May 29, 1928. 1,671,343

J. J. CARROLL

ATTACHMENT FOR PRINTING PRESSES

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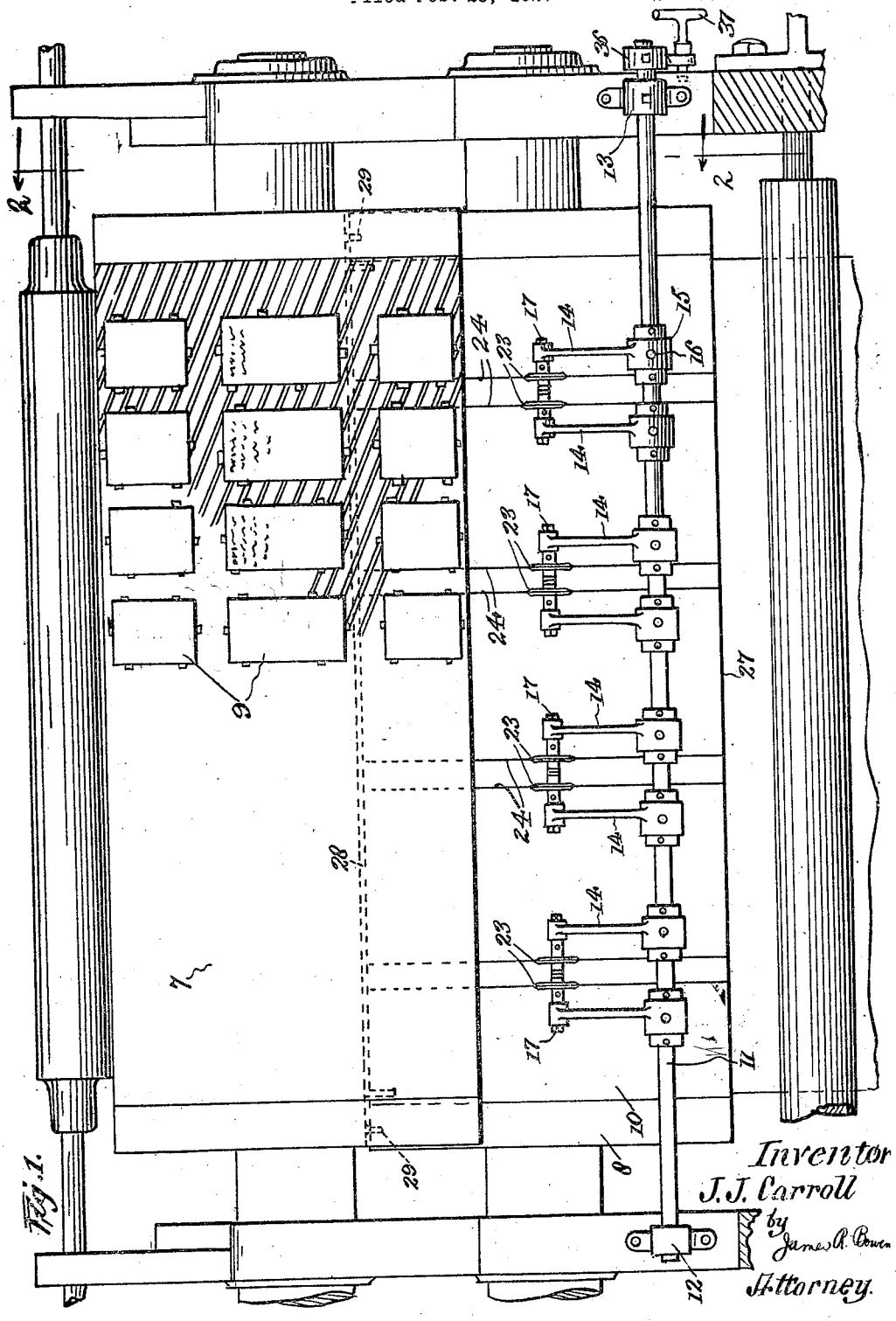


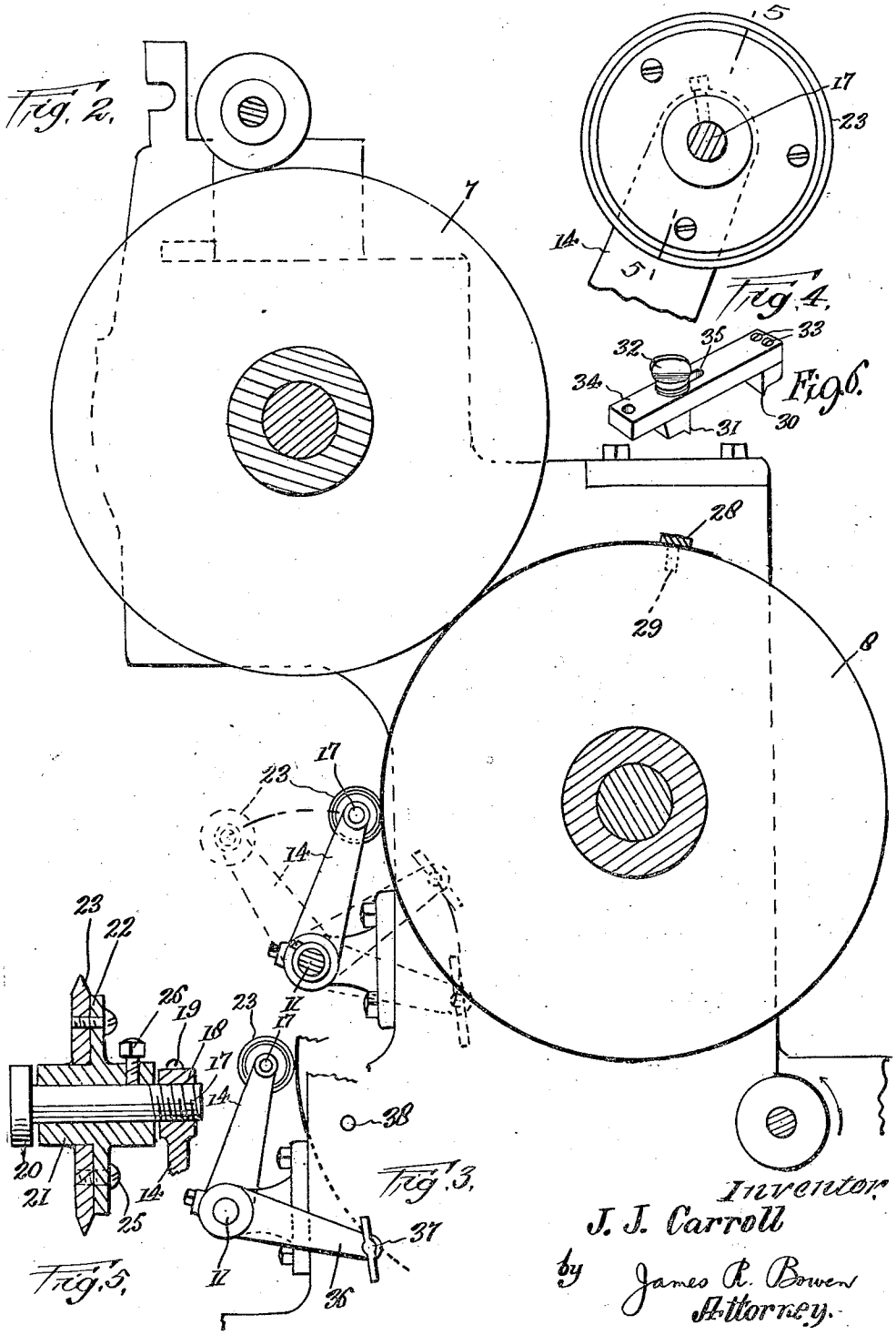
Fig. 1.

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Patented May 29, 1928. 1,671,343

UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR PRINTING PRESSES.

Application filed February 23, 1927. Serial No. 170,290.

The present invention relates to attachments for printing presses and more particularly refers to a device for securing the accurate placement of printing plates whereby the margin spaces extending about the printed text in bound volumes may be uniform and present a neat and attractive appearance.

Heretofore great difficulty has been experienced in securing accurate placement of the plates used in printing and because of inaccurate placement of printing plates discrepancies appear which detract from the appearance of the work. An object of the invention is to provide a device which will avoid such difficulty, which is of a simple and readily operable construction, and which will secure accurate results and be uniformly faithful in its work.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a fragmentary plan view, with parts in section, of a printing press equipped with marking devices;

Figure 2 is a section taken on the line 2—2 in Figure 1;

Figure 3 is a fragmentary side view of a make-ready cylinder and marking means;

Figure 4 is an enlarged side fragmentary view of a supporting arm and marking device;

Figure 5 is a section taken on the line 5—5 in Figure 4; and

Figure 6 is a perspective view of a second form of marking device.

Referring more particularly to the drawings 7 designates a plate cylinder of a printing press and 8 a make-ready cylinder. Heretofore, printing plates, as 9, have been secured to a plate cylinder, as 7, in positions assumed to be approximately correct. The face of a make-ready cylinder, as 8, being covered with paper, the cylinders have been revolved and impressions from the plates 9 on the plate cylinder transferred to the paper on the face of the make-ready cylinder. After adjustments of the plates 9 have been made more impressions are made on paper, with which the make-ready cylinder is faced, in efforts to ascertain whether the plates have been properly adjusted, and the process is continued until what are deemed satisfactory results are obtained. All this takes time and these repeated efforts do not always result in true placement of the plates.

If the pages in a printed volume are held to the light it will be found that in few instances does the lineation on the obverse side of a page register accurately with that on the reverse side, and consequently the margin spaces above, below and at both sides of the pages are not uniform but vary throughout the volume. Thus the inequalities appear in the positions of the printed matter on the pages of the bound volume.

In the drawings I show a shaft 11 mounted in appropriate bearings 12 and 13 secured to the frame work of a press. On this shaft, which is mounted to rock in said bearings 12 and 13, are shown a number of arms 14 carried by hubs 15 affixed to the shaft 11 as by set screws 16, or other appropriate devices which permit of the arms being adjusted both axially along the shaft and angularly or circumferentially about the same. In Figure 5 the arms 14 are shown as adapted to receive stub shafts 17. To this end the arms may be provided with threaded openings 18 for receiving threaded ends of the stub shafts which may be secured against rotation as by set screws 19. The stub shafts 17 are shown as provided with heads 20 for confining in place sleeves, as 21, shown as confined at their other ends by arms 14. The sleeves 21 are shown as carrying webs 22 to which marking wheels or discs 23 are shown as secured. I prefer that these marking wheels be made of a composition of aluminum and lead, but any marking device may be employed which will make a clean clear mark, such as shown at 24 in Figure 1, upon the paper on the face of the make-ready cylinder. Screws or other fastenings 25 are shown passed through the web 22 and into the marking wheels or discs 23. These screws or fastenings 25 serve to hold such discs in place until their renewal is advisable. The sleeve 21 is shown

as held adjustably upon the shaft 17 by a set screw, as 26. As the wheel 23 becomes worn at one point it may be turned by unloosening the set screw, as 26, to expose a fresh portion of the periphery of the wheel 23 to the paper to be marked. The lines 24 will indicate the side lines within which the printing should be done. To mark the top and bottom lines within which the printing should be done a marker such as is shown in Figure 6 may be employed in conjunction with a bar 28. The bar is shown as extending longitudinally along the surface of the make-ready cylinder 8 outside of the paper on the face of the cylinder 8 and may be held in place by set screws, as 29 shown as engaging radially into the cylinder. The marker illustrated in Figure 6 is shown as provided with marking blocks or pencils 30 and 31 held detachably to a connecting piece or handle. The marking block 30 may be held to the handle for instance by the use of set screws, as 33, while the other marking block 31 is shown as carried by a wing screw 32 slidable longitudinally in a slot 35 for the purpose of adjusting the distances between the marking blocks 30 and 31. These blocks 30 and 31 are adapted to straddle the bar 28, as shown in Figure 2, and the marking blocks 30 and 31 may be adjusted up against opposite straight edges of the bar 28 whereby they may be guided by such straight edges. The handle may be moved lengthwise of the bar 28 and lines produced upon the paper on the face of the make-ready cylinder upon both opposite sides of said guide bar 28. The bar may then be removed and placed in position upon another part of the make-ready cylinder, where the operation of transverse marking may be repeated. The marking blocks 30 and 31 may be made of a composition of aluminum and lead, but any marking device may be employed which will yield an impression on the paper on the face of the make-ready cylinder.

When the paper on the face of the make-ready cylinder has been marked by both marking devices it will present the appearance of a series of blocks. The press being placed in operation, the plates 9 on the cylinder 7 will print on the paper on the make-ready cylinder 8: If the plates do not truly register within the blocks the positions of such plates 9 can be adjusted until they print exactly where they are desired to print. After securing this proper position of the plates, the press is ready for the operation of printing and the result will be the production of a sheet in which accurate registration is secured upon both obverse and reverse faces.

The shaft 11 may be provided with an operating arm, as 36, shown as extending at one side thereof and as having a screw shaft 37 with a T-head, such screw shaft being adapted to register with threaded openings, as 38, in the frame, whereby to secure the device either in the operative position shown in full lines in Figures 2 and 3, or in the inoperative position indicated by dotted lines in Figure 2.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of my invention without departing from the spirit thereof.

What is claimed is:—

1. In combination with a make-ready cylinder of a printing press adapted to carry paper thereon on which experimental impressions are made, marking means for marking upon the paper while on the make-ready cylinder outlines within which the experimental impressions are made, and means for supporting said marking means relatively to the make-ready cylinder.

2. In a printing press having a printing cylinder with printing plates adjustable thereon and a make-ready cylinder adapted to carry paper thereon, means for marking said paper on said make-ready cylinder both laterally and longitudinally of said cylinder to produce blocked-off spaces for experimental printing from said plates, and means for supporting the marking means relatively to the make-ready cylinder.

3. In a printing press having a make-ready cylinder, a shaft, means to support the shaft adjacent the cylinder, arms on said shaft, and markers carried on said arms adapted to come in contact with paper on the make-ready cylinder.

4. In a printing press having a make-cylinder adapted to support paper on which experimental impressions are made, a rock shaft, means to support the rock shaft adjacent the cylinder, means for shifting said rock shaft and for securing it in operative or inoperative positions, and markers carried by said rock shaft and adapted to engage the paper on the make-ready cylinder.

5. In a printing press having a make-ready cylinder adapted to support paper, a rock shaft, means for journaling said rock shaft adjacent the cylinder, means for angularly moving said rock shaft, arms on said rock shaft adjustable both axially and angularly of the rock shaft, and adjustable markers carried by said arms for engaging the paper on the make-ready cylinder.

6. In a printing press having a make-ready cylinder adapted to support paper, supporting means adjacent the cylinder, an arm adjustably mounted on said supporting means, a stub shaft carried by said arm, a sleeve adjustably carried by said stub arm, and a marker carried by said sleeve.

7. For use in a printing press having a make-ready cylinder adapted to support paper, a bar removably carried by said cylinder, and a marking device for marking the paper upon the cylinder and for cooperating with the bar, said marking device including a connecting piece for straddling said bar, and spaced markers carried by said connecting piece.

8. For use in a printing press having a make-ready cylinder adapted to support paper, a bar removably affixed to the cylinder and extending substantially in the direction of the axis of the cylinder, and a marking device cooperating with the bar for producing lines on the paper at opposite sides of the bar, said marking device comprising a connecting piece for straddling the bar, and relatively adjustable markers carried by said connecting piece and adapted to move simultaneously along opposite side edges of said bar.

In testimony whereof I affix my signature.

JOSEPH J. CARROLL.