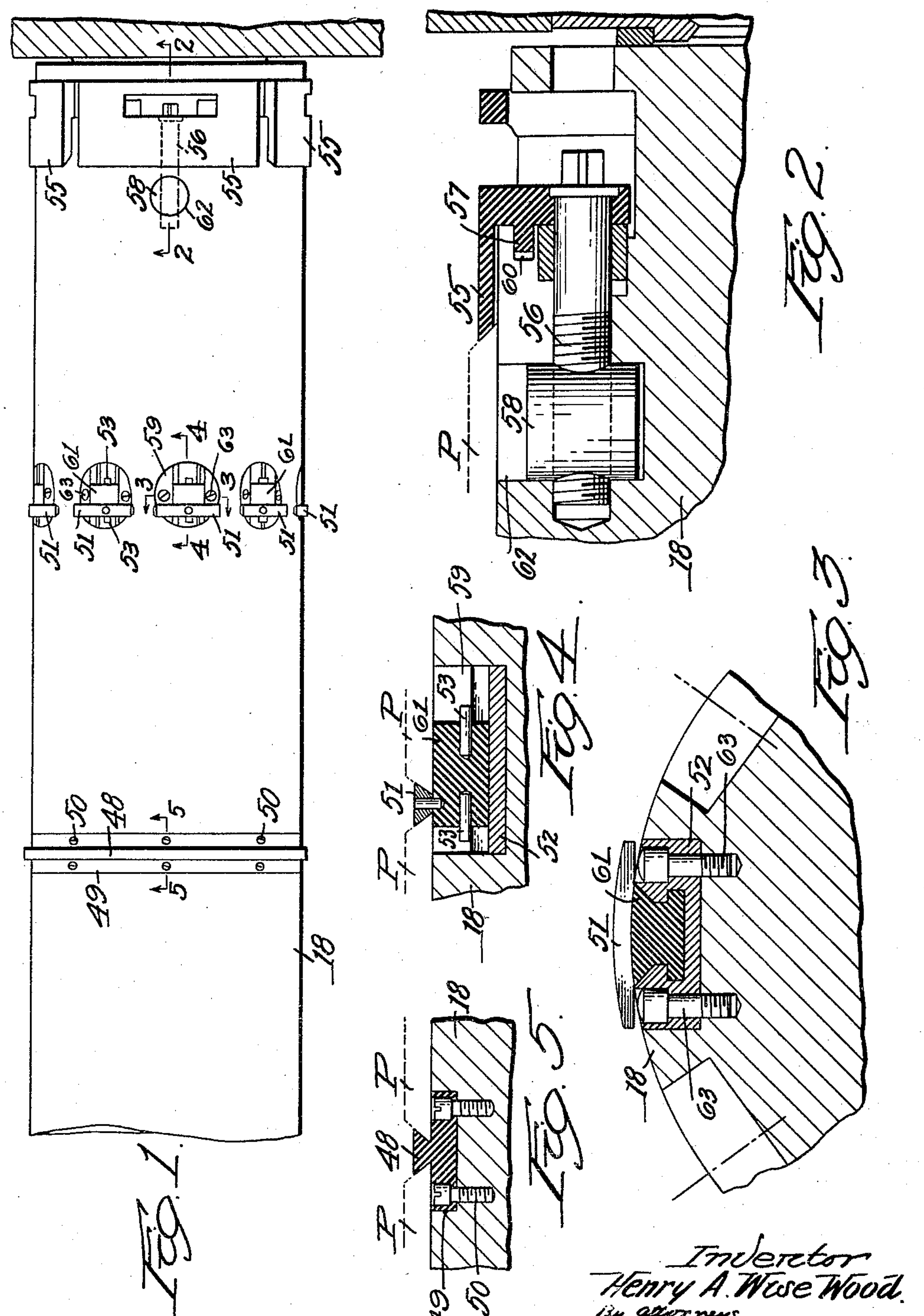
Aug. 23, 1932. H. A. W. WOOD 1,873,233

PLATE CARRYING CYLINDER

Original Filed May 26, 1926



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Patented Aug. 23, 1932 1,873,233

UNITED STATES PATENT OFFICE

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PLATE CARRYING CYLINDER

Original application filed May 26, 1926, Serial No. 111,787. Divided and this application filed April 6, 1929, Serial No. 353,199. Renewed June 10, 1932.

This is a division of my application Serial No. 111,787, filed May 26, 1926.

The principal objects of this invention are to materially reduce the expense of preparing the plate cylinder for the clamps and clips; to provide an arrangement of clips on the plate cylinder that will permit the printing of the product with as narrow a margin as may be desired, and to provide a plate cylinder with as few recesses as possible to secure a more solid support for the plates.

Other objects and advantages of the invention will be described hereinafter.

Reference is to be had to the accompanying drawing in which

Fig. 1 is a plan of the plate cylinder showing a preferred form of this invention;

Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1 on an enlarged scale, and

Figs. 3, 4 and 5 are similar enlarged sectional views on the lines 3—3, 4—4 and 5—5 in Fig. 1.

It is customary to mill in the plate cylinder long T-headed slots in which the plate clamps move, which is a very expensive operation. I reduce this expense by merely driving round holes for the clips, round holes for the clamps, and turn slots on the ends of the cylinders for receiving a tongue on the end clamp.

Fig. 1 shows one-half of a cylinder, the other half being identical therewith. It is to be seen that in the center of the cylinder is fastened a margin ring 48. This is of dove-tail section to hold two sets of plates P on opposite sides. It is provided with a base ring 49 sunk down into the cylinder so that the screws 50 for holding the margin ring are not in the plate holding section which projects beyond the cylinder. By providing a groove around the cylinder for the base of this ring, the raised portion of the ring is independent of the diameter or length of the screw heads so that as narrow a margin as may be desired may be had by thinning the projection down to its lowest possible dimension.

The intermediate dove-tail clips 51 are of short length and each cylindrical clip holder 52 is let into a round recess 59 driven or bored in the cylinder adjacent to the margin of a plate. These holders have diametrical ways on which the base portions of the clips are moved by the clamping of the plate by the screw 56, of the plate. The clip is held in position by pins projecting into the base portion 61. The latter is limited in position by two stop pins 53 projecting in opposite directions against the wall of the recess 59 in which the same is located. The holders 52 are secured in place by screws 63.

The end clip or ring 55 is made up of segments which in the form indicated, occupy one quarter of a full circle each. Therefore, two of these segments hold the end of each plate but each segment is operated by a single screw 56. Each segment is provided with a lip 57 which enters an annular groove 60 turned all around in the end of the cylinder 18. This is for guiding the clip and also preventing its lifting under pressure. The clamp screw 56 is threaded in a round nut 58 which is dropped into a circular hole 62 driven or bored in the cylinder. The screw has a square end and there is space enough to reach it for operation.

The construction of these clips provides a plate cylinder with as few recesses as possible. This furnishes a more solid support than usual for each plate. By housing the clamps 58 and clips 52 in round holes bored into the cylinder a material saving over the old method of milling grooves for them is effected.

Although I have illustrated and described only one form of the invention I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited in this respect but what I claim is:—

1. A printing plate cylinder having a series of round recesses bored into it between two plates on the cylinder, a plate clip having a cylindrical holder set into each of said recesses, said holder having guides in which the clip is adapted to move freely in a longitudinal direction and means projecting from

both ends of the base of the clip for limiting its longitudinal motion in said recesses.

2. As an article of manufacture, a plate cylinder for a printing press, having a circular groove around it at the center, a series of recesses spaced from each other around its circumference half way between the center groove and the ends of the cylinder, and recesses at each end, cylindrical in form for use in fastening the end clips.

3. As an article of manufacture, a plate cylinder for a printing press, having a circular groove around it at the center, a circular groove around it extending in on each end surface for holding the plate clip, a series of recesses spaced from each other around its circumference on each side of the center groove and half way between the center groove and the ends of the cylinder, and recesses at each end, cylindrical in form for use in fastening the end clips.

4. The combination with a printing plate cylinder, of a center margin ring extending entirely around the cylinder and having a dovetail shaped cross section and held in place by means below the surface of the cylinder, said cylinder having a series of recesses spaced from each other around its circumference between the center margin ring and the end of the cylinder, of a series of center clips, each set into a recess in the cylinder, end clips in the form of quarter sections, and means located below the surface of the cylinder for fastening adjacent end ring sections on the cylinder.

5. A printing plate cylinder having round recesses bored radially therein near the ends, cylindrical nuts set into said recesses, end plate clamps adjacent to the nuts and clamping screws extending longitudinally of the cylinder for connecting the clamps with the nuts.

6. The combination with a printing plate cylinder and an end clip for engaging the ends of the printing plates having a plate engaging projection, of means for holding the end clip in position comprising a cylindrical nut, and a screw projecting longitudinally from the end clip into said nut for tightening the clip in place, the cylinder having a cylindrical recess in its surface for receiving said nut.

7. The combination with a printing plate cylinder, of an end clip for engaging the ends of the printing plates having a plate engaging projection and a lip projecting inwardly, spaced from said projection, the cylinder having a circular end groove for receiving said lip, whereby the clip will not lift under heavy pressure.

8. The combination with a printing plate cylinder having recesses in its surface, of a series of intermediate clip holders sunk into said recesses and provided with dovetail clips projecting above the surface of the cylinder for holding the ends of two plates, and stop pins on the opposite ends of the clip holders for limiting their motion in the recesses.

In testimony whereof I have hereunto affixed my signature.

HENRY A. WISE WOOD.