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W. FRIEDRICHS
STAMPING MACHINE
Filed May 18, 1940

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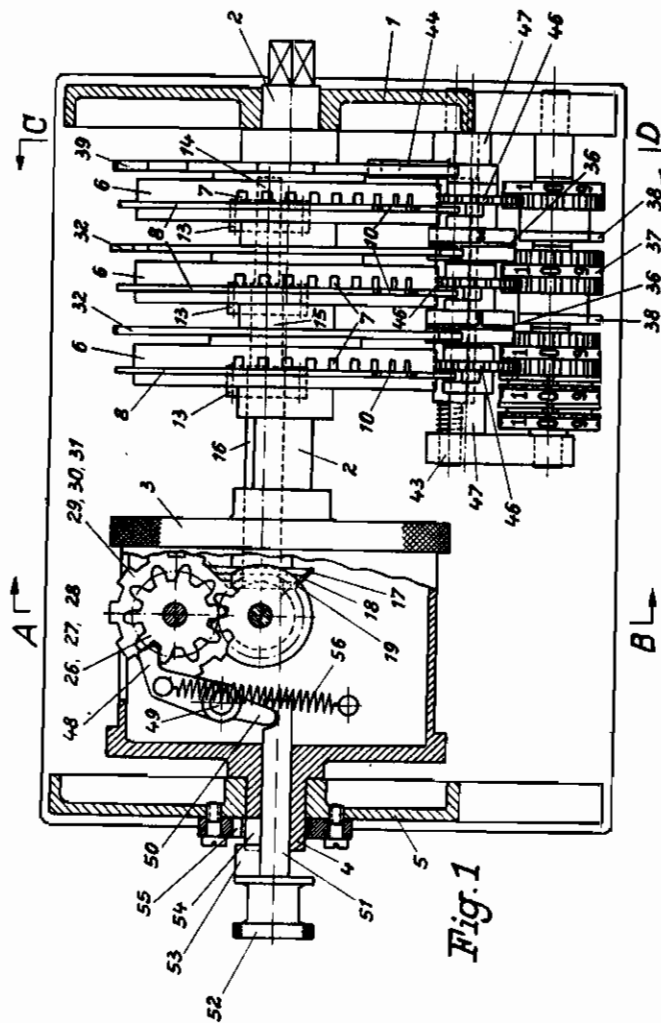


Fig. 1

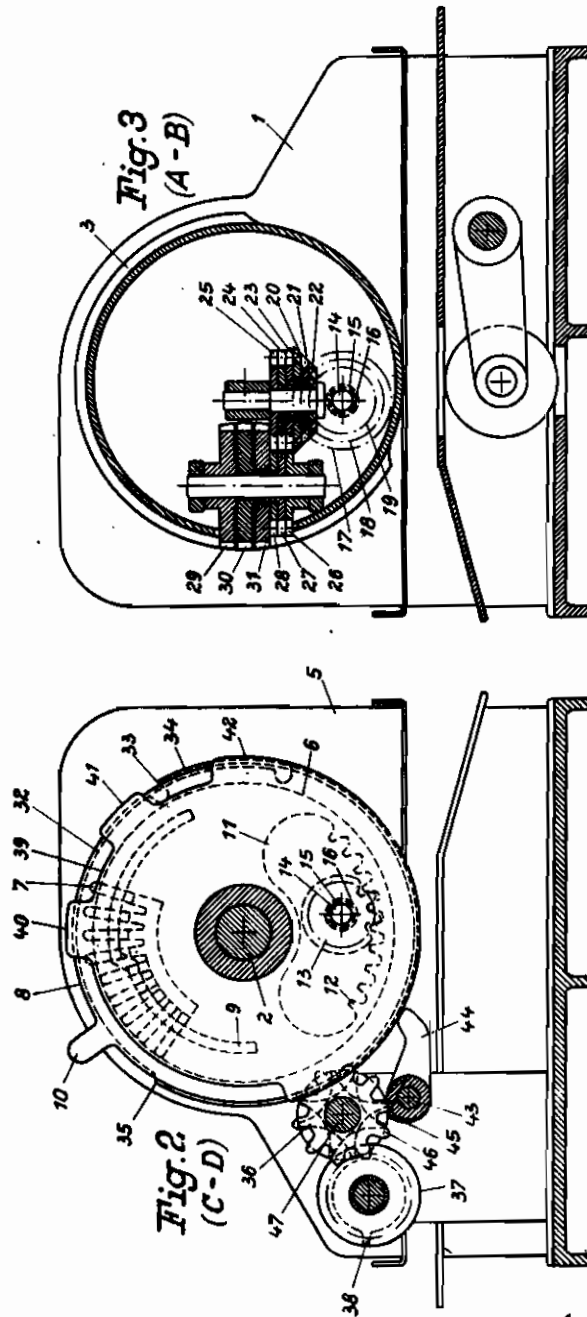
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ALIEN PROPERTY CUSTODIAN

STAMPING MACHINE

Wilhelm Friedrichs, Berlin-Reinickendorf-Ost,
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Application filed May 18, 1940

This invention relates to a stamping machine, comprising a calculating mechanism of the pin wheel type the pin wheels of which are arranged coaxially with the stamping cylinder.

It is an important object of the present invention to provide a construction of a stamping machine which is very compact and comprises relatively few and simple components.

With this and further objects in view, as may become apparent from the within disclosures, the invention consists not only in the structures herein pointed out and illustrated by the drawings, but includes further structures coming within the scope of what hereinafter may be claimed.

The character of the invention, however, may be best understood by reference to certain of its structural forms, as illustrated by the accompanying drawings in which:

Fig. 1 is a plan view of a machine having the invention applied thereto, with the hood taken off.

Fig. 2 is a section on line C—D of Fig. 1.

Fig. 3 is a section on line A—B of Fig. 1.

Similar reference numerals denote similar parts in the different views.

In the stamping machine illustrated in the drawing, the adjusting movement is transmitted from the adjusting discs to the type wheel shaft by means of transmission shafts arranged parallel to the shaft of the stamping cylinder and extending through slots in the adjusting discs. Advantageously these transmission shafts are driven by means of toothed portions provided on the edges of the slots in the adjusting discs, preferably in the form of an inside toothing.

According to a further feature of the invention, discs which are recessed Maltese cross-fashion are provided besides the adjusting discs, which recessed discs serve to effect the tens-shifting in the calculating mechanism of the machine. Said Maltese-cross discs cooperate with star-shaped wheels per se known. Moreover, cams may be provided on the shaft of the pin wheels which act upon the overthrow locking members for the wheels of the totalizer mechanism. While not substantially increasing the space occupied by the set of pin wheels, said cams substitute the relatively complicated drive for separate locking members of this kind which is normally used.

The lock of the pin and type wheels is advantageously effected by means of a slide guided in the hollow shaft of the stamping cylinder and controlling a locking member for the type wheels, which slide releases the cylinder for rotation in the locked position of the type wheels, by its

shifting, moving a projection of the slide out of the reach of a cooperating stop.

Referring now to the drawings in greater detail, it will be seen that a main shaft 2 is mounted for rotation in the side wall 1 of the machine frame while the left hand end of the main shaft is fixedly secured in the right hand side of the stamping cylinder 3. A central projection or journal 4 on the left hand side of the stamping cylinder is mounted for rotation in the side wall 5 of the machine frame. Mounted on shaft 2 is a set of cross pin wheels 6. The pins 7 of the pin wheels 6 are adjusted or set in known manner by means of adjusting or setting discs 8 provided with adjusting curves 9 and handles 10.

Moreover, the setting discs 8 are recessed at 11, Fig. 2 and the outer edge of each recess is formed with an inside toothing 12 cooperating with toothed wheels 13 mounted on a set of telescoped shafts 14, 15, 16. The innermost shaft 14 is supported at its end in the body of the pin wheel 6, and together with the surrounding shafts 15 and 16 extends through the adjacent pin wheel adjusting members on the left.

The recess 11 is dimensioned so as to permit the maximum required swing movement of the adjusting discs 8.

Mounted on the left hand ends of the shaft 14, 15, 16, are bevel wheels 17, 18, 19 cooperating with further bevel wheels 20, 21, 22, which in turn, through toothed wheels 23, 24, 25, and toothed wheels 26, 27, 28, transmit the driving motion upon the type wheels 29, 30, 31, so that the type wheels partake in the adjustment of the adjusting discs 10. Further, discs 32 are mounted on the shaft 2 beside the pin wheels, or between the pin wheels, respectively. Each of these discs is provided with a recess 33 adjacent to a cam 34 which is sloping down at 35 to the normal diameter of the discs 32. The discs 32 cooperate with star-shaped wheels 36 which are shifted by the individual discs 30 connected with the totalizer wheel 37, in the tens-transfer position, in such a manner that one of their teeth comes within the reach of the cam 34 to be shifted by this cam. The shift motion of the star wheels 36 is transmitted upon the next following totalizer wheel.

In the known machines of the type referred to the star wheels 36 are driven by means of shafts which are separately mounted in the frame and separately driven.

Secured on the right hand side of the set of pin wheels is a cam wheel 39 having cams 40,

41, 42, the number of which corresponds to the number of pin wheels. The cams cooperate with a lever 44 secured on shaft 43 which is formed with a fiat face at 45 and is so arranged with respect to toothed wheels 46 mounted on the shaft 47 of the star wheels, that the edge of the fiat face 45 comes into the reach of the gaps between the teeth of the toothed wheels 46 on clockwise rotation of the shaft, thus locking these toothed wheels and the totalizer wheels 37 meshing therewith. The lock is effected under action of the cam 40 immediately after the last pin has passed its associated toothed wheel 46. The cam 41 comes into action immediately after completion of the tens-transfer from the unit position to the decimal position and the cam 42 comes into action immediately after completion of the tens-transfer from the decimal position to the hundreds place. Where more places are provided in the shifting mechanism, the number of cams is correspondingly augmented.

In order to prevent inadvertent readjustment of the type wheels 29, 30, 31, during rotation of the drum 3, and to align the type wheels with respect to each other, a locking lever 40 is provided to engage the toothed wheels 26, 27, 28, after completion of the adjustment of the type

wheels. The locking lever is supported on the pin 49 and by means of its free end 50 engages into a recess of the slide 51 which is slidably but non-rotatably mounted on the journal 4 of the stamping cylinder. The end of the slide is formed with a knob 52 and a nose 53 which engages only into a slot 54 of the journal 4 as long as it is in the extreme left position. On the other hand, the nose engages additionally into a slot 55 of the journal bearing when the slide with its nose is shifted to the right. By the right hand shifting, the locking lever 40 disengages the toothed wheels 26, 27, 28. The locking lever 40 is acted upon by a spring 56 which passes through its dead center position as the pawl 48 is swung from one extreme position into the opposite extreme position and thus secures the pawl in its respective extreme position.

The apparatus of the present invention has been described in detail with reference to specific embodiments. It is to be understood, however, that the invention is not limited by such specific reference but is broader in scope and capable of other embodiments than those specifically described and illustrated in the drawing.

WILHELM FRIEDRICHS.