A. TERREY

ROTORRY PRINTING PRESS

Filed July 29, 1922

2 sheets - sheet 1

Fig. I.

f

m

s

n

k

Inventor:
A. Terrey
by
Attorney.
To all whom it may concern:

Be it known that I, ARTHUR TERREY, a subject of the King of Great Britain and Ireland, residing at 26 Keith Road, Hayes, Middlesex, England, have invented certain new and useful Improvements Relating to Rotary Printing Presses, of which the following is a specification.

This invention relates to transmission gear for rotary printing presses involving the use of driving worms which engage worm wheels or spiral toothed or helical wheels on the plate and impression cylinders, ink distributing drums and other moving elements of the respective printing sets in a rotary printing press.

According to the invention the worm is provided with threads of such an angle and pitch as to permit of the worms being rotated by the worm wheels so that thus on reducing the speed of the driving element, the plate and impression cylinders, ink distributing drums and other moving elements may continue their movement under their own inertia. Thus there is no lock and their movement is not suddenly arrested by the worms, but a certain resistance is offered through the worms in “slowing down” and thus each constitutes a brake by which the respective rotating elements driven from the worms are brought to rest.

It will be understood that the invention may be applied in the use of spiral toothed or helical wheels in which the threads are similarly provided of such an angle and pitch as to permit of the reverse driving of the worm wheels from the worms in the reduction of speed of the press and in “slowing down.”

The invention is illustrated by way of example in the accompanying drawings in which—

Figure 1 is an elevation partly in section, and Figure 2 a side elevation partly in section of a worm and worm wheel drive for the plate and impression cylinders and ink distributing drums for a rotary printing press.

In the drawings a represents the impression cylinder, b the plate cylinder, c the distributing drum, d the ink transfer roller by which ink from the distributing drum is fed to the plate cylinder, e is a horizontally disposed shaft on which worms f and g are mounted for engagement respectively with the worm wheel f upon the spindle of the impression cylinder a and the worm g upon the spindle of the plate cylinder b respectively. The teeth of the respective worms and worm wheels are disposed at a considerable angle such as illustrated to permit of the reverse driving of the worm wheels from the worms in the reduction of speed of the press and in slowing down. Movement may be imparted to the spindle e directly from one of the press motors or from the gear of the press. A vertical spindle h is also provided having worms i and j mounted thereon for engagement respectively with the worm wheels g upon the spindle of the plate cylinder and with the worm wheel k mounted upon the spindle of the distributing drum e respectively.

It will be understood that the angle of the teeth of the wheels i and j and of the worm wheel k is the same as that of the worms f and g and of the worm wheels f and g respectively and it will be understood that the drive may be imparted through the vertical spindle h.

In the illustrated construction the worm f and worm wheel f are mounted within a casing l, the worms g and i and the worm wheel g within a casing m while the worm j and the worm wheel k are mounted within a casing n.

Beside each worm a conical bearing ring o is secured upon the worm spindle by which the worm spindle may be supported at each side of the worm within bearing rings p carried within circular caps or fittings q. A series of conical rollers r are interposed between the rings o and p respectively. The adjacent casings l, m and n are completely enclosed and are in communication whereby lubricating oil may be circulated in series through the respective adjacent casings. For example the adjacent circular caps or fittings q disposed between the worms f and g are provided to fit one within the other and an annular space s is advantageously left through which the lubricant may pass from the casing l to the casing m while between the casing m and casing n the spindle h may be surrounded by a tube t leaving an annular space s between the spindle h and the tube t through which the lubricant may flow into the casing n while similarly a tube t may be provided to surround that part of the spindle h that extends beneath the casing n and in a similar way the circuit for lubricating oil may be completed by connecting
the respective casings together in a manner described in the specification of a co-pending application.

The angle of the threads in the worm and worm wheel may advantageously be 31°.

I claim:

1. A rotary printing press comprising an impression cylinder and a plate cylinder, a worm wheel on each cylinder, a plurality of shafts having worms thereon meshing with the worm wheel on the plate cylinder, a distributing drum having a worm wheel thereon, and a worm on each shaft meshing with the worm wheels on the distributing drum and impression cylinder respectively, the said worms and worm wheels having threads of such a pitch as to permit of reversed driving of the worm wheels from the worms in reducing the speed of the press or slowing down.

2. A rotary printing press comprising an impression cylinder and a plate cylinder, a worm wheel on each cylinder, a horizontal shaft interposed between the cylinders and having spaced worms thereon meshing with the worm wheels on the cylinders, a distributing drum having a worm wheel thereon, a vertical shaft provided with worms thereon meshing with the worm wheels on the distributing drum and plate cylinder, the said worms and worm wheels having threads of such a pitch as to permit of reverse driving of the worm wheel from the worms in reducing the speed of the press or slowing down, and casings surrounding the worm wheels, worms and shafts and in communication whereby lubricant may be circulated in series through the respective adjacent casings.

ARTHUR TERREY.