R. P. O'BRIEN.

PRINTING MACHINE.

APPLICATION FILED SEPT. 7, 1910.

982,014. **Patented Jan. 17, 1911.**

4 SHEETS—SHEET 1.

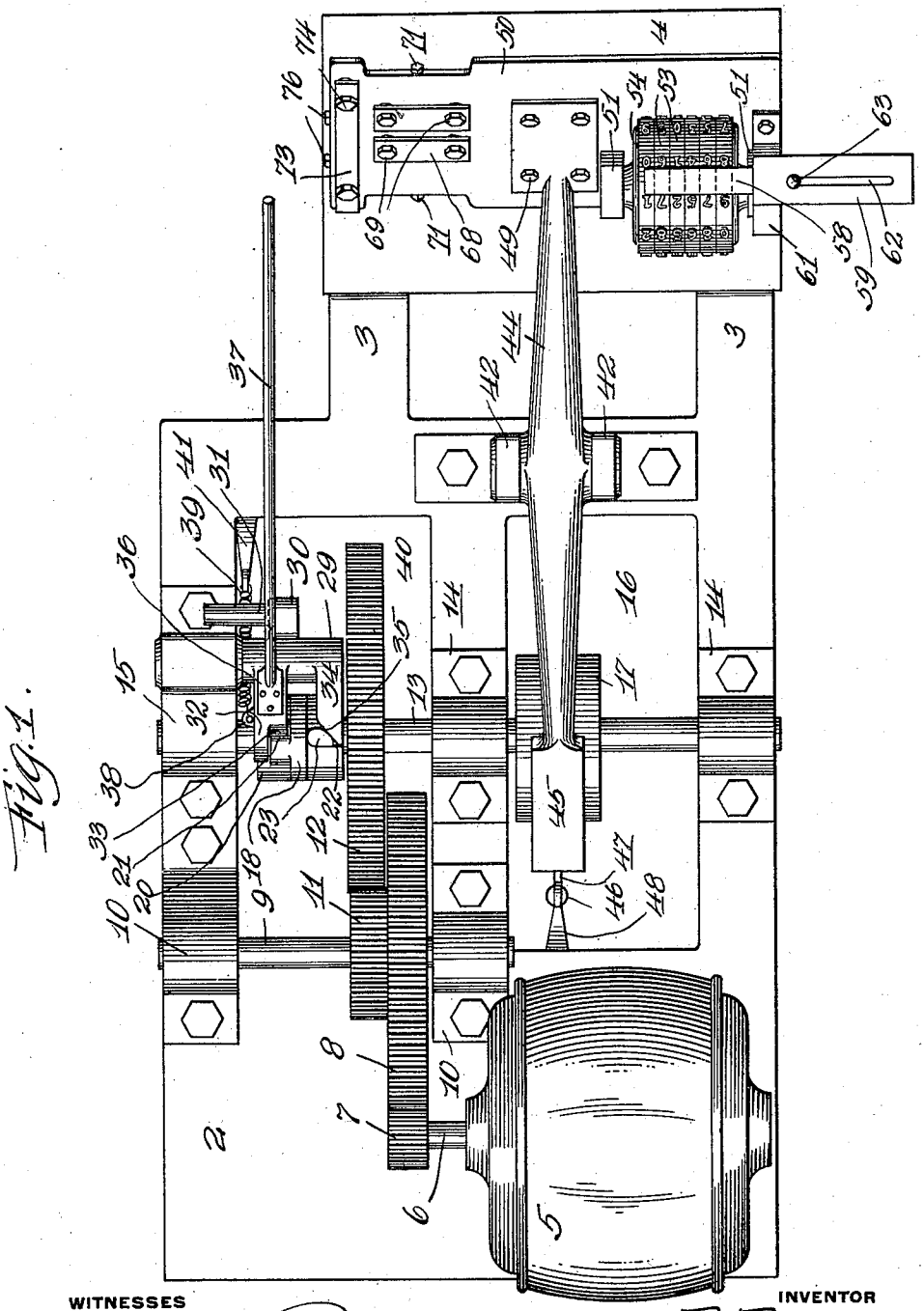


Fig. 1.

WITNESSES

Samuel Payne

K. K. Butler

INVENTOR

R. P. O'BRIEN,

by

Attorneys.

R. P. O'BRIEN.

PRINTING MACHINE.

APPLICATION FILED SEPT. 7, 1910.

982,014. Patented Jan. 17, 1911.

4 SHEETS—SHEET 2.

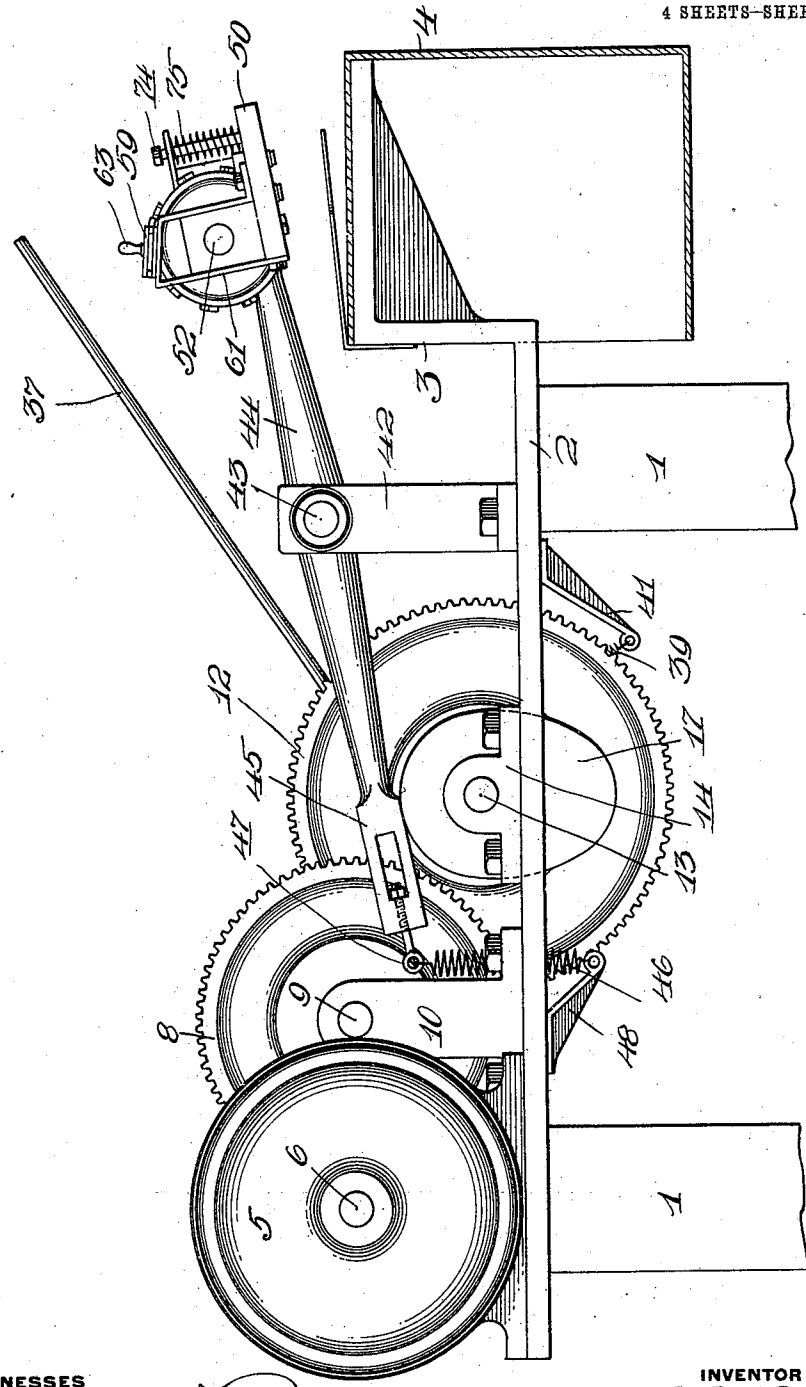


Fig. 2.

WITNESSES

Samuel Payne

K. K. Butler

INVENTOR

R. P. O'BRIEN.

by A. G. Evans & Co. Attorneys

R. P. O'BRIEN.

PRINTING MACHINE.

APPLICATION FILED SEPT. 7, 1910.

982,014. Patented Jan. 17, 1911.

4 SHEETS—SHEET 3.

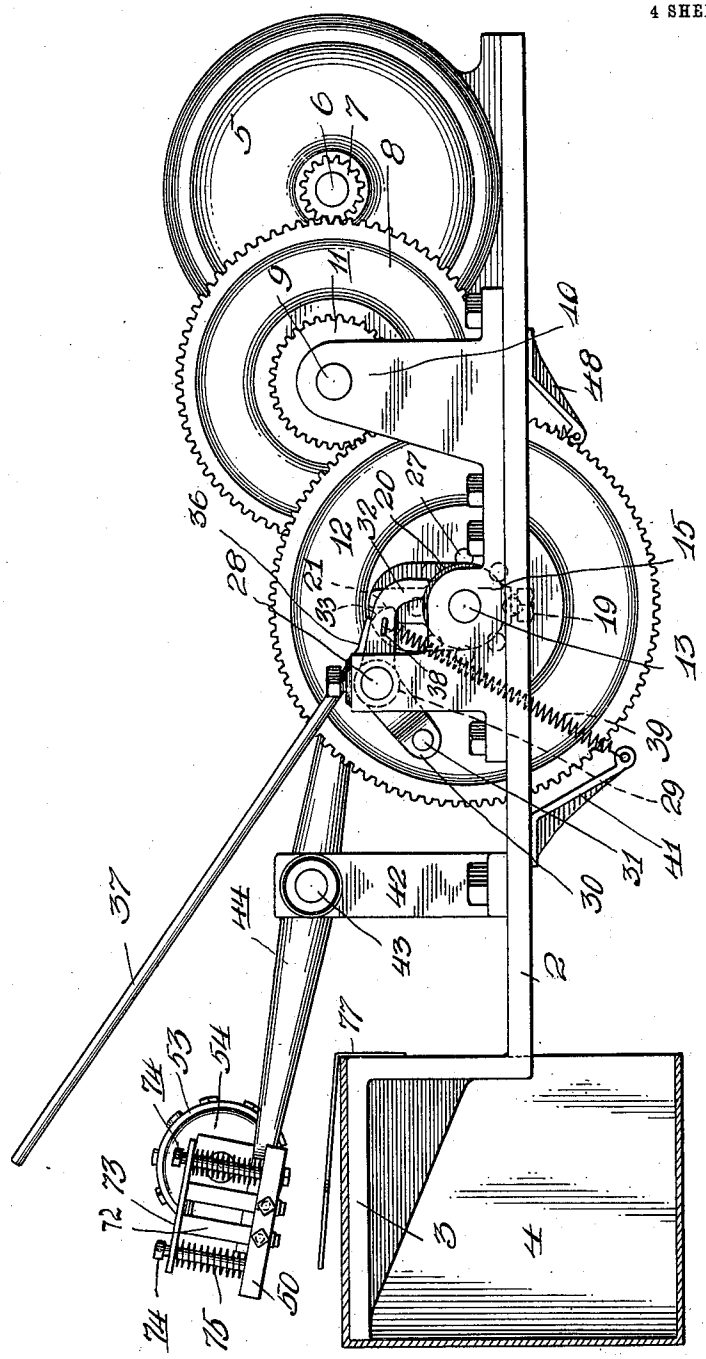


Fig. 3.

WITNESSES

Samuel Payne

R. A. Butler

INVENTOR

R. P. O'BRIEN,

by A. C. Ewert & Co.

Attorneys

R. P. O'BRIEN.

PRINTING MACHINE.

APPLICATION FILED SEPT. 7, 1910.

982,014.

Patented Jan. 17, 1911.

4 SHEETS—SHEET 4.

Fig. 5.

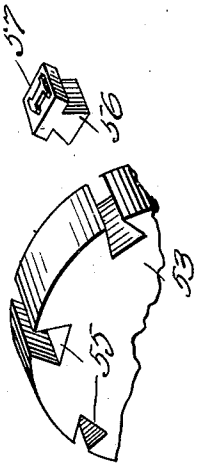


Fig. 7.

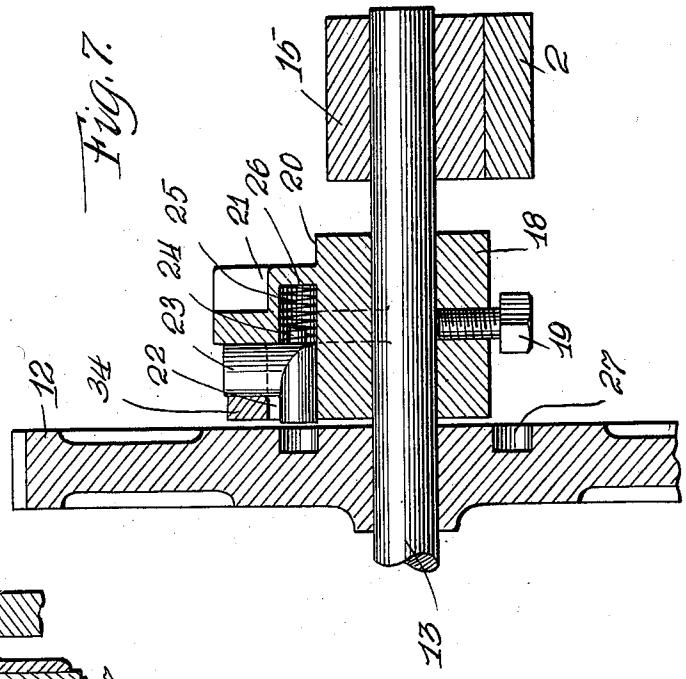


Fig. 4.

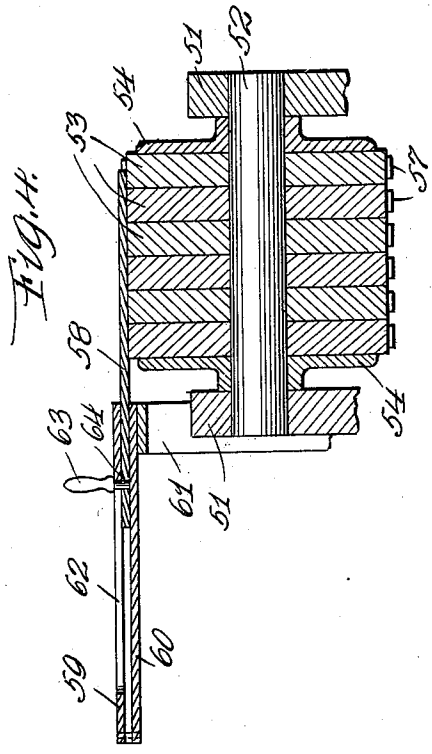
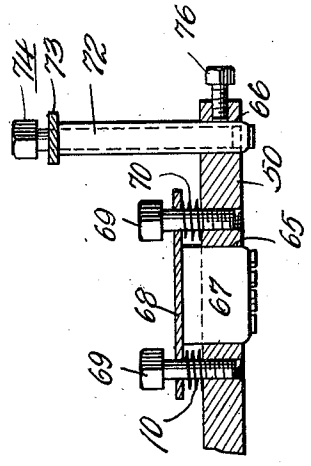


Fig. 6.



WITNESSES

Samuel Payne

R. N. Butler

INVENTOR

R. P. O'BRIEN,

by N. C. Evert Co.

Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT P. O'BRIEN, OF FREEPORT, PENNSYLVANIA.

PRINTING-MACHINE.

982,014. Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed September 7, 1910. Serial No. 580,798.

To all whom it may concern:

Be it known that I, ROBERT P. O'BRIEN, a citizen of the United States of America, residing at Freeport, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Printing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a printing machine especially designed for numbering and marking boxes, for instance boxes containing alcoholic liquors, such as whisky, it being a government requirement that boxes be stenciled, printed or otherwise marked to indicate the time of the year the contents of the boxes were distilled and the time of the year the contents were bottled.

The primary object of the invention is to provide a machine for automatically, expeditiously and economically printing boxes, the machine being designed whereby it can be easily operated to positively mark a box or similar receptacle.

A further object of the invention is to furnish a machine of the above type with a type roll in the manner as hereinafter set forth that permits of the type being easily and quickly changed when the numbering or dating of the machine is to be altered.

With the above and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings forming a part of this specification, wherein there is illustrated a preferred embodiment of the invention; but it is to be understood that the structural elements thereof are susceptible to such changes that are permissible by the scope of the claims appended hereunto.

In the drawings:—Figure 1 is a plan of a machine in accordance with this invention, Fig. 2 is an elevation of one side of the machine, Fig. 3 is an elevation of the opposite side of the machine, Fig. 4 is a longitudinal sectional view of the type roll and the locking device thereof, Fig. 5 is a perspective view of a portion of the roll and one of the types thereof, Fig. 6 is a longitudinal sectional view of a portion of the printing head showing the dating type, and Fig. 7 is a longitudinal sectional view of the clutch forming part of the machine.

Like numerals of reference designate corresponding parts throughout the several views of the drawings.

1 denotes supports for a bed-plate 2, said bed-plate having the forward end thereof provided with elevated brackets 3 upon which is placed the box or receptacle 4 to be printed or marked by the machine.

5 denotes an electrically operated motor mounted upon the rear end of the machine, said motor having the armature shaft 6 thereof provided with a small gear wheel 7 meshing with a large gear wheel 8 mounted upon a shaft 9 journaled in bearings 10, carried by the bed-plate 2.

11 denotes a small gear wheel mounted upon the shaft 9 adjacent to the large gear wheel 8, said gear wheel meshing with a large gear wheel 12 loosely mounted upon a shaft 13, journaled in bearings 14 and 15, carried by the bed-plate 2. The bed-plate 2 between the bearings 14 is provided with an opening 16 and mounted upon the shaft 13 above the opening 16 is a cam 17, the purpose of which will presently appear.

18 denotes a clutch member fixed upon the shaft 13 by a set screw 19 or other fastening means. The clutch member 18 is oval in elevation and has the hub 20 thereof provided with a radially disposed tooth 21, while the opposite side of said member is provided with a slot 22. In the slot 22 is movably mounted an angular pin 23, said pin having the rear side thereof provided with a teat 24 serving functionally as a guide for the coiled compression spring 25, mounted in a socket 26 provided therefor in said member. The ends of the horizontal portion of the pin 23 is adapted to engage in one of a plurality of recesses 27 provided therefor in the face of the loosely mounted gear wheel 12.

28 denotes a shaft mounted in the bearing 15 and journaled upon said shaft is a sleeve 29, said sleeve having a forwardly extending stop 30 provided with a pin 31 to engage the bearing 15, and a rearwardly extending stop 32 adapted to engage the hub 20 of the clutch member 18. The rearwardly extending stop 32 has an integral tooth 33 adapted to engage the tooth 21 of the member 18, and besides these stops, the sleeve 29 has one end thereof provided with

an arm 34 having a beveled end 35 adapted to engage the angular pin 23 and shift said pin. Connected to the rearwardly extending stop 32, as at 36 is a forwardly extending lever 37, the purpose of which will appear in the operation of the machine. The rearwardly extending stop has an apertured lug 38 upon one side thereof to which is connected the upper convolution of a retractile spring 39, said spring extending through an opening 40 in the bed-plate 2 and having the lower convolution thereof connected to an angularly disposed bracket 41, carried by the under side of the bed-plate 2.

The bed-plate 2 adjacent to the opening 16 thereof is provided with uprights 42 and fulcrumed between said uprights by a pin 43 is an arm 44 having the rear end thereof flattened, as at 45 to rest upon the cam 17, the rear end of said arm being normally retained in engagement with the cam 17 through the medium of a coiled retractile spring 46 having the upper convolution thereof connected to an eye-bolt 47 detachably mounted in the flattened end of the arm and the lower convolution connected to an angle bracket 48, carried by the under side of the bed-plate 2, said spring extending through the opening 16 of the bed-plate 2.

The forward end of the arm 44 is connected, as at 49 to a transverse head 50. One end of the head 50 is provided with bearings 51 and mounted in said bearings is a shaft 52. Revolubly mounted upon the shaft 52 is a sectional type roll, comprising disks 53 movably held in engagement with each other by heads 54 mounted upon the shaft 52. Each disk has the periphery thereof provided with transverse dove-tail slots 55 and adapted to engage in said dove-tail slots are the dove-tail tongues 56 of type 57. The sectional type roll is adapted to be held stationary by a slide 58 engaging between two rows of type, as best shown in Fig. 1 of the drawings, said slide being mounted between two guides 59 and 60, mounted upon a strap 61 secured to the head 50 and extending above the outer bearing 51. The guide 59 is longitudinally slotted, as at 62 and the outer end of the slide 58 is provided with a handle 63 having the shank 64 thereof extending through the slot 62 into the slide 58, said handle permitting of the slide 58 being easily moved into and out of engagement with the sectional type roll.

The opposite end of the head 50 is provided with four openings 65 and 66. In the openings 65 are loosely mounted type blocks 67 carried by longitudinal plates 68 slidably mounted upon screw bolts 69 mounted in the head 50, said bolts serving functionally as guides for the plates 68. Encircling the bolts 69 are coiled retractile springs 70 having the lower convolutions thereof connected to the head 50 and the upper convolutions to the under sides of the plates 68. These springs allow the type blocks 67 to yield when brought into engagement with a box or other receptacle, the yielding movement being limited by the heads of the bolts 69. The type blocks 67 can be held stationary by adjusting screws 71 mounted in the forward and rear edges of the head 50.

Movably mounted in the openings 66 are type bars 72 connected to a longitudinal plate 73. This plate has the ends thereof slidably mounted upon screw bolts 74, carried by the head 50 and encircling said screw bolts are coiled retractile springs 75 having the lower convolutions thereof secured to the head 50 and the upper convolutions to the under side of the plate 73. The springs 75 allow the type bars 72 to yield, the yielding movement being limited by the heads of the bolts 74. The type bars can be held stationary by adjusting set screws 76 mounted in the end of the head 50.

A machine constructed as above described operates in the following manner:—Assuming that the motor 5 has been placed in operation, the rotary movement of the armature shaft 6 is transmitted to the loose large gear wheel 12 through the medium of the gear wheels 7, 8 and 11 and the shaft 9, and it is optional with the operator of the lever 37 as to when the arm 44 is to be rocked by the cam 17 to lower the printing head and mark the box or receptacle placed upon the brackets 3. The spring 39 normally retains the lever 37 in an elevated position with the rearwardly extending stop 32 resting upon the hub 20 of the clutch member 18, consequently the elevating movement of the lever 37 is limited. When the lever is in an elevated position the rearwardly extending tooth 33 thereof engages the tooth 21 of the clutch member 18 and holds said member, together with the shaft 13 and the cam 17 stationary. The angular pin 23 is retained out of engagement with the loosely mounted gear wheel 12 by the beveled end 35 of the arm 34 engaging the vertical portion of said pin. When the lever 37 is lowered until the pin 31 engages the bearing 15, the stop 32 and the tooth 33 thereof are elevated releasing the clutch member 18 and as the arm 34 is simultaneously elevated, the vertical portion of the tooth 33 is released allowing the compression spring 25 to immediately shift the horizontal portion of the pin into engagement with the face of the loosely mounted gear wheel, and as long as one of the recesses 27 moves into the path of the pin 23, said pin enters the recess and causes the clutch member 18, shaft 13 and the cam 17 to revolve with the gear wheel. One rotation of the shaft 13 lowers the printing head, causing the sectional type

roll to impinge upon the side of the box or receptacle 4 exposed beneath the printing head. The type roll is provided with type whereby the box or receptacle can be numbered, and simultaneously with the numbering of the box, the same can be dated, the type block 67 marking the box by the season, as "spring" or "fall," while the type bar 72 applies the year to the box, as "'09." It is a well known fact that boxes containing alcoholic liquors are marked to indicate the season and year of distillation and the season and year of bottling, the box having been stenciled or otherwise printed so that it is only necessary to insert the season and the year and to number the box to complete the package.

An ordinary inking roll or pad can be employed for applying ink to the type roll, blocks and bars.

It is obvious that the disks of the sectional type roll can be easily adjusted to present desired numbers, and that when a type is injured it can be easily removed and renewed.

It is preferable to use a resilient plate 77 in connection with the box or receptacle 4 to cover portions thereof during the printing operation, thus preventing the previously marked box or receptacle from being smeared by ink from the type roll.

What I claim is:—

1. A printing machine comprising a bed plate, an article support thereon, a driven shaft journaled upon the base, driving means for said shaft, means for clutching the driving means to said shaft causing thereby the operation of the latter, a cam fixed to the shaft, a spring-controlled arm fulcrumed upon the base and engaged and rocked by said cam, a rectangular head carried by one end of said arm and having a plurality of openings, a sectional type roll supported upon and projecting through one of the openings of the head, spring-controlled type blocks projecting through the other openings of the head, means arranged upon the head for supporting the type blocks, guides projecting outwardly from said head, and a slide supported by the guides and when moved in one direction engaging with the type roll for holding it stationary.

2. A printing machine comprising a bed plate, an article support thereon, a driven shaft journaled upon the base, driving means for said shaft, means for clutching the driving means to said shaft causing thereby the operation of the latter, a cam fixed to the shaft, a spring-controlled arm fulcrumed upon the base and engaged and rocked by said cam, a rectangular head carried by one end of said arm and having a plurality of openings, a sectional type roll supported upon and projecting through one of the openings of the head, spring-controlled type blocks projecting through the other openings of the head, means arranged upon the head for supporting the type blocks, guides projecting outwardly from said head, a slide supported by the guides and when moved in one direction engaging with the type roll for holding it stationary, and means extending in the head and engaging the type blocks for maintaining them stationary.

3. A printing machine comprising a spring-controlled fulcrumed arm, means engaging with one end of said arm for operating it, a head secured to the other end of said arm, a type roll supported upon and extending through said head, spring-controlled type blocks supported upon and projecting through said head, a support upon the head, guides projecting outwardly from said support, a slide supported by the guides and when moved in one direction engaging with the type roll for holding it stationary, and means carried by the head and engaging the type blocks for maintaining them stationary.

In testimony whereof I affix my signature in the presence of two witnesses.

ROBERT P. O'BRIEN.

Witnesses:
K. A. O'Brien,
R. B. McKee.