May 24, 1932. W. J. PANNIER, JR., ET AL 1,860,115

STAMPING MACHINE

Filed Oct. 30, 1931 2 Sheets-Sheet 1

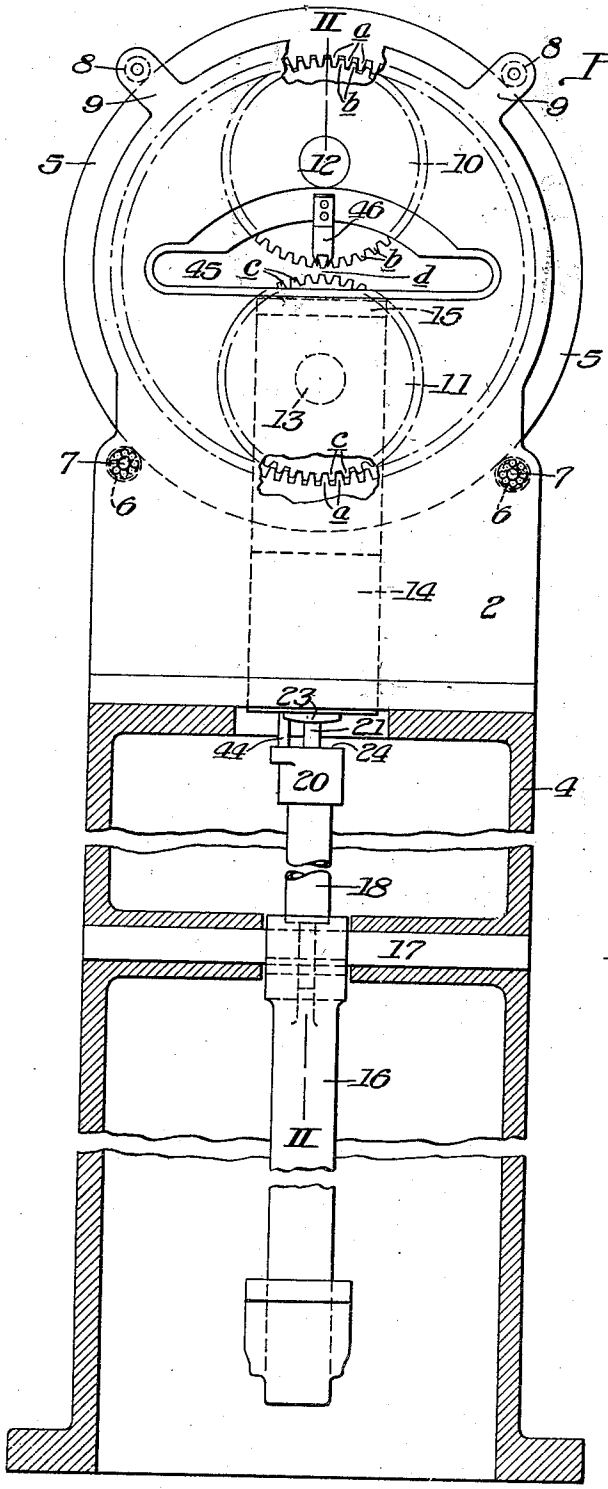


Fig. 1.

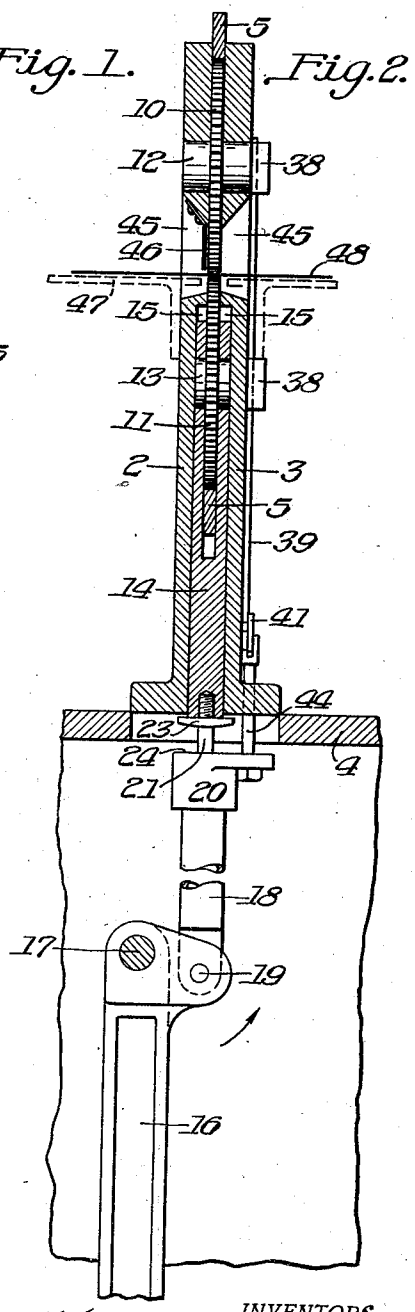


Fig. 2.

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Fig. 3.

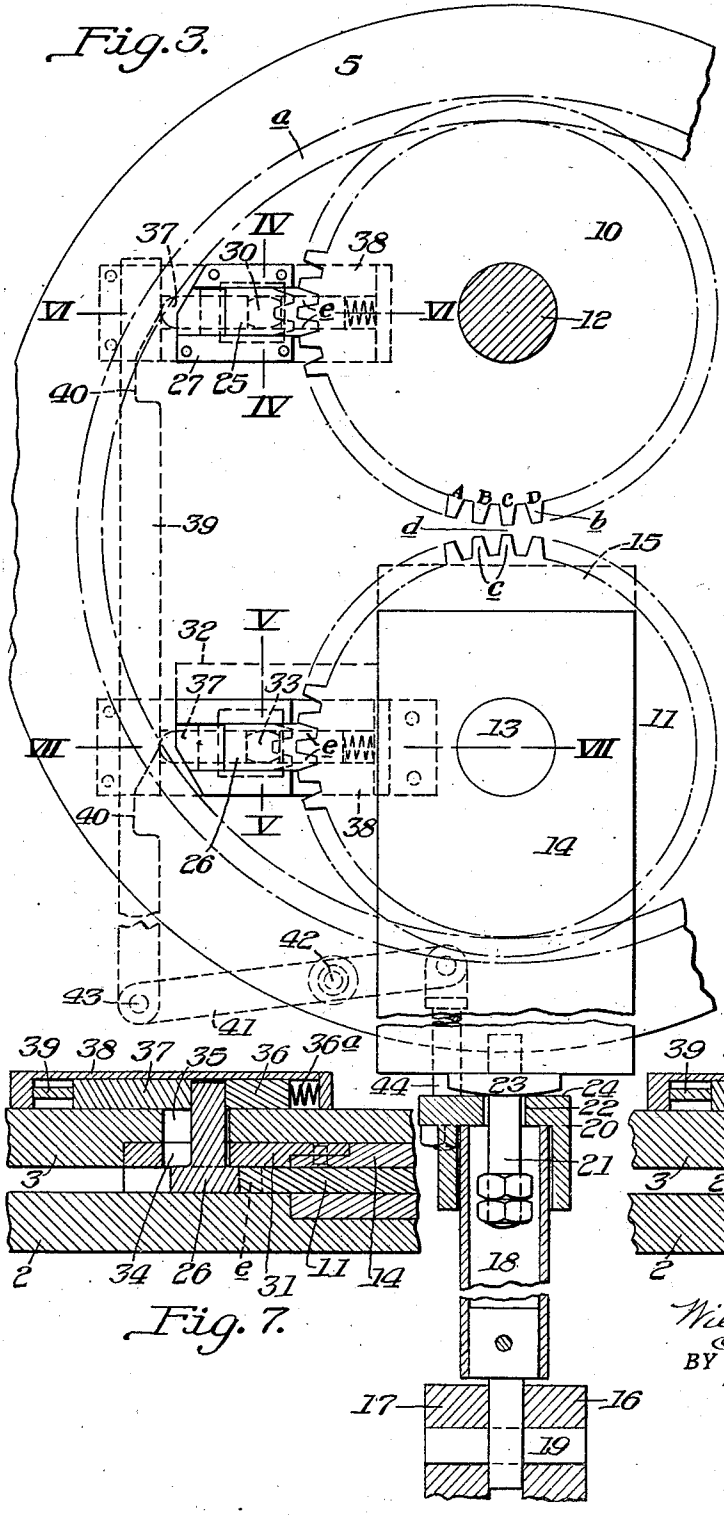


Fig. 4.

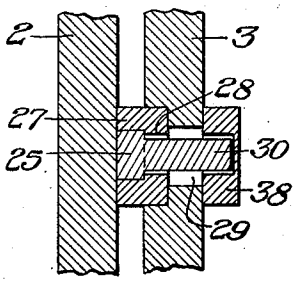


Fig. 5.

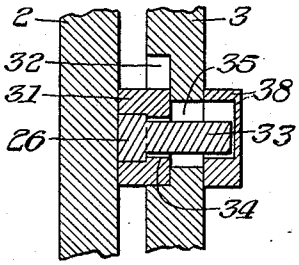


Fig. 6.

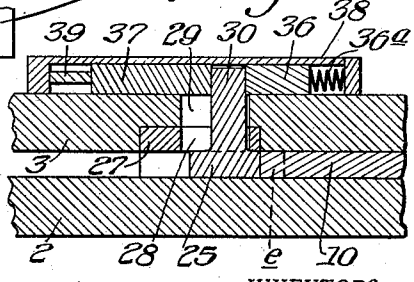


Fig. 7.

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UNITED STATES PATENT OFFICE

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STAMPING MACHINE

Application filed October 30, 1931. Serial No. 572,046.

This invention relates to improvements in stamping machines of the type shown in Patent No. 1,519,006 of December 9, 1924, to Oscar M. Pannier.

Machines of the character shown in said Letters Patent embody a plurality of master wheels operable by means of levers or handles to rotate pairs of type wheels or gears, said type wheels being mounted on relatively movable shafts and having embossing characters on the teeth or projections thereof.

Spring and ratchet means are employed between the type wheels and their shafts for the purpose of alining the type-bearing projections on said wheels prior to embossing. Such construction is expensive and offers considerable resistance to the operation of the machine, and in addition, the ratchet means is not positive in its operation, permitting the embossing mechanism to actuate the type wheels when their type-bearing projections are out of alinement.

Our invention is principally directed to a machine of this character having freely rotatable master and type wheels or gears, and means operable to positively aline the characters on said type wheels prior to their actuation in the embossing operation, whereby it is impossible to injure the article being stamped through misalinement of said type.

In the drawings which illustrate a preferred embodiment of our invention:

Fig. 1 is a front elevational view of the machine, partly in section;

Fig. 2 is a vertical section taken on the line II—II of Fig. 1;

Fig. 3 is an enlarged view of the machine in front elevation with the front portion of the body removed to show the mechanism;

Figs. 4 and 5 are detail sections taken on the vertical lines IV—IV and V—V of Fig. 3 respectively; and

Figs. 6 and 7 are horizontal detail sections taken on the lines VI—VI and VII—VII of Fig. 3 respectively, showing the means for alining the type wheels.

Referring to the drawings, the body or frame of the machine comprises front and rear vertical plates 2 and 3 respectively, of similar shape and secured together on a base structure 4. The upper portions of said plates are spaced apart to receive a vertically disposed master wheel or gear 5 therebetween.

The said wheel 5 is in the form of a ring gear having internal teeth *a* of a selected pitch and number, and is mounted for free rotation about its center on spaced-apart ball bearings 6 secured between the plates 2 and 3 on transverse pins 7. The outer periphery of the wheel or gear 5 runs on the outer races of said ball bearings, and is guided by suitable rollers 8 at its uper portion, the rollers 8 being rotatably mounted in projecting lugs 9 of the plates 2 and 3.

When so positioned, the major portion of the outer periphery of the wheel or gear 5 extends outwardly of the plates 2 and 3, where it may be grasped by the operator, as will be more fully described hereinafter.

Mounted between the plates 2 and 3 in the plane of the wheel 5 and within its inner circumference are provided a pair of type wheels 10 and 11 having projections or gear teeth *b* and *c* in equal number on their respective peripheries. The teeth *b* and *c* are designed to mesh with the internal teeth *a* of the master wheel 5, and while preferably being of the same pitch as the said teeth *a*, they are slightly shorter in height. The points or tops of the teeth *b* are provided with female dies in the form of suitable type or characters, and the tops of the teeth *c* are provided with corresponding male type.

The upper type wheel 10 is rotatable with a shaft 12 journalled in the plates 2 and 3, with its teeth *b* in operative engagement with the teeth *a* of the master wheel 5, and the lower type wheel 11 is rotatable with a shaft 13 journalled in a vertically movable or reciprocating bifurcated member 14, slidable in suitable recesses 15 in the inner faces of the plates 2 and 3. The wheel 11 is normally spaced from the upper wheel 10 to provide an opening *d* therebetween for the insertion of the material to be embossed.

An operating foot pedal or member 16 is pivotally secured in the base structure 4 by means of a transverse shaft 17.

Said pedal is connected with the bifur-

cated member 14 by means of a hollow member 18 having an eccentric pivotal connection with the lever 16 at 19. The upper end of the member 18 is loosely received in a cylindrical cap or closure member 20 having a slidable connection with the member 14 by means of a stud 21 passed through an enlarged opening 22 in the said closure member 20.

The upper end of said stud is fixedly secured in the member 14 and has an arcuate abutment 23 thereon for engagement by the upper surface 24 of the cap 20, said abutment and surface being normally spaced apart, as shown in Figs. 1 and 2.

Means are provided for alining the character-bearing teeth on the type wheels 10 and 11 prior to embossing, and include diametrically positioned dogs 25 and 26 having tooth-like projections *e* thereon for engagement with the teeth of said type wheels 10 and 11 respectively.

The dog 25 is horizontally slidable diametrically of the type wheel 10 in a grooved block or member 27 set in the inner face of the rear plate 3 as in Fig. 6. Said block 27 and plate 3 are formed with alined openings 28 and 29 to permit a stem 30 of the dog 25 to pass therethrough and reciprocate therein.

Similarly, the dog 26 is horizontally slidable in a grooved block or member 31, but said block is secured to and movable vertically with the member 14, said block 31 being vertically movable in a recess 32 in the inner face of the rear plate 3. A rearwardly extending stem 33 on the dog 26 is movable both vertically and horizontally in alined openings 34 and 35 in the block 31 and plate 3 respectively.

The stems 30 and 33 of dogs 25 and 26 extend rearwardly beyond the plate 3 and are received between spring-pressed members 36 and cam followers 37 horizontally slidable in grooved retaining blocks 38 secured to the rear face of the plate 3. The action of springs 36*a* on members 36 serves to normally retract the dogs 25 and 26 out of engagement with their type wheels.

A vertically disposed cam 39 is passed through the blocks 38 in the rear of the plate 3 in contact with an end of each of the followers 37, and is provided with similar sloping cam surfaces 40 designed to simultaneously move the dogs 25 and 26 with respect to their type wheels, upon vertical movement of said cam.

A lever 41 is pivoted to the rear face of the plate 3 at 42, having one end 43 thereof connected to the cam 39 and the other end pivoted to a vertical pusher rod 44 secured to and movable with the cap member 20 on the hollow member 18.

The front and rear plates 2 and 3 are provided with corresponding openings 45 therethrough for receiving the material to be embossed, and to afford visibility of adjacent portions of the type wheels 10 and 11 to the operator. One of said wheels may be provided on the front peripheral portion thereof at the teeth, with suitable indicia as in Fig. 3, corresponding to the type on said teeth. An indicator 46 is provided on the plate member 2, co-operating with the said indicia to indicate the character of the teeth *b* and *c* in embossing relationship.

A suitable table, diagrammatically shown at 47, may be employed for positioning and alining the material or blank 48 to be embossed between the type wheels 10 and 11, as will be readily understood. With the blank 48 positioned to bring the area to be embossed directly between the teeth *b* and *c* of the said type wheels, the operation of our invention is as follows.

The operator rotates the master wheel 5 on its ball bearings 6 in either direction by grasping the projecting outer rim thereof, rotating the type wheels 10 and 11 until the desired character-bearing teeth *b* and *c* are brought approximately into embossing position or vertical alinement, as shown by the indicator 46 and the indicia on one of said wheels.

Rotation of the foot pedal 16 about its shaft 17 will raise the member 18 and its cap member 20 vertically on the stud 21, during which movement the pusher rod 44 is elevated, causing the lever 41 to rotate about its pivot 42 and lower the cam 39 as in Fig. 3, whereby the cam surfaces 40 thereof urge the followers 37 inwardly.

The said followers act upon the stems 30 and 33 of the dogs 25 and 26 to simultaneously move said dogs toward their respective type wheels 10 and 11. Continued rotation of the pedal 16 until the top face 24 of the member 20 strikes the abutment 23 of the stud 21, will move the projections *e* of the dogs 25 and 26 into engagement with the teeth *b* and *c* of type wheels 10 and 11 respectively as in Fig. 3, providing the teeth selected for embossing the blank 48 are substantially in vertical alinement.

A slight error in the judgement of the operator in bringing the embossing teeth into vertical alinement by means of the master wheel 5 will be corrected by the entrance of the projections *e* of the dogs 25 and 26 into the teeth of their respective gears, prior to embossing.

However, if the misalinement is too great, the projections *e* on said dogs will strike the peripheries of their type wheels, thereby preventing the full travel of the pedal, and hence preventing surface 24 and abutment 23 from coming into operative engagement.

Thus it is seen that the dogs 25 and 26 and their associated mechanisms connected with the foot pedal 16 operate to either positive-

ly aline the character-bearing projections on their type wheels 10 and 11 prior to the final embossing movement, or to prevent that movement taking place.

Then the said dogs aline the wheels 10 and 11 properly, and the surface 24 of the member 20 contacts with the abutment 23, the completion of the stroke of the pedal 16 will raise the member 14 and its type wheel 11 vertically toward the wheel 10, to emboss the blank 48 between the teeth *b* and *c* then held in alinement by means of the dogs. Openings and clearances are provided for the member 14 and the mounting for the dog 26 as stated, whereby the vertical movement just described may take place.

Upon releasing or returning the pedal 16 to the normal position of Figs. 1 and 2, the wheel 11 and members 14, 20, and 18 are lowered out of embossing position, the cam 39 is elevated permitting the followers 37 to be received in the sloping surfaces 40, and the dogs 25 and 26 are moved out of engagement with their type wheels by the action of the members 36 and their springs 36*a*.

The mounting of the master wheel 5 affords an easy adjustment of the type wheels 10 and 11, as said wheel 5 is freely rotatable by the operator. With very little practice, one may become highly efficient in the adjustment of the type wheels, with a minimum of effort and maximum speed.

What we claim is:

1. In a stamping machine, a pair of spaced-apart type wheels having character-bearing projections theron, means for moving one of said wheels toward the other, and dogs for engaging and alining said character-bearing projections actuated by said means.

2. In a stamping machine, a pair of spaced-apart type wheels having character-bearing projections thereon, a master wheel for rotating the type wheels, dogs for engaging and alining the character-bearing projections, an operating member, means connecting said member and one of the type wheels for reciprocating said wheel, and means actuated by the operating member for moving the dogs toward their type wheels prior to reciprocating said wheel.

3. In a stamping machine, a pair of spaced-apart type wheels having character-bearing projections thereon, means for moving one of said wheels toward the other, and means co-operating with said character-bearing projections for positively alining the projections.

4. In a stamping machine, a pair of spaced-apart type wheels having character-bearing projections thereon, means for moving one of said wheels toward the other, and means co-operating with said character-bearing projections for preventing said movement when the projections are out of alinement.

5. In a stamping machine, a pair of spaced-apart type wheels having character-bearing projections thereon, means for moving one of said wheels toward the other including a member journalling said movable wheel, an operating pedal, means connecting said member and pedal, dogs adjacent the peripheries of the wheels having means thereon for engaging and alining the character-bearing projections, springs for normally retracting the dogs, a cam for moving the dogs toward the wheels, and means actuated by the pedal for moving the cam and dogs prior to the relative movement of said wheels.

6. In a stamping machine, a pair of co-operating spaced-apart toothed wheels having a peripheral series of characters thereon, means for simultaneously rotating the wheels, a reciprocating member journalling one of said wheels, a pair of dogs adjacent the wheels having toothed portions for engagement therewith, a cam for moving the dogs toward the wheels, an operating pedal, and means operatively connecting said cam and pedal.

7. In a stamping machine, a pair of co-operating spaced-apart toothed wheels having a peripheral series of characters thereon, those on one wheel corresponding to those on the other, means for simultaneously rotating the wheels, a reciprocating member journalling one of said wheels, a pair of dogs adjacent the wheels having toothed portions for engagement therewith, grooved members slidably mounting the dogs, one of said members being secured to the reciprocating member, a cam for the dogs, an operating pedal, and operative means connecting the cam and reciprocating member to first move the cam to move the dogs toward the wheels, and then simultaneously move the cam and reciprocating member.

In testimony whereof we hereunto affix our signatures.

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