate 16 and having their inner edges made similarly to the edges of the die 18, thereby presenting an opening correspondingly shaped to the said die and the said cutting plate 12 so that when the die recedes within the opening in the frame or shaping plate on the approach of the punch carrying block toward the base plate, the said cutting plate 12 will enter the said opening in the frame or shaping plate, thereby cutting the material acted upon by the die and punches into the required shape for forming a comb-back or barrette. The die 18 has its outer embossing face normally flush with the outer face of the frame or shaping plate, the said die being held in such position by means of the springs 24, which latter operate upon the heads 21 of the follower pins 20 so as to sustain the said heads in contact with the inner face of the punch plate 16 carried by the punch carrying block.

Suitably secured to the punch carrying block is a facing plate 27 the same being formed with a central stem or shank 28 adapted to be connected with the plunger of a stamping machine (not shown). Engaged with the sections 25 and 26 of the frame or shaping plate and also with the punch plate 16 are dowel pins 29 which latter prevent displacement of the sections of the said shaping plate.

In the operation of the device a piece of material to be acted upon thereby for the formation of a comb-back or barrette is introduced onto the cutting plate 12 whereupon the punch carrying block is moved toward the base plate 10, the said block being guided by the guide stems 11 rising from the base plate. When the punch carrying block approaches the base plate the die 18 is brought into contact with the piece

of material, and on the further approach of the said punch carrying block the said die is receded within the opening in the shaping plate and simultaneously therewith the cutting plate enters the said opening in the shaping plate, thus cutting the piece of material into a shape correspondingly with respect to the said cutting plate and die. On the receding of the embossing die 18 the punches will be caused to protrude through the openings in the said embossing die 18 and the punch openings 13 in the cutting plate 12, thereby perforating the piece of material for effecting a lattice like ornamentality thereto simultaneously with the embossing of the said piece of material by the die 18. When the punch carrying block retreats from the base plate 10 the die 18 is automatically moved to normal position whereby its embossing face will be flush with the outer face of the shaping plate, thus ejecting the finished article, either a comb-back or a barrette from the opening in the shaping plate.

It will be evident that the finished article when delivered from the device will be free from thorned or irregular surfaces thereby rendering it neat and with a smooth finish and ornamental appearance.

From the foregoing it is thought that the construction and mode of operation of the invention is clearly understood, and therefore a more extended explanation of the device is omitted.

Having thus described the invention what is claimed as new is:—

A device of the class described comprising a base plate, guide stems rising therefrom, a punch carrying block slidably connected with the guide stems, a punch supporting plate detachably connected with the block, a cutting frame carried by the punch supporting plate, punches fixed to the said punch supporting plate, a yieldable die fitted within the cutting plate and connected with the block, said die being provided with openings correspondingly shaped to the punches, and means on the base plate for receiving the punches and effecting the receding of the yieldable die fitted within the cutting frame.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN E. BURGHOFF.
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Witnesses:

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