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KEYBOARD EMBOSSING MACHINE

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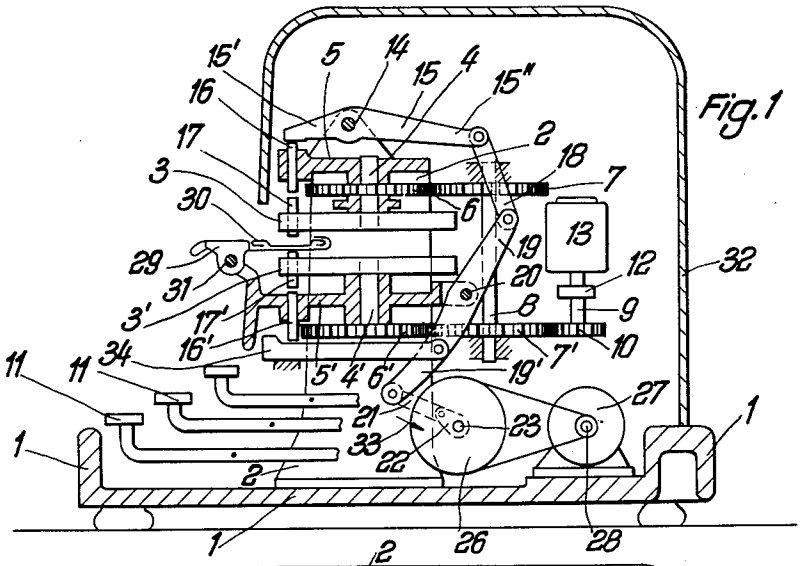


Fig. 1

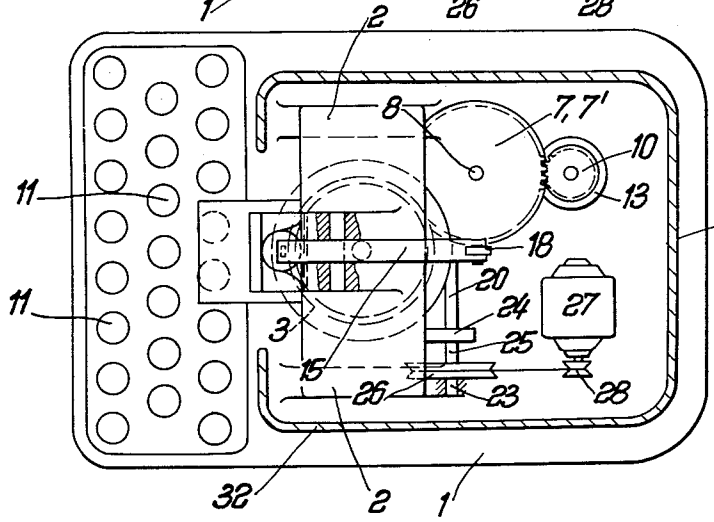


Fig. 2

Inventors
G. Güttel
H. Schulz
H. Ditzel
By Glascock Downing & Seebold
Attys.

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KEYBOARD EMBOSSING MACHINE

Gerhard Güttel, Berlin, Heinrich Schulz, Berlin-Steglitz, and Heinrich Ditzel, Berlin-Niederschonhausen, Germany, assignors to Adrema-Werke G.m.b.H., Berlin, Germany

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The invention relates to an embossing machine, more particularly a keyboard embossing machine with electric drive and disc-shaped type carriers for embossing address-printing plates and the like letter plates. In the known machines of this kind, the rotatable type carriers including the holder for the address-printing plate are mounted above a base plate, while the driving elements, such as motor, clutch and operating rods are mounted below the base plate, being suspended from or secured to a table frame carrying said base plate. Such machines require large space dimensions and have the drawback of considerable weight. It is the object of the invention to provide a readily transportable table embossing machine. An essential feature of the invention is that both the driving motors for actuating the type carries and for carrying out the embossing operation, as well as the type adjuster and the shift clutches for the type carrier motion and the embossing operation, including the associated transmission elements, are mounted above a machine base plate. An embossing machine according to the invention occupies little space, has low weight and consequently can be transported as conveniently as a large typewriter.

The use of two motors of small dimensions, instead of the heretofore usual single driving motor, simplifies the construction of the machine, so that there is even sufficient space to accommodate a keyboard, known per se, with its extensive lever system. Instead of the keyboard, the known handwheel adjustment for the selection of the types may, of course, be provided, in which case advantageously the rotary movement of the type carriers is effected by means of a separate electric motor.

According to a preferred embodiment, all the driving and machine elements, with the exception of the type adjuster and the address-printing plate holder, are covered by a casing hood. This casing hood not only protects the mechanism from dust, but also prevents spattering of oil or grease while the machine is running.

The invention is illustrated by way of example in the drawing with reference to a keyboard embossing machine with electric drive. In this drawing:

FIG. 1 shows a side view of the machine, partly in section and

FIG. 2 shows a plan of the machine according to FIG. 1, with the casing hood cut open.

The drawing shows only those machine parts which are necessary for the explanation of the invention. Known devices are merely indicated or are omitted.

Built on a base plate or base frame **1** is a yoke **2**, between the side walls of which disc-shaped type carriers **3** and **3'** are keyed to vertical shafts **4** and **4'**, journalled in cross-members **5** and **5'** of the yoke **2**. Mounted on each of the shafts **4** and **4'** is a gearwheel **6** and **6'**. These gearwheels **6** and **6'** in their turn mesh with gearwheels **7** and **7'** mounted on a common shaft **8**. The gearwheel **7'** meshes with a driving wheel **10** keyed to a motor shaft **9**. By means of a clutch **12** adapted to be operated by keys **11**, the shaft **9** can be connected to a driving motor **13** actuating the type carriers and which may be secured to the yoke **2**.

Furthermore, journalled on the upper end of the yoke **2** is a spindle **14** carrying a double lever **15**. This lever **15** rests by one arm **15'** on a push-rod **16**, adapted to slide up and down in a guide in the cross-member **5**. The

push rod **16** abuts with its lower end against a type **17** in the upper type carrier **3**. Pivoted to the end of the other arm **15''** of the double lever **15** is a link **18**, which is connected to another double lever **19** pivoted on a pin **20** mounted on the cross-member **5'**. The lower arm **19'** of the double lever **19** is connected by a pull rod **21** to a crank **22** mounted on a shaft **23** journalled in the yoke **2**. The shaft **23** is connected to a driving shaft **25**, carrying a belt pulley **26**, by means of a disengageable coupling **24**, constructed as a single-revolution clutch. From the belt pulley **26** on the shaft **25** a driving belt passes to a driving pulley **28** of a motor **27** which is mounted on the base plate **1** and initiates the embossing operation.

Mounted on the cross-member **5'** at the front of the machine is a holder **29** for the address-printing plate **30**, guide rods **31** being provided for the displacement of the holder.

Below this holder is provided a keyboard, known per se, by means of which the couplings **12** and **24** can be operated by known transmission means, not shown. Connected to the lower arm **19'** of the double lever **19** is a ramp pull-rod **34** adapted to raise and lower the lower push rod **16'** guided in the cross-member **5'**.

With the exception of the keyboard and the holder **29** for the address plate **30**, the entire mechanism of the embossing machine is covered by a casing hood **32**, placed on the base plate **1**. If the machine is to be started, an address plate **30** is first clamped in the holder **29**, and then the necessary key of the keyboard **11** for the character to be embossed is depressed. This key then engages the clutch **12** (FIG. 1) and the motor **13** now rotates, by means of the gearwheels **10**, **7'**, **6'** and be means of the shaft **8**, the gearwheels **7** and **6** in synchronism and hence also the type carriers **3** and **3'** until the desired embossing types **17** and **17'** have arrived at the embossing position of the address plate, as determined by the push rods **16** and **16'**. The clutch is then disengaged again, and the one-revolution clutch **24** (FIG. 2) is engaged by a rod gear or electric transmission, not shown. The shaft **23** is thereby rotated once by the motor **27** via the belt drive **28**, **26**, the result of which is that the crank **22** during the revolution moves the pull rod **21** in the direction of the arrow **33** (FIG. 1) and hence rocks the double lever **19** until its upper arm comes into the extended position with the link **18**. The double lever **15** is thereby likewise rocked, so that the end of its left arm **15'** strikes the push-rod **16**, thereby depressing the upper type **17**. At the same time, the ramp pull-rod **34** pushes the push-rod **16'** upwardly and hence also presses the type **17'** from below against the address plate **30**. Embossing of a character is in the address-printing plate is thus effected. Thereupon, the parts **17**, **17'**, **16**, **16'**, **15**, **18**, **19**, **22** and **34**, after completion of one revolution of the crank **22**, then return to their starting positions.

The present embodiment also includes type carriers with horizontal axes.

We claim:

1. In a machine for embossing printing plates, in combination, a machine base plate, a keyboard carried on said base plate, a framework secured to said base plate, two rotatable die carrier disks mounted on said framework in concentric alinement and capable of being turned in a horizontal plane, a printing plate carrier slidably arranged on said framework between said carrier disks, first means adapted to rotate said carrier disks in synchronism to bring dies to an embossing position in accordance with a depressed key of the keyboard, second means to force the opposing dies of the carrier disks at said position in opposite directions against said printing plate, a first electric motor for driving said first means and a second electric motor for driving the second means.

2. A machine for embossing printing plates according

to claim 1 in which said keyboard, said framework, said first means, said second means, said first motor and said second motor are all arranged on the same side of, and above, said base plate.

3. A machine for embossing printing plates according to claim 1 in which said second means consists of a crank rotated by the second motor, a first lever pivotally mounted intermediate its ends connected to said crank at one end, a second lever connected to the other end of said first lever, a first pressure member operated by the second lever for moving one of said opposing dies, a second pressure member for moving the other of said opposing dies, and a pull rod connected to said first lever and provided with an anvil for moving the second pressure member.

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