May 31, 1927. 1,630,824

J. P. BOEHNER

STAMPING MACHINE

Filed Jan. 23, 1926 3 Sheets-Sheet 1

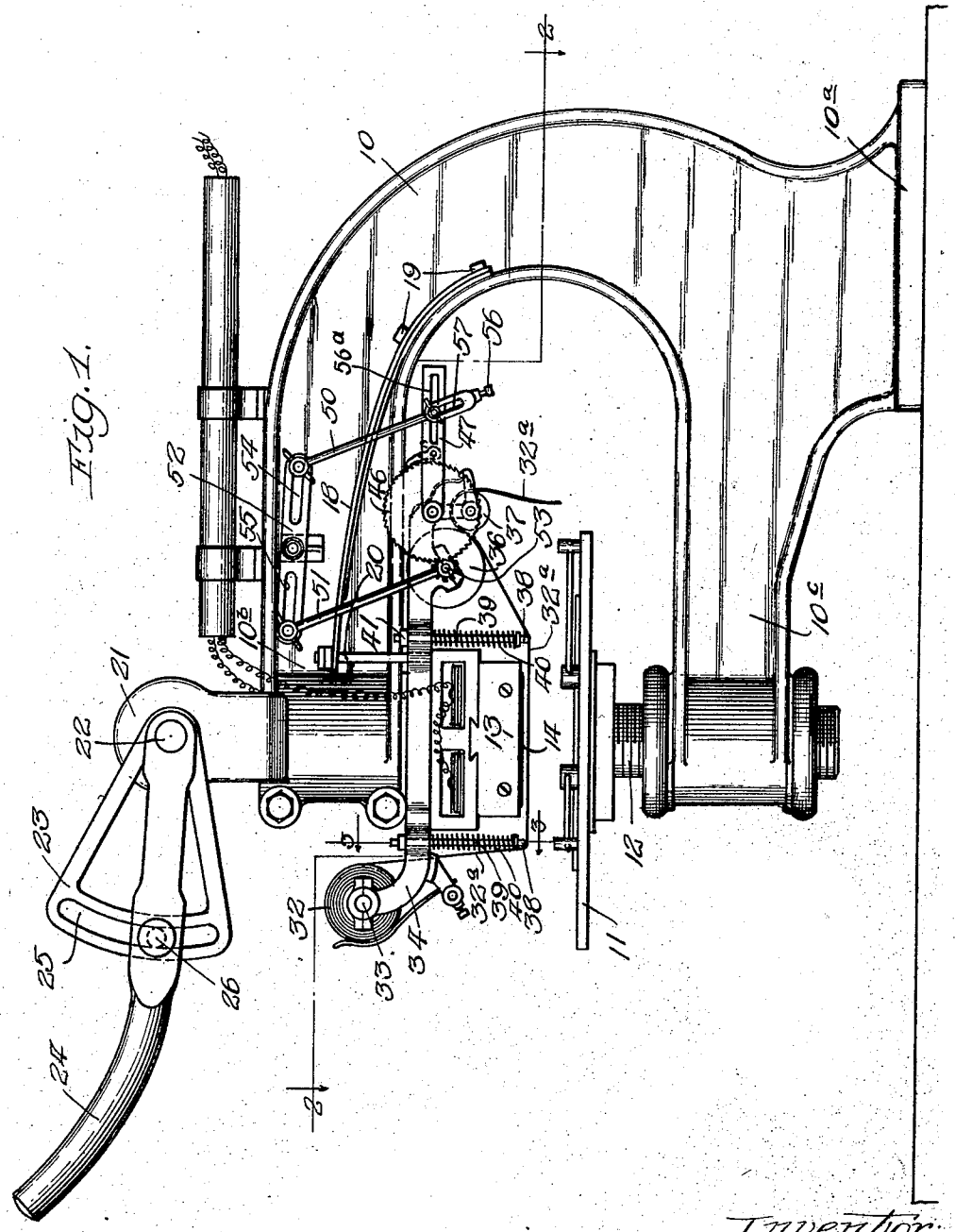


Fig. 1.

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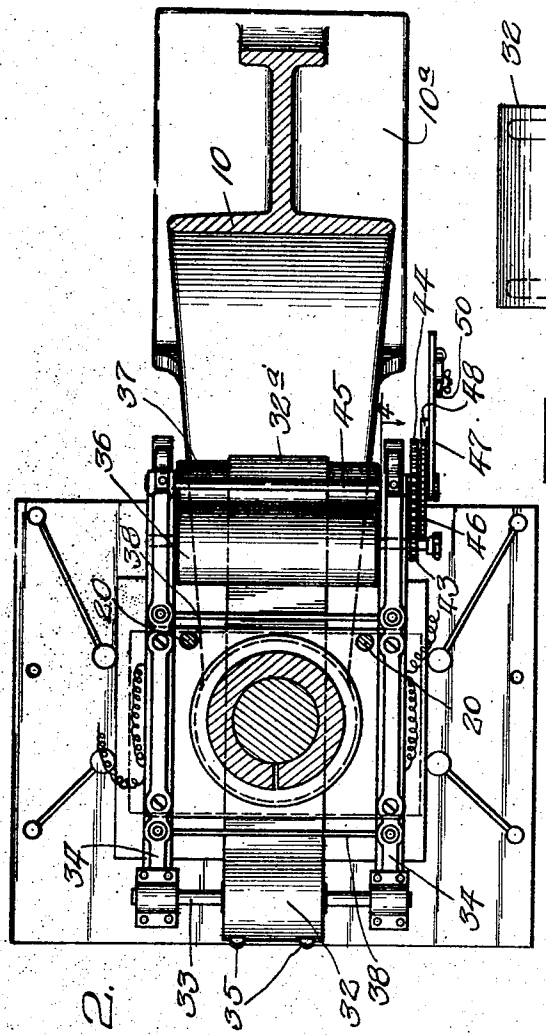


Fig. 2.

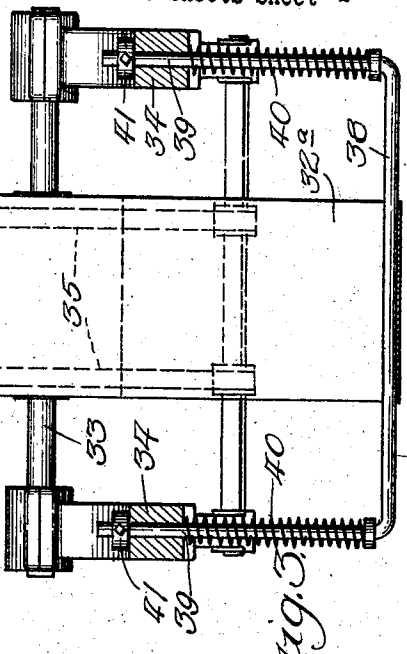


Fig. 3.

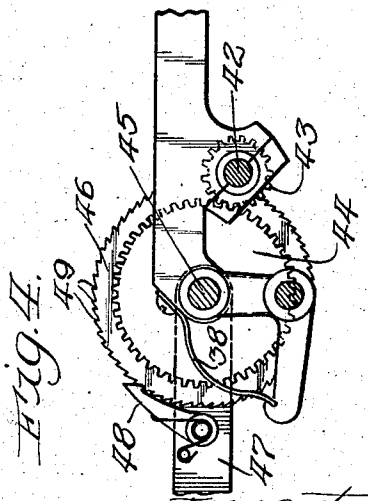


Fig. 4.

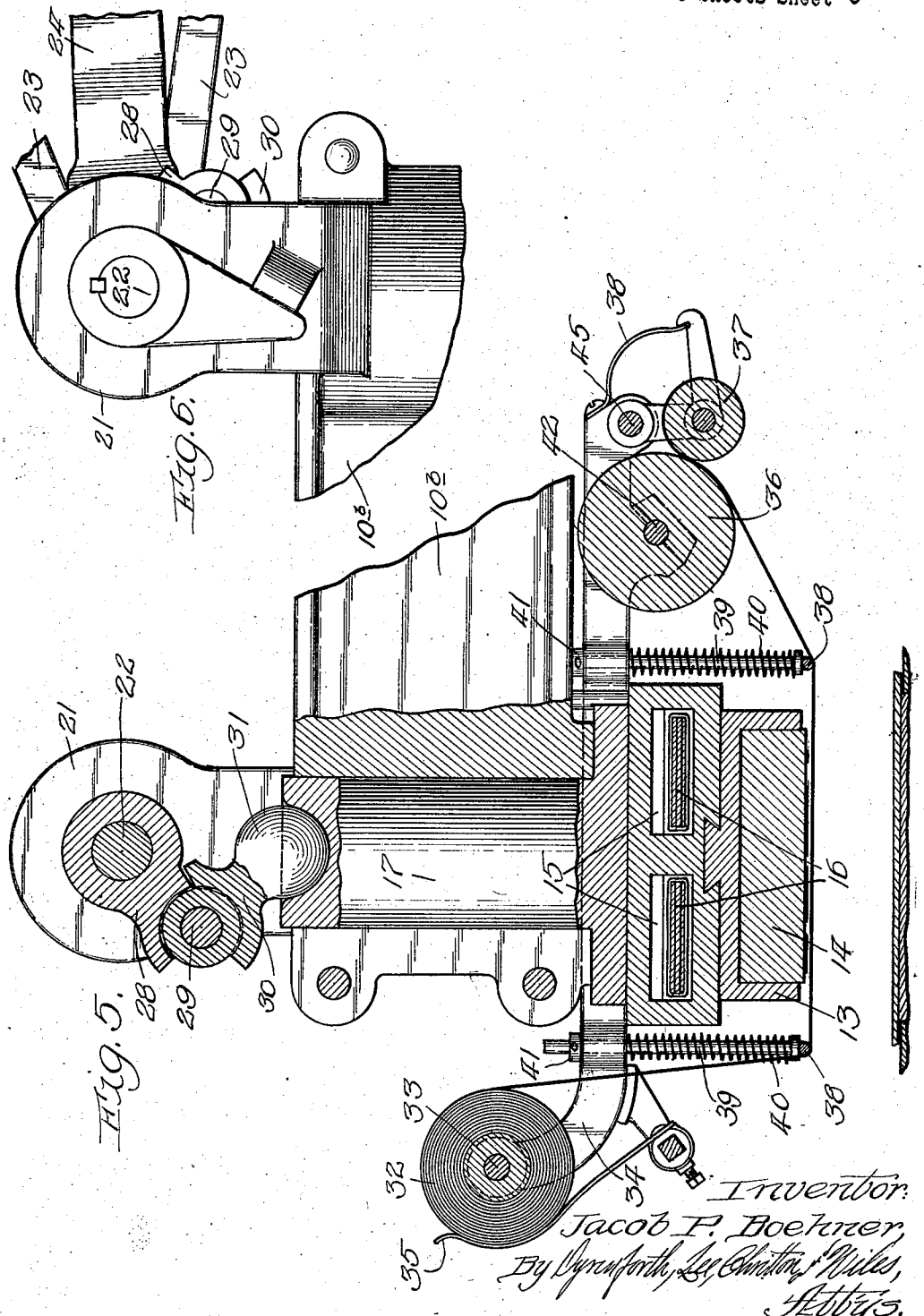
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STAMPING MACHINE

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Patented May 31, 1927. 1,630,824

UNITED STATES PATENT OFFICE.

JACOB P. BOEHNER, OF AURORA, ILLINOIS.

STAMPING MACHINE.

Application filed January 23, 1926. Serial No. 83,246.

This invention relates to improvements in stamping machines and more particularly to a stamping machine particularly adapted for stamping or embossing articles where pressure and heat are required.

For example, in stamping or embossing articles such as leather card cases, brief cases and the like with gold lettering, there is employed a sheet or roll of leaf gold ordinarily attached to paper or other backing. The sheet of gold ordinarily has on its upper surface a suitable adhesive which is softened by heat. This sheet is placed over the article to be stamped with the gold side down, and the type or other device to give the imprint is heated and then pressed downwardly on the sheet. The heat and pressure operate to release the thin gold from the paper backing and stick the same to the article to be marked.

Among the features of my invention is the provision of an automatic feeder adapted to automatically advance the roll of leaf gold with each operation. This automatic feeder may be adjusted so that the roll will move the required distance depending upon the size of the stamp being made. By this means also accurate spacing and registering may be procured.

There is also provided an adjustable trip on the feeder which operates to prevent tearing or smearing of the feeder roll by release of impression before movement.

Means are also provided to space the sheet of gold a slight distance from the type and also from the article being marked, before the feeder operates, in order to prevent any rubbing of the sheet either on the type or the article being marked.

Other features and advantages of my improved stamper will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention, shown in the accompanying drawings, Figure 1 is a view in side elevation; Fig. 2 is a view taken as indicated by the line 2 of Fig. 1; Fig. 3 is a view taken as indicated by the line 3 of Fig. 1; Fig. 4 is a view taken as indicated by the line 4 of Fig. 2; Fig. 5 is a vertical sectional view showing especially the reciprocating head of the machine, the feed roll mechanism and the toggle; and Fig. 6 is a view in side elevation showing the stop operating to limit the upward movement of the reciprocating head of the stamper.

As shown in the drawings, 10 indicates a suitable frame having a base 10^a and the two parallel horizontal upper and lower arms 10^b and 10^c respectively.

The arm 10^c supports a suitable vertically adjustable work supporting table 11 as shown. This table 11 is mounted on the upper end of a screw-threaded shaft 12 supported in the arm 10^c in order to provide vertical adjustment for the table.

The upper arm 10^b of the frame 10 carries the stamping head which is vertically reciprocable therein. This head carries a chase or frame 13 adapted to hold the type or other impression characters 14 adapted to make the necessary imprint on the material to be stamped. The particular construction of this chase and the manner of holding the type or other impression characters therein, form no part of the present invention and consequently will not be described in detail here.

Just above the chase 13 the reciprocable head is provided with two chambers 15, 15 adapted to contain the two electrical resistance units 16, connected to any suitable source of current supply in order to furnish the necessary heat for the type or plate carried in the chase.

The printing head is carried by a round shaft 17 reciprocably mounted in the end of the arm 10^b and is yieldingly held in its uppermost position, as shown in Figs. 1 and 5, by means of the springs 18 having their inner ends attached to the frame 10 by the screws 19, 19 and their outer ends fastened to the upper ends of bolts 20 which in turn have their lower ends fastened to the stamping head.

The outer end of arm 10^b of the frame 10 carries two upwardly projecting parts 21 affording bearings for the cross-shaft 22 arranged above the upper end of the vertical shaft 17 carrying the stamping head. The shaft 22 is adapted for rotation within its bearings by means of the quadrant lever 23 which in turn is operated by the operating handle 24. The quadrant lever 23 is provided with an arcuate slot 25 and the operating lever 24 is provided with a bolt 26 extending through said slot. Any adjustment of the lever 24 with respect to the quadrant

lever 23 may be provided by loosening the bolt 26 and shifting the position thereof in the slot 25 and then tightening the bolt. By means of this adjustment it will be seen that various positions of the operating lever 24 may be obtained in order to adjust the same to the convenience of different operators.

Up and down movement of the operating lever 24 is adapted to raise and lower the stamping head. This is accomplished by means of a toggle lever arrangement between the shaft 22 and the upper end of the shaft 27. This comprises more particularly a short lever 28 carried by the shaft 22 having on its lower end pivoted at 29 to the upper end of another lever 30 having on its lower end a ball 31 resting in a suitable concavity on the upper end of the shaft 17. Rotation of the shaft 22 by lowering the lever 24, operates to rock the lever 28 and straighten the toggle thus pushing the shaft 17 downwardly. In the opposite manner raising of the lever 24 "breaks" the toggle permitting the springs 18 to raise the stamping head.

I will now describe the automatic feeder controlling the roll gold. As stated before, the roll gold, bronze or other material to be stamped or embossed on the article operated upon is ordinarily furnished in a thin sheet or leaf attached to a strip of paper or other material as a backing. This material is commonly referred to as roll gold as the same is ordinarily furnished in rolls. A roll of this material as indicated by 32, is mounted on a shaft or spindle 33 carried by the arms 34 attached to the stamping head. 35, 35, indicate a pair of springs adapted to yieldingly press against the roll 32 in order to furnish frictional engagement to its rotation to prevent too free unrolling or unwinding of the same. It is to be understood that heretofore, and hereafter in using the term "roll gold" I do not intend to be limited to the use of this material with my machine, but mean to include any similar marking material, for example, bronze or other metal, or other material to be used in a similar manner to leave a mark or imprint upon the material after being pressed into contact with the same for stamping or embossing, and furnished in a thin flexible sheet or strip.

The strip of roll gold or similar material (indicated by 32^a where unrolled) is passed down from the roll 32 under the type 14 thence upwardly between two friction rollers 36 and 37. The roller 36 is positively rotated. The roller 37 is yieldingly pressed against the roller 36 by means of the springs 38 so that the roll gold may be gripped between the two rollers. When the roller 36 is rotated, the two rollers, with the strip gripped between them, operate to pull or feed the strip of roll gold along. After leaving the rollers 36 and 37 the strip 32^a goes into waste.

The strip of roll gold 32^a, when the stamping head is in its uppermost position, is held a slight distance below the type 14 by means of the two horizontal rods 38, 38, one on each side of the stamping head. These rods are provided at each end with the upwardly projecting rods 39, carried at their upper ends by suitable holes in the members 34. They are yieldingly pressed downwardly by the springs 40 and further downward movement is limited by the collars 41 on their upper ends. It will be seen that in the operation of the device, when the stamping head is lowered, the rods 38, 38 will first strike the table 11 or the material being operated upon, whereupon they will become stationary, permitting the head to descend further against the tension of the springs 40, 40, until the type comes in contact with the roll gold which at such time is also in contact with the material being stamped. Likewise, as the head ascends after the stamping operation, the roll gold will remain stationary for a short space of time until the type is raised out of contact therewith and the collars 41, 41 are lifted by the head, whereupon the rods 38 will rise with the head and permit the roll gold to be lifted from the material being operated upon.

I will now describe more in detail the construction and operation of the mechanism for feeding the roll gold. The end of the shaft 42 carrying the roller 36 is provided with a gear or pinion 43 which meshes with a pinion 44 mounted on the shaft 45 which also carries the toothed wheel 46. It will be seen that rotation of the toothed wheel 46 will therefore operate to rotate the shaft 42 and consequently the roller 36 mounted thereon. Rotatably mounted on the shaft 45 is a lever 47 carrying a pawl or trip 48 adapted to engage with the teeth 49 on the wheel 46. The teeth 49 and the claw on the trip 48 are arranged in a well-known manner so that upward movement of the lever 47 will cause the trip to ride over the wheel without turning the wheel 46, but downward movement will cause the trip 48 to engage with a tooth of the wheel 46 and rotate the same. The parts are so arranged that downward movement of the stamper head causes upward movement of the lever 47 and upward movement of the stamper head causes downward movement of said lever 47. It will be seen, therefore, that as the stamper head descends, the roll gold 32^a will remain stationary, but that as it ascends the action of the trip 48 will rotate the roller 36 to cause the roll gold to be fed along. Rocking of the lever 47 is accomplished by means of the two rods 50 and 51 having their

upper ends attached to the rocking lever 52. The lower end of the rod 50 is attached to the lever 47, and the lower end of the rod 51 is pivotally attached to the stamper head at 53.

In order to vary the amount of feed of the roll gold, the upper ends of the rods 50 and 51 are provided for horizontal adjustment in the slots 54 and 55 in the rocking lever 52. Likewise the lower end of the rod 50 is provided for horizontal adjustment in the slot 56ª in the lever 47. The lower end of the rod 50 is also provided with a slot 57 in order to provide a certain amount of lost motion between this rod and the lever. This lost motion is an important feature of the device since it prevents any feeding or movement of the roll gold during the first movement upwardly of the head after the stamping operation. It is very important that there be no sliding or dragging of the roll gold across the work or the type. Consequently, after the stamping operation there must be no feeding of the roll gold until the head has been raised a short distance and the roll gold lifted from the work and also removed out of contact with the type by the relative downward movement of the rods 38. After this has been accomplished, further upward movement of the head causes the lever 47 to rock downwardly and feed the roll gold as above described. The exact distance to which the roll gold is to be fed is determined by the adjustment of the upper ends of the rods 50, 51 in the slots 54, 55 and by adjustment of the lower end of the rod 50 in the slot 56ª as above described.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible in view of the prior art.

What I claim as new, and desire to secure by Letters Patent, is:

1. A stamping machine of the character described comprising; a work supporting table; a vertically reciprocable head arranged above said work supporting table; means for attaching impression characters to said head; means for heating said impression characters; a strip of flexible marking material lying below said impression characters and adapted to be pressed down onto work on the work supporting table by said impression characters upon the lowering of said head; means for feeding said marking material along upon each operation of the head, said feeding means operated by movement of the head; and means for rendering said feeding means inoperative during movement of the head from a point immediately before the stamping operation to a point immediately after the same.

2. A stamping machine of the character described comprising; a work supporting table; a vertically reciprocable head arranged above said work supporting table; means for attaching impression characters to said head; means for heating said impression characters; a strip of flexible marking material lying below said impression characters and adapted to be pressed down onto work on the work supporting table by said impression characters upon the lowering of said head; adjustable means for feeding said marking material along upon each operation of the head, said feeding means operated by movement of the head; and means for rendering said feeding means inoperative during movement of the head from a point immediately before the stamping operation to a point immediately after the same.

In testimony whereof, I have hereunto set my hand this 8th day of December, A. D. 1925.

JACOB P. BOEHNER.