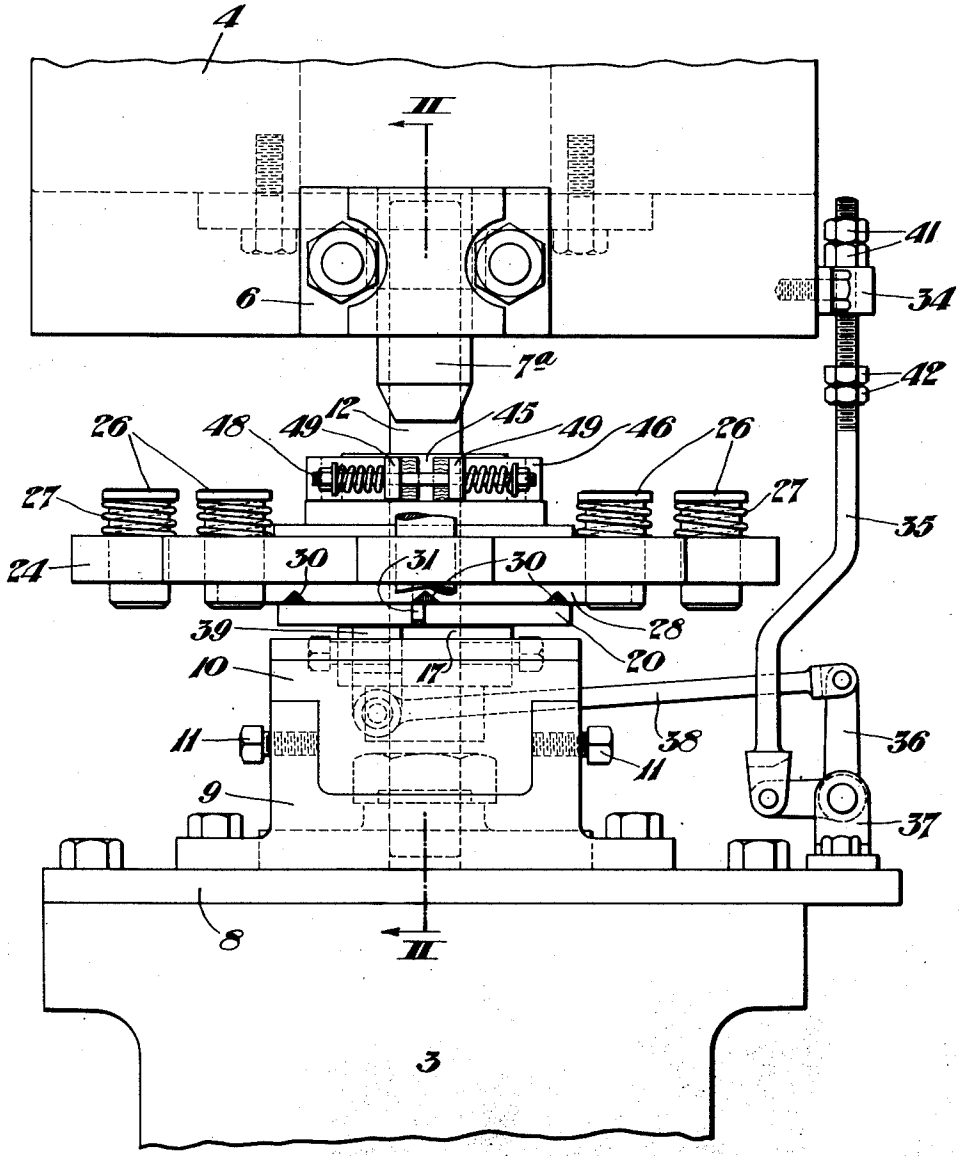
July 3, 1928. 1,675,801

T. A. GORMAN

STAMPING APPARATUS

Filed Sept. 23, 1926 4 Sheets-Sheet 1

Fig. 1.



Witnesses:
Edwin Trueb

Inventor:
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July 3, 1928. 1,675,801

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STAMPING APPARATUS

Filed Sept. 23, 1926 4 Sheets-Sheet 2

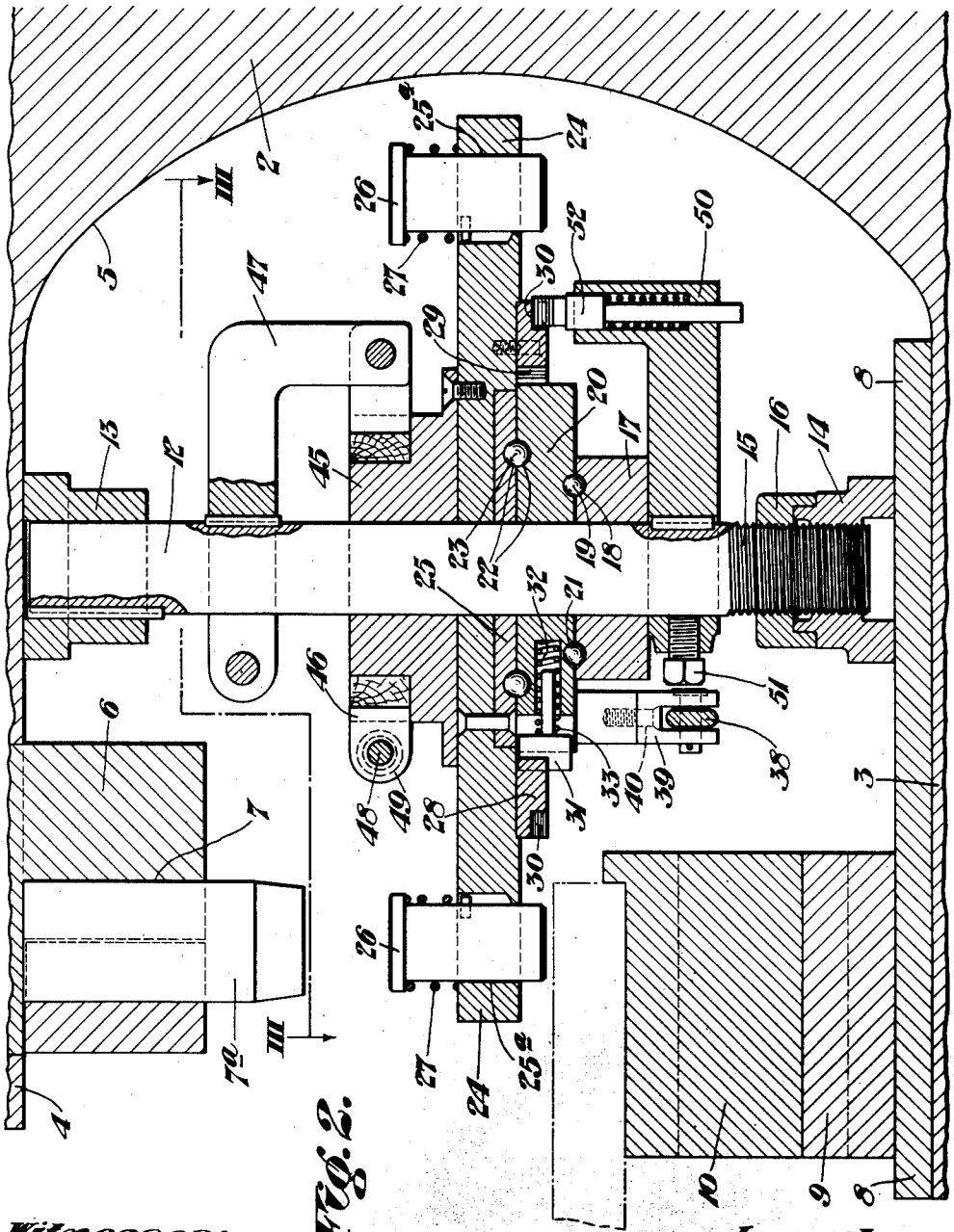


Fig. 2.

Witnesses:
Edwin Trueb

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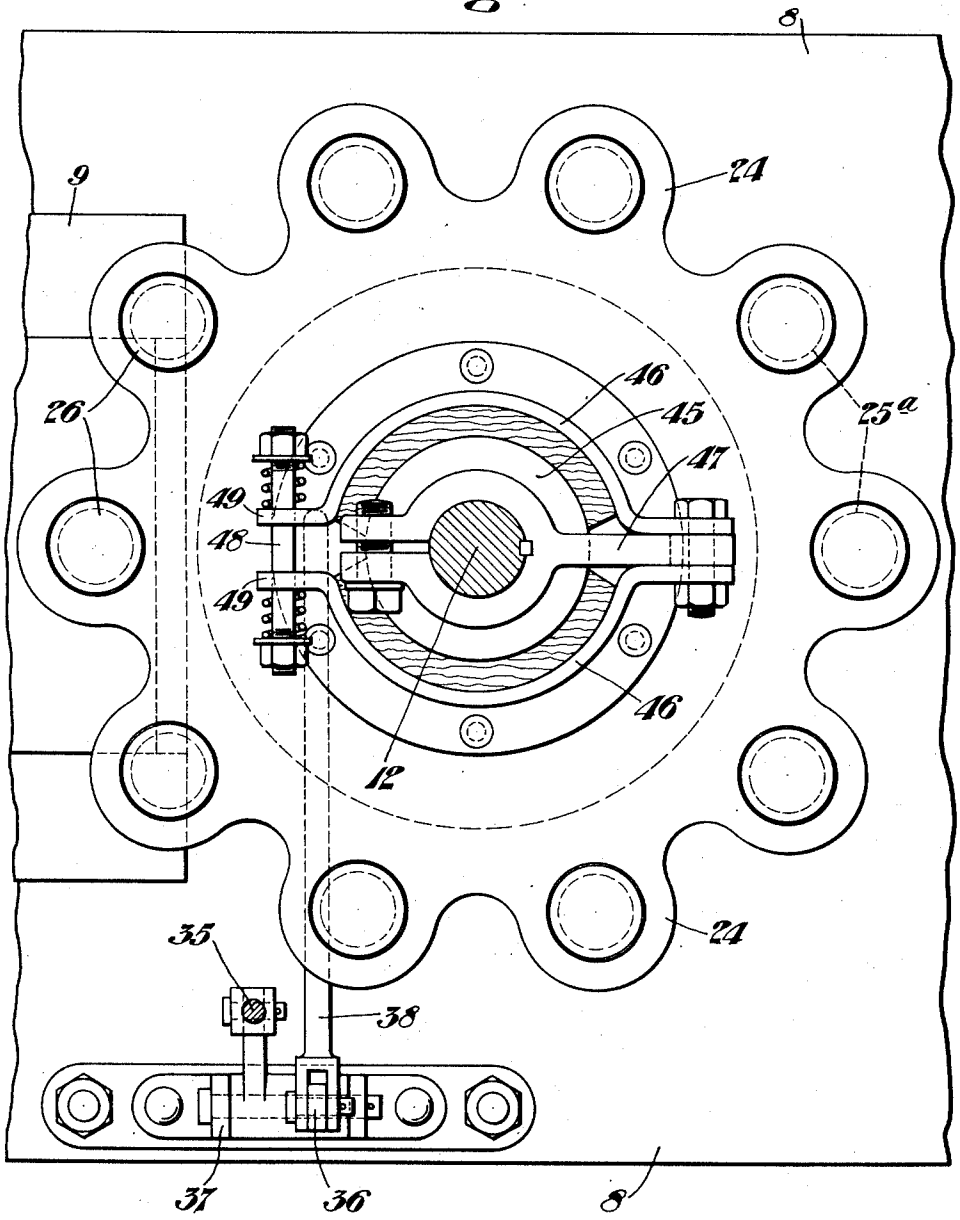
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STAMPING APPARATUS

Filed Sept. 23, 1926 4 Sheets-Sheet 3

Fig. 3.



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July 3, 1928. 1,675,801

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STAMPING APPARATUS

Filed Sept. 23, 1926 4 Sheets-Sheet 4

Fig. 5.

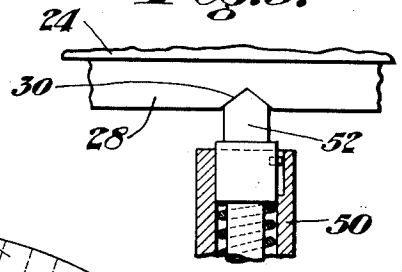
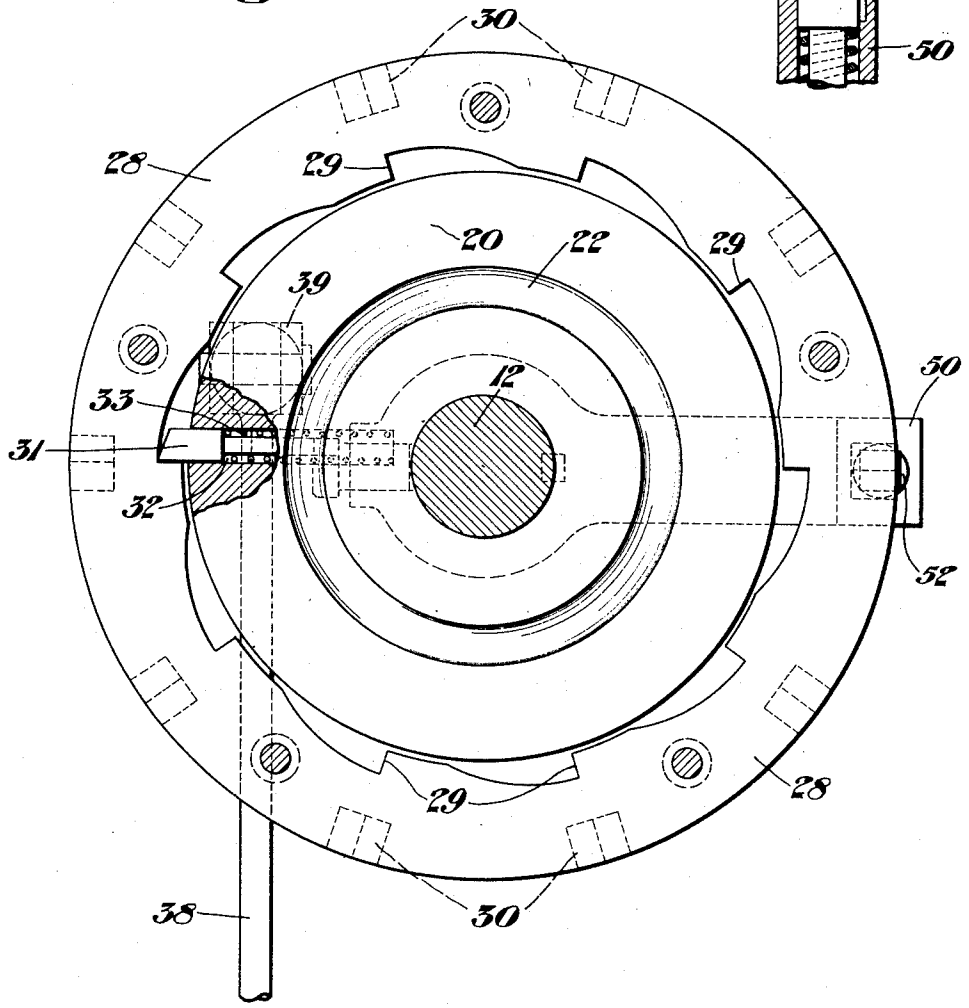


Fig. 4.



Witnesses:
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Patented July 3, 1928. 1,675,801

UNITED STATES PATENT OFFICE.

THOMAS A. GORMAN, OF JOHNSTOWN, PENNSYLVANIA.

STAMPING APPARATUS.

Application filed September 23, 1926. Serial No. 137,313.

This invention relates to stamping apparatus, and more particularly to a stamping apparatus that may be attached to a standard punching machine, and has for one of its objects the provision of an improved form of apparatus of this class that is automatic in operation and a general improvement over the art.

Another object is to provide an apparatus of the class described having the novel design, construction and combination of parts hereinafter described and illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a partial front elevation of a punching machine having this invention applied thereto.

Figure 2 is a sectional view taken on the line II—II of Figure 1.

Figure 3 is a sectional plan view taken on the line III—III of Figure 2.

Figure 4 is a fragmentary detail plan of the operating ratchet mechanism.

Figure 5 is a fragmentary detail showing the locking means for holding the stamping disk stationary during the stamping operation.

Referring more particularly to the drawings, the numeral 2 designates the housing of a standard metal punching machine having a base 3 and head 4 spaced vertically to form an open sided throat 5.

A plunger 6 is reciprocably mounted in the head 4 and adapted to be reciprocated by mechanism (not shown) as is common in machines of this class.

The lower end of the plunger 6 is provided with a clamp socket 7 adapted to normally receive a punch, but in the present instance a stamp presser 7^a is clamped in the socket 7.

A mounting plate 8 is bolted to the base 3, and a work-support holder 9 is bolted to the plate 8. A work-supporting member 10 is mounted in the holder 9 and is adjustable horizontally so as to permit the correct positioning of work-pieces under the stamp members to be described. The member 10 is adapted to be locked in position by bolts 11.

A center post 12 is mounted in the throat 5 and has its upper end secured or keyed in a bearing 13 bolted to the head 4, while its lower end is mounted in a bearing 14 bolted to the mounting plate 8. The lower end of the post 12 is screw-threaded as at 15, and a nut 16 is threaded thereon which nut is adapted to bear against the bearing 14. The post 12 is shorter than the distance between the plate 8 and head 3, so that by adjusting the nut 16, the post 12 and mechanism carried thereby may be shifted vertically to adjust the apparatus for stamping varying thicknesses of work-pieces.

An anti-friction bearing ring 17 is clamped or otherwise secured on the post 12 and has its upper face grooved as at 18, to receive the ball bearings 19. A second anti-friction bearing ring 20 is revolvably mounted on the post 12 above the ring 17, and has its lower face grooved as at 21, to receive the ball bearings 19, while its upper face is grooved as at 22 to receive the ball bearings 23.

A stamp-carrying disk 24 is revolvably mounted on the post 12 above the ring 20, and has its lower face recessed to receive a bearing ring 25 which is secured thereto, and grooved to receive the ball bearings 23.

The disk 24 is provided with openings 25^a in which are removably mounted stamp members 26, which are normally held in retracted position by springs 27. The disk 24 extends into the space between the work support 10 and the stamp presser 8, so that when the plunger 6 is moved downwardly, the presser 8 will engage or strike the stamp member 26 located below it and press or force it into the work-piece.

The disk 24 is provided with a ratchet ring 28 which is secured to its lower face, and has a series of ratchet teeth 29 on its inner periphery, and a series of recesses or sockets 30 in its bottom face.

A ratchet dog 31 is mounted in a socket 32 in the bearing ring 20 and is normally forced outwardly into engagement with the ratchet teeth 29 by a coil spring 33.

A sleeve member 34 is bolted to the plunger 6 and is adapted to receive the upper end of an operating rod 35, which has its lower end pivotally secured to one arm of a bell-crank 36 pivoted to a bracket 37 on the mounting plate 8. The other end of the

bell-crank 36 is pivotally secured to one end of a connecting rod 38, which has its other end pivotally connected to a swivel clevis 39. The clevis 39 is swiveled on a pin 40 which is screw-threaded into a threaded recess in the anti-friction bearing ring 20.

The upper end of the rod 35 is screw-threaded to receive nuts 41 and 42 which limit the movement of the sleeve 34 relative to the rod.

In operation, as the plunger 6 moves downwardly, the sleeve 34 will move down until it strikes the nut 42, when the sleeve will force the rod 35 to move downwardly so as to rock the bell-crank 36 and thereby reciprocate the connecting rod 38, which in turn will cause a rotation of the bearing ring 20 through the clevis 39 and pin 40, so as to advance the ratchet dog 31 into engagement with the next ratchet tooth 29 in the ring 28. As the plunger 6 moves or is reciprocated in the reverse direction, the sleeve 34 will move freely relative to the rod 35 until it strikes the nut 41 when it will lift the rod 35 so as to rock the bell-crank 36 and thereby reciprocate the rod 38, which in turn will cause a rotation of the bearing ring 20 through the clevis 39 and pin 40 so as to cause the ratchet dog 31 to cooperate with the ratchet tooth 29 with which it is in contact to rotate the disk 24 sufficiently to bring the next successive stamp member into the path of the stamp presser 7^a.

It will be seen from the above that the operation of the plunger 6 will cause a step by step rotation of the disk 24 so as to move successive ones of the stamping members into stamping position.

In order to prevent overrunning of the disk 24 I have provided a drag or braking drum 45 which is secured on the upper face of the disk 24 and has a two-part, wood-faced drag band 46 frictionally engaged therewith.

The band is hingedly connected to a bracket 47 clamped around the post 12 and is forced against the drum 45 by a pair of coil springs carried by a bolt 48, which passes through ears 49 of the band.

A positive latch or lock is provided for releasably locking the disk 24 in stamping position. This lock comprises a holder or bracket 50 secured to the post 12 by a set-screw 51 and carrying a spring-pressed latch pin 52, which is normally forced up against the underside of the ratchet ring 28 and is adapted to engage in sockets or recesses 30 in the bottom face of the ring 28 when the disk 24 is in stamping position.

From the above it will be readily understood that I have provided a heavy duty stamping mechanism in which the stamping members are automatically presented for stamping, and that the device may be built as an entire machine or the stamping mechanism may be applied to a standard form of punch.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited thereto since various modifications may be made without departing from the scope of my invention as defined in the appended claims.

I claim:

1. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamps carried by said disk, said plunger being adapted to be reciprocated to strike said stamps, and means operable by said plunger for rotating said disk.

2. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, and means for causing a step by step rotation of said disk to move successive ones of said stamp members into line with said plunger.

3. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, means for causing a step by step rotation of said disk to move successive ones of said stamp members into line with said plunger, and means for preventing the overrun of said disk.

4. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings

to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, and means operable by said plunger for causing a step by step rotation of said disk to move successive ones of said stamp members into line with said plunger.

5. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, means for causing a step by step rotation of said disk to move successive ones of said stamp members into line with said plunger, and means for preventing the overrun of said disk, said last named means including a friction drag and a stop latch.

6. A stamping apparatus comprising a housing, a reciprocating plunger, a work support below said plunger, a center post secured to said housing, a stamp disk revolvably mounted on said post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, and means operable by said plunger for causing a step by step rotation of said disk to move successive ones of said stamp members into line with said plunger, said means including a ratchet ring on said disk, a dog carried by a support on said center post, and a plurality of levers operable by said plunger for operating said dog.

7. A stamping apparatus comprising a housing, a reciprocating plunger, a horizontally adjustable work support below said plunger, a center post secured to said housing, an anti-friction bearing race ring secured on said center post, a second anti-friction bearing race ring mounted on said post above said first named ring and revolvable relative thereto, anti-friction bearings between said rings, a stamp carrying disk revolvably mounted on said post above said second named bearing ring and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, an anti-friction bearing race ring on the underside of said disk, anti-friction bearings between said second and last named race rings, and means operable by said plunger for causing a step by step rotation of said stamp members into line with said plunger.

8. A stamping apparatus comprising a housing, a reciprocating plunger, a horizontally adjustable work support below said plunger, a center post secured to said housing, an anti-friction bearing race ring secured on said center post, a second anti-friction bearing race ring mounted on said post above said first named ring and revolvable relative thereto, anti-friction bearings between said rings, a stamp carrying disk revolvably mounted on said post above said second named bearing ring and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, an anti-friction bearing race ring on the underside of said disk, anti-friction bearings between said second and last named race rings, means operable by said plunger for causing a step by step rotation of said stamp disk to move successive ones of said stamp members into line with said plunger, and means for preventing an overrun of said disk, said last named means including a friction drag and a stop latch.

9. A stamping apparatus comprising a housing, a reciprocating plunger, a horizontally adjustable work support below said plunger, a center post secured to said housing, an anti-friction bearing race ring secured on said center post, a second anti-friction bearing race ring mounted on said post above said first named ring and revolvable relative thereto, anti-friction bearings between said rings, a stamp carrying disk revolvably mounted on said post above said second named bearing ring and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, an anti-friction bearing race ring on the underside of said disk, anti-friction bearings between said second and last named race rings, and means operable by said plunger for causing a step by step rotation of said stamp disk to move successive ones of said stamp members into line with said plunger, said means including a ratchet ring secured to said stamp carrying disk, a spring-pressed dog carried by said second named anti-friction bearing race ring, and lever mechanism operable by said plunger.

10. The combination with a punching machine comprising a housing, a reciprocating

plunger, and an adjustable work support, of a center post secured to said housing, a stamp disk revolvably mounted on said center post and extending into the space between said plunger and work support, a plurality of stamp members mounted in openings in said disk and adapted to be forced through said openings to mark a work-piece on said work support, said plunger being adapted to be reciprocated to strike said stamp members and force them through said openings, and means operable by said plunger for rotating said disk.

In testimony whereof, I have hereunto signed my name.

THOMAS A. GORMAN.