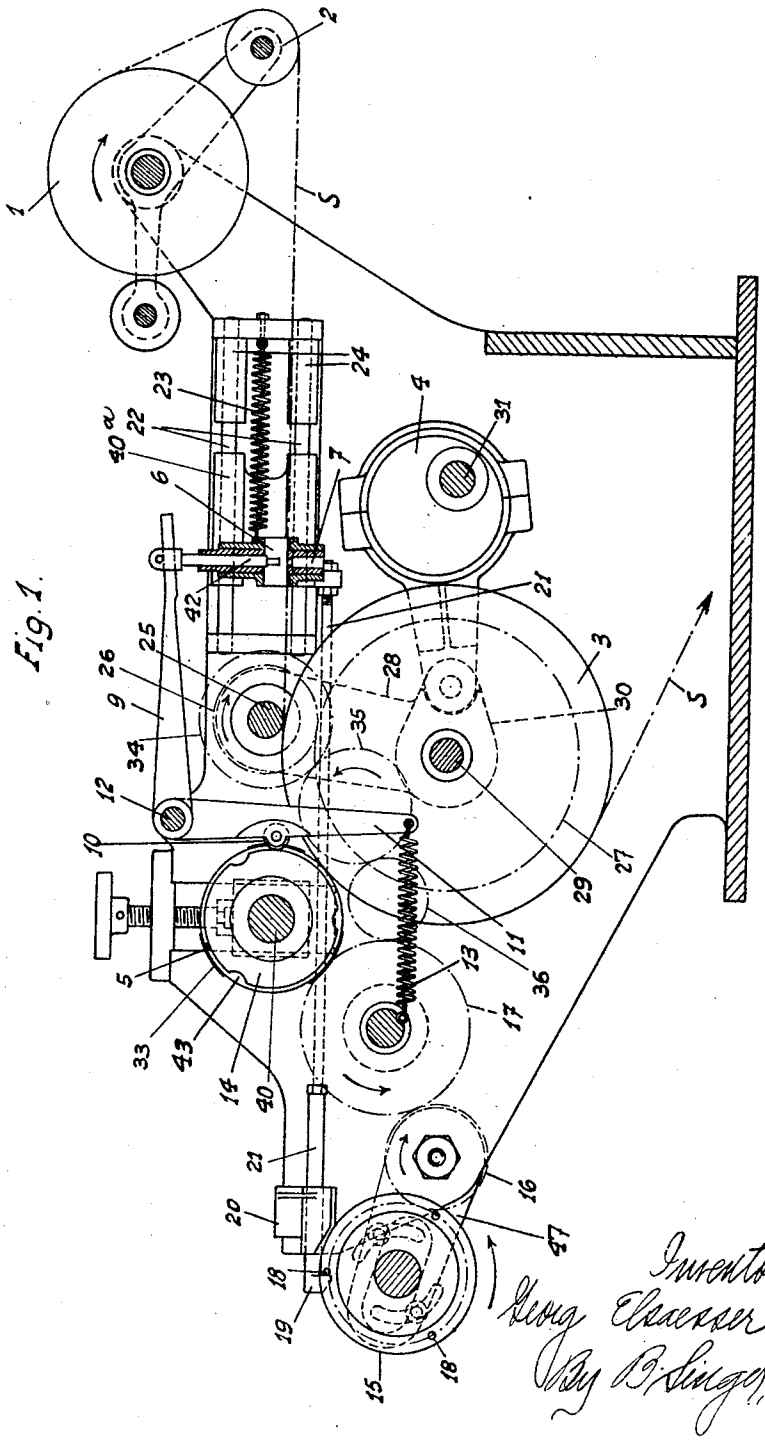
April 21, 1931. G. ELSAESSER 1,801,337

DEVICE TO CUT HOLES IN STRIPS OR WEBS OF TIN FOIL OR THE LIKE

Filed Feb. 15, 1929 2 Sheets-Sheet 1

Fig. 1.



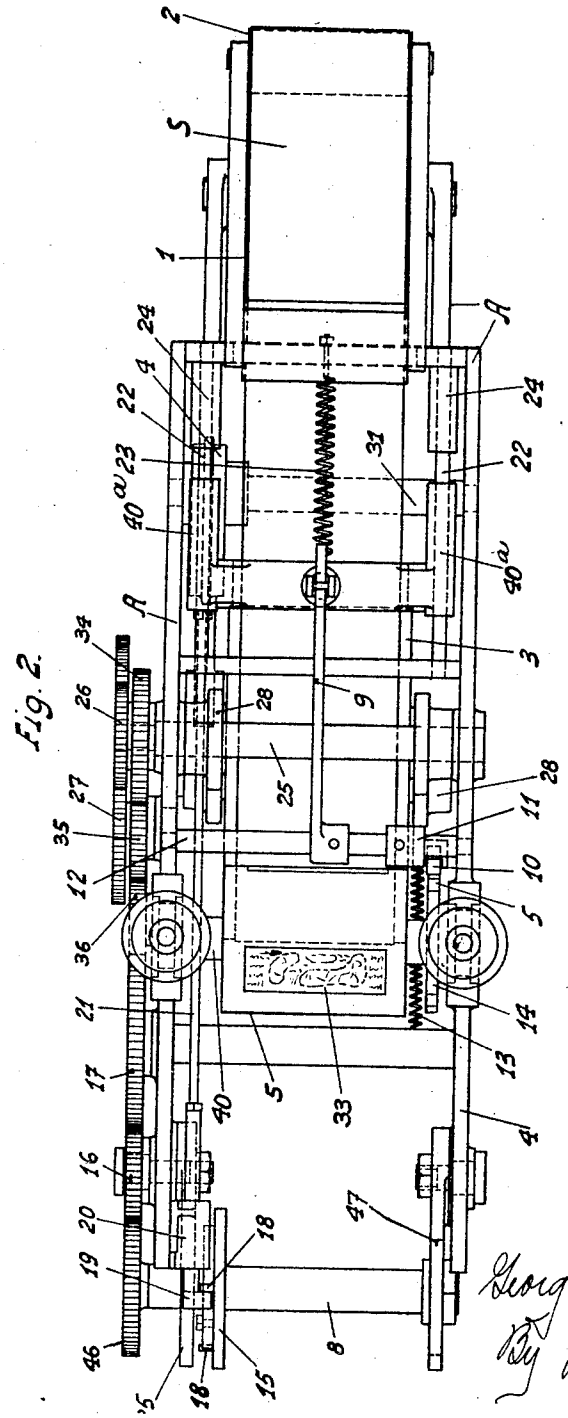
Inventor
Georg Elsaesser
By B. Singer, Atty.

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Fig. 2.



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Patented Apr. 21, 1931 1,801,337

UNITED STATES PATENT OFFICE

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DEVICE TO CUT HOLES IN STRIPS OR WEBS OF TIN FOIL OR THE LIKE

Application filed February 15, 1929, Serial No. 340,167, and in Switzerland February 20, 1928.

The present invention relates to improvements in devices to cut holes in strips or webs of tin foil, or the like at equal distances apart, such webs being used for wrapping chocolate and other goods by means of wrapping machines.

The principal object of this invention is to provide a device for cutting the holes in the webs of tin foil or other material at equal distances apart while the web is being fed.

A further object of my invention consists in the provision of a device which not only makes the holes at equal distances apart in a strip or web of tin foil, paper or other material while it is being fed by some known feeding device, but placing thereon, at equal distances apart, printed matter, embossed matter or the like in correct register relatively to the holes.

A still further object of this invention is to provide a simple and efficient apparatus whereby the strip, or web, is fed with great accuracy, so that any designs or other matter, which may be printed thereon or otherwise applied thereto, will be successively brought into proper position relatively to the printing device which is to operate upon the strip or web.

A web of tin foil with designs, or letterpress printed at equal distances upon it and having perforations at intervals therein in accordance with the length of labels, wrappers or the like may be cut by the aid of said perforations and other well known cutting devices in exact and predetermined position relatively to the said printing.

In the accompanying drawings the preferred manner in which this invention may be performed is shown in a diagrammatical manner.

Fig. 1 is a sectional elevation of the essential parts of an apparatus constructed in accordance with the invention.

Fig. 2 is a plan thereof.

In a frame A a main driving spindle 25 is mounted in suitable bearings, the said shaft having, secured to it a toothed gear 26. The said gear is in mesh with a gear 27 rotatably mounted on a stud 29 of an arm 28 which is loosely mounted on the shaft 25. A link 30 is loosely connected to said arm 28 which is linked to the strap of an eccentric 4, the sheave of which is secured to a shaft 31 running in bearings of the frame A. The shaft 31 is driven by suitable gearing from the shaft 25. A roller 3 covered at its circumference with india-rubber is rigidly connected to the toothed gear 27. The roller 3 draws the web S of tin foil from a spool 1 or the like rotatably mounted in the frame A. The web S runs over a guide roller 2 to the feeding roller 3 and runs off in the direction shown by arrow. The web S while running over roller 3 is pressed against a roller 5 at regular intervals of time, depending on the number of turns of the eccentric 4. On the roller 5 secured to shaft 40 three printing plates 33 are removably arranged.

Shaft 40 is journalled in the frame A and driven by the main shaft 25 by means of toothed gears 34, 35, 36 and 17. While the roller 5 makes one full turn the roller 3 is three times oscillated by the eccentric and three impressions are made on the web S. Between the roller 3 and the guide roller 2 a perforating device is arranged by means of which holes are cut in the web S while it runs. The perforating device comprises a slide 40^a which slides on bars 22 fixed to the frame A, running parallel to the web S. In the slide 40^a a die 7 is removably fixed, the web S passes over the upper face thereof through an opening 6. In a vertical bore of the slide a plunger 42 is slidably arranged which punches holes in the web S. The plunger 42 is actuated by a lever 9 secured to a spindle 12 rotatably mounted in the frame A. To said spindle 12 an arm 11 is rigidly fixed on which a roller 10 is mounted. The roller 10 runs on a disk 14 fixed to shaft 40 and having notches 43 at its rim into which the roller 10 passes on rotation of shaft 40. The roller 10 is held in engagement with said disk by means of a coiled spring 13, one end of which is connected to lever 11 and the other end to the frame A. The disk 14 rocks the arm 11 and therewith lever 9 and the plunger 42 is moved up and down punching holes in the web S. While a hole is being punched the slide 40^a is moved in the

same direction of the web S and with the same speed. The slide 40ª is connected to the frame A by a spring 23 and be means of a rod 21 to a member 19, slidably mounted in a sleeve 20 of the frame A. The member 19 is provided with a downwardly projecting nose which projects in the path of studs 18 fixed to a disk 15. The said disk is adjustably mounted on a shaft bearing a toothed gear 46, said shaft being rotatably mounted on a member 47. The gear 46 is in mesh with the gear 16 which transmits motion from the gear 17. The member 47 is adjustably fixed in the frame A. The disk 15 when rotated draws the rod 21 and therewith the slide 40ª against the action of the spring 23 by the pin 18 striking against the nose of member 19. By proper adjustment and correct dimensions it may be attained that the slide 40ª is moved with the same linear speed as the web as long as the plunger 42 is in contact with the web S. As soon as the plunger 42 has left the web S the pin 18 passes off the nose of member 20 and the contracting spring 23 withdraws the slide 40. Pieces 24 of rubber or similar material are arranged on the bars 22 to form a resilient abutment of the slide.

The roller 5 may be provided with more than three printing blocks or the like, the number of notches 43, and of studs 18 has to agree with the said number of printing plates.

I wish it clearly understood that I do not limit my invention to the particular form of construction shown and described but what I wish to secure by U. S. Letters Patent, is:—

1. In combination with printing mechanism, including a web feed roller, and means to impart oscillating motion to said roller, a punch carrying element mounted for reciprocating motion, means to actuate said element and means to actuate the punch carried by said element.

2. Apparatus as claimed in claim 1, in which the printing mechanism includes a revoluble cylinder provided with a cam disc and the means for operating the punch is a member mounted for rocking movement, having a tappet for coaction with said cam disc and also having an arm to actuate the punch and to which the punch is connected for sliding movement longitudinally of said arm.

3. Apparatus as claimed in claim 1, including a rocking element in which the feed roller is revolubly mounted, an eccentric and an eccentric strap and arm connected to said oscillatory element.

4. Apparatus as claimed in claim 1, in which the means for actuating the punch carrying element is a disc mounted for rotation and having tappet pins and a rod connected to said punch carrying element and having a nose extending into the path of movement of said pins, so that said punch carrying element is moved in one direction and a spring to move said element in the reverse direction.

In testimony whereof I affix my signature.

GEORG ELSAESSER.