

No. 869,667.

PATENTED OCT. 29, 1907.

A. K. TAYLOR.
PRINTING PRESS.
APPLICATION FILED JAN. 30, 1907.

Fig. 1.

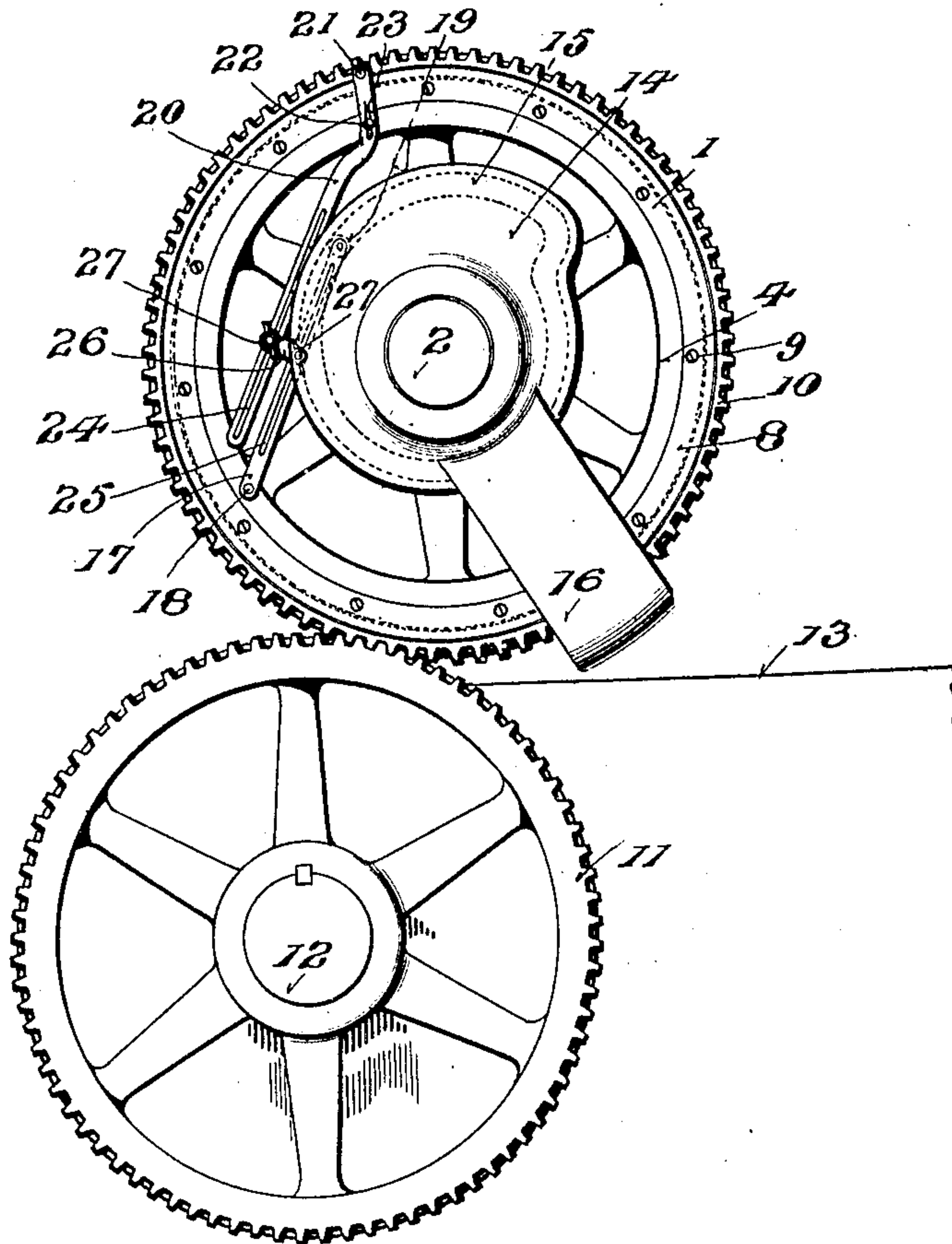
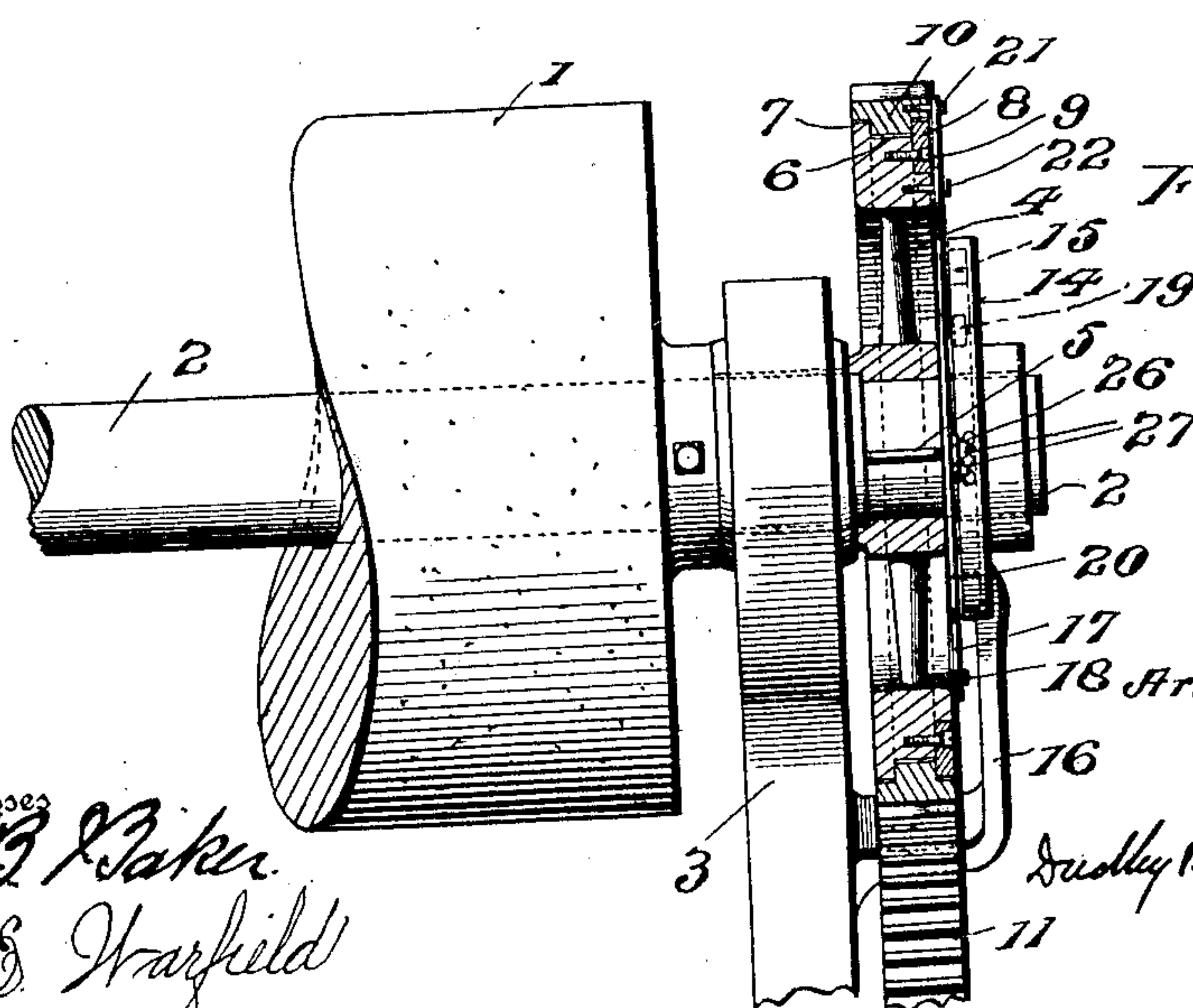


Fig. 2.



Inventor

Arthur K. Taylor.

By

Dudley Browne Phelps.

Attorneys

Witnesses

L. B. Baker.
E. C. Warfield.

UNITED STATES PATENT OFFICE.

ARTHUR KIRKBRIDE TAYLOR, OF ROLAND PARK, MARYLAND, ASSIGNOR OF ONE-HALF
TO HARRY T. ANDERSON, OF BALTIMORE, MARYLAND.

PRINTING-PRESS.

No. 869,667.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR KIRKBRIDE TAYLOR, a citizen of the United States, residing at Roland Park, in the county of Baltimore and State of Maryland, have
5 invented new and useful Improvements in Printing-Presses, of which the following is a specification.

My invention relates to certain new and useful improvements in printing presses.

As is well known when an impression cylinder is
0 over-packed, which sometimes occurs accidentally, and is sometimes done in order to obtain a heavy impression, the peripheral speed of the cylinder is greater than the peripheral speed of the form cylinder in a rotary press or the surface speed of the bed in a bed and cylinder
5 press and the result is a drag on the form.

The object of my invention is to overcome this drag and make the impression surface run at the same peripheral speed whether it is over-packed or not. This I accomplish by providing means adapted to cause a
10 relative peripheral movement between the impression cylinder and its gear during the time the impression is being made.

In the ordinary press construction, the driving gear for the impression surface is constructed to drive the impression surface at a surface speed equal to the surface speed of the printing surface when the impression cylinder has been packed to a certain fixed height. Consequently, if the impression cylinder is over-packed and thus given a diameter larger than its normal diameter the peripheral speed of the impression surface will be increased and as the surface speed of the form remains normal, there will be a drag produced upon the form. This drag in some cases is sufficient to tear the packing off the impression cylinder and, where a flat form is used, it will sometimes work the type and slugs of the form off their feet. This I overcome by providing the driving gear of the impression cylinder with a means whereby the peripheral speed of the impression cylinder and its gear may be varied in relation to each other during the time of impression and thus compensate for the enlarged diameter of the impression cylinder. By this means the impression cylinder is caused to move at its normal peripheral speed, although its diameter has been increased by over-packing.

Referring to the drawings wherein I show one embodiment of my invention and wherein the same part is designated by the same reference numeral wherever it occurs, Figure 1 is a side elevation of a portion of a printing press provided with my invention, only sufficient of the press being shown to illustrate the application of my invention thereto. Fig. 2 is a front elevation of one end of an impression cylinder the driving gear being shown in section.

1 designates an impression cylinder of any usual or desired type of press and 2 the shaft on which the cylinder is mounted. 55

3 designates a portion of the frame provided with a bearing for one end of the shaft 2. 4 designates a wheel which, as shown, is keyed to the shaft 2 outside the portion 3 of the frame by means of the key 5. This wheel
60 takes the place of and may be substituted for the ordinary gear wheel by means of which the impression cylinder is driven. This wheel is shown as provided with a way 6 formed in its periphery, the way having on one side a shoulder 7 formed integral with the wheel, the
65 other side of the way being formed by a removable ring 8 secured in position by means of the screws 9, the ring forming a second shoulder opposite the shoulder 7. 10 designates a rim which is mounted in the way 6 and is adapted to rotate in the way independently of the
70 wheel, the rim being held in position between the shoulders. This rim is provided on its periphery with gear teeth which are adapted to mesh with the teeth of a driving gear 11 mounted on the shaft 12, the driving gear 11 of the shaft 12 being of any ordinary construction. In a rotary press, the shaft 12 would carry the form cylinder and in a flat bed press the shaft 12 and gear 11 would form part of the driving mechanism of the press. In Fig. 1 I have indicated by the line 13 a portion of the bed of a flat bed press. 80

The wheel 4 with its toothed rim 10 forms the driving gear for the impression cylinder and I provide a means for giving the wheel 4 a peripheral movement in relation to the toothed rim. In the form of my invention shown, this means consists of a cam 14 provided with
85 an internal cam groove 15, the cam being shown as mounted on the bracket 16 extending out from the side frame 3. 17 designates a lever one end of which is pivoted at 18 to the wheel 4, the other end being provided with a cam roller 19 running in the cam groove 15. 20
90 designates a second lever, one end of which is pivoted by the pin 21 to the toothed rim 10 and 22 is a stud projecting out from the wheel 4, and passing through a slot 23 in the lever. Adjacent the free end of the lever 20 is formed a long slot 24 and the lever 17 is provided
95 with a slot 25.

26 designates a link which is adapted to connect the levers 17 and 20, the connection being formed, in the construction shown, by means of the bolts 27 having suitable wing nuts. It will be seen from Fig. 1 that the
100 levers 17 and 20 lie substantially parallel and that by adjusting the link 26, the throw given the levers may be varied by varying the point of connection between it and the lever 17. This adjustment will vary the amount of movement between the toothed rim 10 and
105 the wheel 4. As the wheel 4 rotates in unison with the

impression cylinder, it will be seen that moving the wheel 4 in relation to the rim 10 will give the impression cylinder a peripheral adjustment in relation to the periphery of the rim 10 and consequently will vary the peripheral speed of the impression cylinder in relation to the peripheral speed of the toothed rim. It is of course apparent in a rotary press this mechanism could be placed upon the plate cylinder and accomplish the same result.

- 10 In the operation of my invention when it has been found that the impression cylinder is over-packed the link 26 is so adjusted on the levers 17 and 20 as to give the lever 20 such a throw that it will move the impression cylinder forward during the time of impression an amount which will slow down the peripheral speed of the impression cylinder to the surface speed of the form. It will be noted that the cam is so constructed as to effect this movement gradually during the time of impression and then by the quick drop of the cam move the impression cylinder back to its normal position and retain it there until just prior to the time of the next impression. By this construction, it will be seen that the impression cylinder can be caused to move at the same peripheral speed as the surface speed of the form even when it has been greatly over packed. When the impression cylinder is packed to its normal height the device is, of course, locked in inoperative position.

While I have described what I believe to be the preferred form of my invention, I desire to have it understood that many changes may be made in the form, construction and arrangement of parts without departing from the spirit of my invention.

What I claim as new and desire to secure by Letters Patent is:—

- 35 1. In a printing press, the combination with an impression surface, and a printing surface, of gearing connecting the two surfaces and positively operating means which

will vary the peripheral speed of one surface in relation to its gear during the time of impression.

2. An impression cylinder provided with a gear and positively operating means to cause a relative peripheral movement between the impression cylinder and gear during the rotation of the cylinder.

3. In a printing press, the combination with an impression cylinder provided with a driving gear, of a printing surface driven in unison with said gear and positively operating means to cause a relative peripheral movement between the impression cylinder and its gear during the time of impression.

4. In a printing press, the combination with a wheel, of a rim mounted on the wheel, a lever connecting the rim and wheel, means for operating the lever whereby the wheel and rim may be given a peripheral movement in relation to each other and driving means connected to the rim.

5. In a printing press, the combination with a wheel, of a toothed rim loosely mounted on the wheel, a lever connected to the wheel and rim, a stationary cam adapted to operate the lever whereby the wheel is given a peripheral movement in relation to the rim and a driving gear connected to the rim.

6. In a printing press, the combination with a wheel, of a toothed rim loosely mounted on the wheel, a lever connected to the wheel, a second lever connected to the wheel and rim, a link connecting the free ends of said two levers, a stationary cam adapted to operate said first lever whereby the wheel is given a peripheral movement in relation to the rim and a driving gear connected to the rim.

7. In a printing press, the combination with a wheel, of a rim loosely mounted thereon, a lever connecting the rim and wheel, a second lever pivoted at one end to the wheel, an adjustable link connection between said two levers, a stationary cam for operating said second mentioned lever whereby said first mentioned lever will give the wheel a peripheral movement in relation to the rim, the amount of movement being dependent upon the adjustment of said link, and means for driving the rim.

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

ARTHUR KIRKBRIDE TAYLOR.

Witnesses:

FRANCIS M. PHELPS,
F. L. BROWNE.