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IMPRESSING MACHINES FOR ADDRESS-PRINTING AND LIKE PRINTING PLATES

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Fig.1

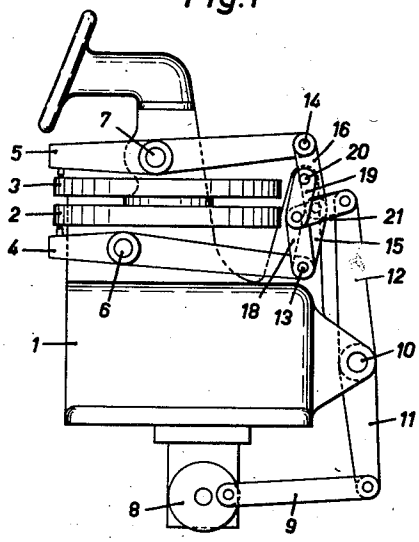



Fig.2

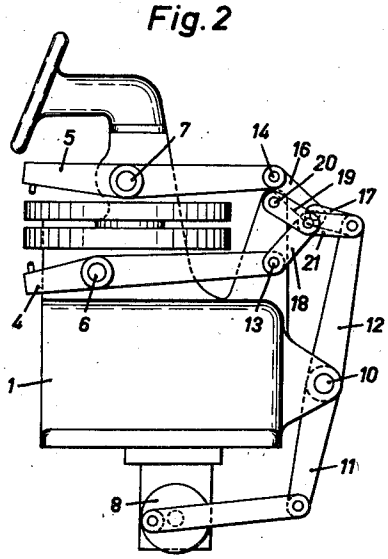



Fig.3

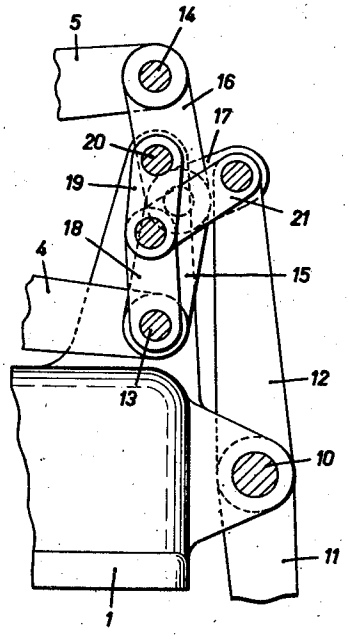
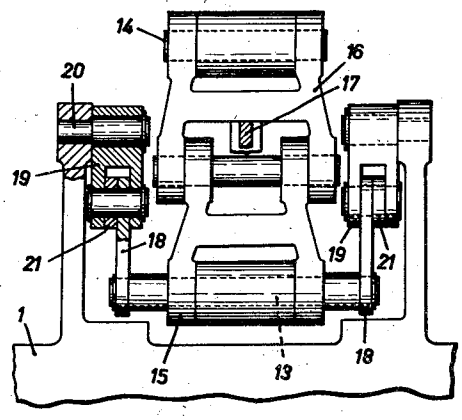



Fig.4




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Fig. 5

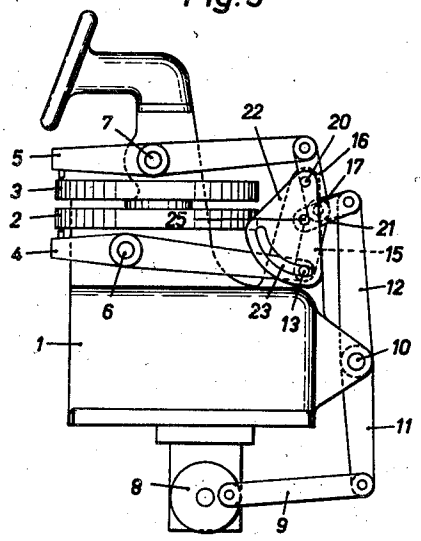



Fig. 6

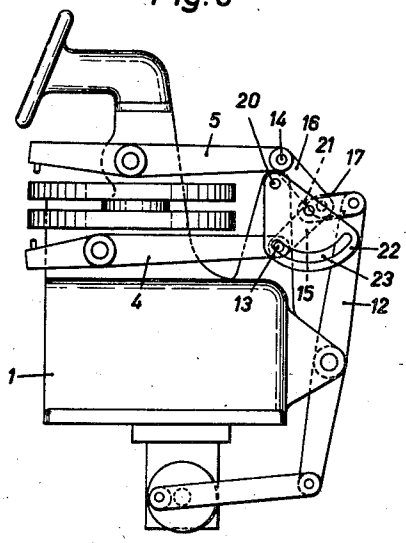



Fig. 7

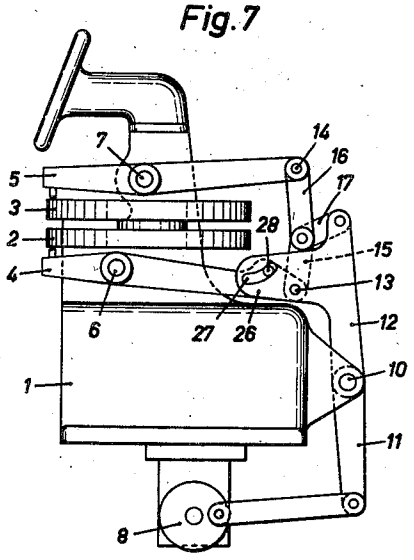
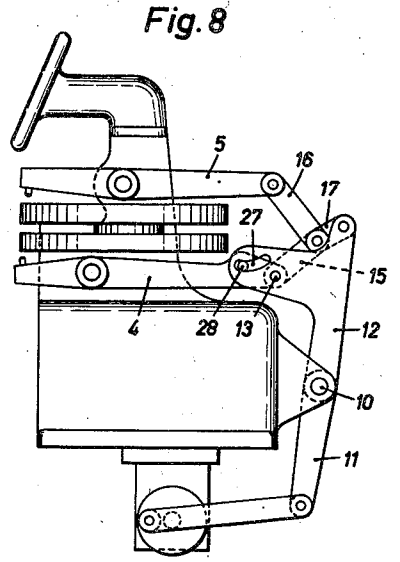



Fig. 8




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# IMPRESSING MACHINES FOR ADDRESS-PRINTING AND LIKE PRINTING PLATES

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5 Claims. (Cl. 197—6.7)

The present invention relates to impressing machines for address-printing and like printing plates, in which the impressing elements are displaced towards each other by double armed levers, wherewith the drive of such levers is effected from an operating lever through a displacing mechanism preferably formed as a toggle linkage.

According to the invention the double armed levers are driven through two inter-coupled displacing mechanisms from an operating lever in common.

As compared with the known machines, which provide as well as the opening movements of the displacing levers many advantages are presented. Firstly, both the closing as well as the opening movements of the displacing levers, occur positively, without having to provide the previously usual returning spring. The certainty of action is thereby substantially improved. Moreover, the use of two displacing mechanisms enables the sequence of the operating movements to be determined in a manner more favourable for the impressing process, inasmuch as, for instance, the matrix (die) is firmly applied to the plate to be impressed, before the patrix (punch) ends its working stroke. The displacing mechanism for the patrix supports itself by this against the pivot, then rendered stationary, of the matrix-displacing lever, whereby an unobjectionable impression is ensured. Also the previously unavoidable noisy impact of the matrix-displacing lever is avoided. The machine according to the invention therefore operates to a large extent noiselessly.

In a further embodiment of the invention the matrix-displacing mechanism is formed as a cam disc, which presents a guide slideway for the pivot of the matrix-displacing lever and is driven through an intermediate link from the operating lever. Moreover, it is also possible to use the operating lever itself as the displacing device for the matrix-displacing lever. It then is provided with a slide guide for a guide pin mounted on the matrix-displacing lever.

In order to obtain a compact construction and favourable power relationship in the drive, the displacing mechanism for the matrix-displacing lever can be composed of two mutually alike groups of constructional parts, which are arranged at both sides of the main displacing mechanism.

Several constructional examples of the invention are shown by way of example and somewhat diagrammatically in the accompanying drawings wherein merely the parts of the machine necessary for understanding the invention are shown. In these drawings:

Fig. 1 shows an impressing machine in the impressing position,

Fig. 2 shows the same machine in the opened condition, and

Figs. 3 and 4 show a portion of the machine shown in Fig. 1, on a larger scale in sectional side elevation and sectional plan.

Figs. 5 and 6 show another constructional form of the invention in the impressing position and in the opened condition, and



Figs. 7 and 8 show in a like manner a further constructional form.

Referring more particularly to Figs. 1 to 4, type wheels 2 (matrix) and 3 (patrix) are mounted in the known manner in the machine frame 1 and can be turned into the desired impressing position. The type stamps, not shown in the drawing, mounted in the type wheels and displaceable towards each other, are displaced in pairs towards each other by double armed levers 4 and 5 which are pivoted on pivots 6 and 7 on the casing 1. The drive is effected from a clutched and declutched crank disc 8 by the connecting rod 9 and the double armed operating lever 11, 12 pivoted at 10 on the casing 1. The levers 4 and 5 are connected at their jointing pivots 13 and 14 through toggle levers 15, 16 and an intermediate link 17 to the head of the operating lever 12 (see Figs. 3 and 4). The jointing pivot 13 of the lever 4 is moreover connected through a toggle linkage 18, 19 to a pivot 20 on the casing 1. This system is also connected through a link 21 with the head of the operating lever 12. As can be seen from Fig. 4, the displacing mechanism 18, 19, 21 is composed of two mutually alike groups, which are arranged at both sides of the displacing mechanism 15, 16, 17. The two displacing mechanisms are so mutually proportioned, that on the closing movement initiated by the operating lever 12, first a separation of the ends of the levers 4 and 5 occurs, until the lever 4 has raised the type stamp, presented to it by rotation of the type wheels, into the impressing position, whereupon by the displacing mechanism 15, 16, 17, supporting itself on the joint 13, the final operative movement is imparted to the patrix-displacing lever 5.

In the constructional example according to Figs. 5 and 6, the displacing mechanism 15, 16, 17 is constructed in the same manner as in the first example. At the fixed point 20, however, in this case a cam disc 22 is pivotally mounted, which has a guide slideway 23. In this slides the jointing pivot 13 of the matrix-displacing lever 4. Rocking of the cam disc is effected through an intermediate lever 21 by the operating lever 12. For this purpose the cam disc carries a pivot pin 25. By the position of this pin can, also in this arrangement, a desired coordination of the movements of the two displacing mechanisms to each other be obtained.

Figs. 7 and 8 show finally a constructional form in which the operating lever 11, 12 itself is constructed as the displacing device for the matrix-displacing lever 4. The operating lever here carries a lug 26, which presents a guide slideway 27 for a pin 28 secured on the lever 4. In this case by the distance of the pin 28 from the jointing pivot 13, the necessary determination of the movements of the displacing mechanisms, is effected.

It is obviously possible to use in the two other constructional forms appropriately the distribution of the displacing mechanisms for the matrix-displacing lever shown in Figs. 3 and 4.

We claim:

1. In an embossing machine for address-printing and similar plates, having two adjustable typewheels arranged co-axially, one of said wheels having the pressing stamps and the other of said wheels having the corresponding matrices, the combination of a frame; two substantially straight double-armed levers pivoted on said frame and adapted to co-act with said wheels, respectively, to emboss a plate; a toggle-joint connecting one end of each of said levers; a double-armed driving lever pivoted on said frame; means for rocking said driving lever; a link connecting said toggle-joint with said driving lever and adapted to exert pressing action on said toggle-joint to rock said double-armed levers, when said driving lever is rocked; and an auxiliary device actuated by said driving lever and adapted to act on that one of said two

double-armed levers which co-acts with said wheel having the matrices, to hold the matrix-wheel-co-acting lever, in its working position, to fix it with respect to said frame, shortly before said toggle-joint effects pressing action.

2. An embossing machine, according to claim 1, in which said auxiliary device consists in a second toggle-joint having one end pivoted to the matrix-wheel-co-acting lever and its other end pivoted on said frame, and a second link connecting said second toggle-joint with said driving lever, said toggle-joints and their respective links being so disposed and dimensioned that, in the working position, said second toggle-joint is in straightened position shortly before said first toggle-joint effects pressing action.

3. An embossing machine, according to claim 1, in which said auxiliary device consists in a disc pivoted on said frame and having an arcuate slot, a link connecting said disc with said driving lever, and a pin disposed in said slot and fixed on the end of said matrix-wheel-co-acting lever, so that said lever is braced in working position by means of said disc shortly before the toggle-joint effects pressing action.

4. An embossing machine, according to claim 1, in which said auxiliary device consists in a lug on said driving lever having an arcuate slot, and a pin disposed in said slot and fixed on the end of the matrix-wheel-co-acting lever, so that said lever is braced in working position by means of said lug shortly before toggle-joint effects pressing action.

5. In an embossing machine for address-printing and similar plates, having two adjustable typewheels arranged coaxially, one of said wheels having the pressing stamps and the other of said wheels having the corresponding matrices, the combination of a frame; two substantially straight double-armed levers pivoted on said frame and adapted to co-act with said wheels, respectively, to emboss a plate; a toggle joint connecting one end of each of said levers; a double-armed driving lever pivoted on said frame; means for rocking said driving lever; a link connecting said toggle-joint with said driving lever and adapted to exert pressing action on said toggle-joint to rock said two double-armed levers, when said driving lever is rocked; a second toggle-joint comprising two parts which are disposed on the two sides, respectively of said first toggle-joint, one end of each of said parts being pivoted on the end of said matrix-wheel-co-acting lever, and the other end of each of said parts being pivoted on said frame; and a second link connecting said second toggle-joint with said driving lever, so that in the working position of said matrix-wheel-co-acting lever said second toggle-joint is in straightened position shortly before said first toggle-joint effects pressing action.



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