No. 679,453.

Patented July 30, 1901.

E. CARLSON.

PRINTING PRESS.

(Application filed Nov. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.

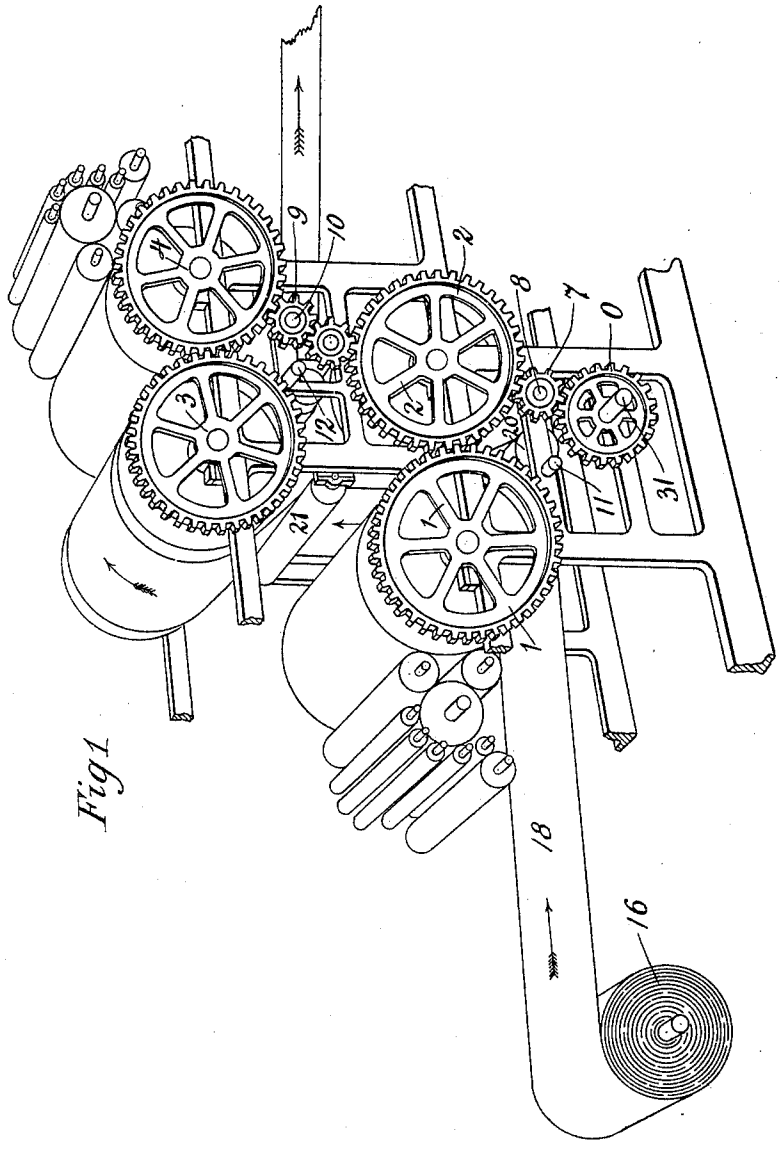


Fig 1

Witnesses
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(No Model.)

2 Sheets—Sheet 2.

Fig. 2

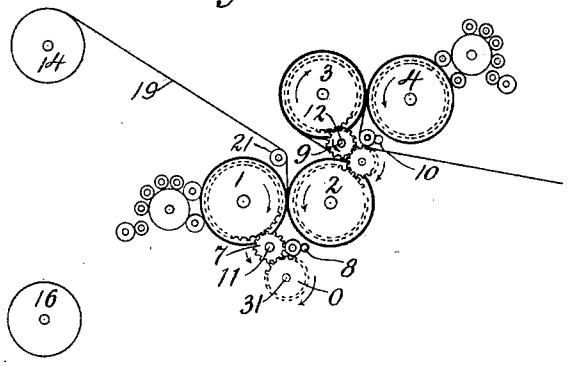
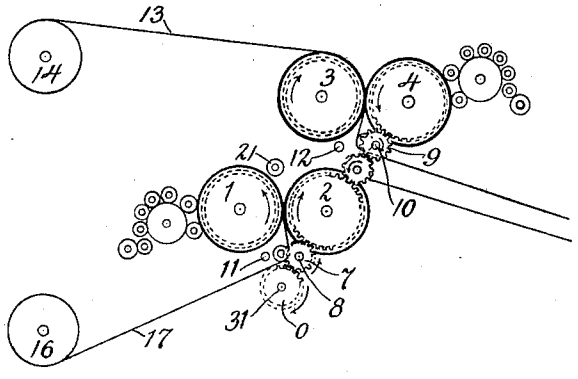


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

EMANUEL CARLSON, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOHN KAHN, OF SAME PLACE.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 679,453, dated July 30, 1901.

Application filed November 5, 1900. Serial No. 35,568. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL CARLSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Printing-Presses, of which the following is a specification.

My invention relates to printing-presses used for printing on both sides of a continuous roll or sheet of paper and to presses used to print different colors on the same sheet; and the object of my invention is to improve the press so that printing can be done on one or both sides of the sheet, as desired, or in one or two colors on the same side of the sheet without running it through the press a second time.

My invention consists in providing an interchangeable intermediate gear that can be removed from one set of studs to another set, and thereby reverse the movement of the rolls, and thereby impart greater range of usefulness and capacity to a printing-press.

I accomplish the above object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the rolls of an ordinary printing-press and their operative connections with my improvement in place thereon, showing the press geared and the web-lead for printing two colors on one side of the web. Fig. 2 shows the rolls geared in condition to print on both sides of the web. Fig. 3 shows the rolls geared and in condition to print two webs at the same time.

Referring to Fig. 1 in the drawings, O is the spur-gear keyed onto the driving-shaft 31, from which power is obtained. This is transmitted to the different rolls through the intermediate spur-gear 7, mounted on the stud 8. The intermediate spur-gear 9 is mounted on the stud 10, and when in this position the press will print two colors on one side of the sheet or web 18, which will be led through the rolls in the direction indicated by the arrows marked thereon. When it is desired to print on both sides of the web, the intermediate gears 7 and 9 are removed from the studs 8 and 10, as shown in Fig. 1, to the studs 11 and 12, as shown in Fig. 2. By means of this latter arrangement a change in the direction of rotation of the printing-cylinder is effected, or, in other words, the direction of rotation of the printing-cylinder is reversed. When the press is geared in the position shown in Fig. 3, the webs can be fed from rolls 14 and 16 at the same time, plainly indicated by the lead of the web shown thereon. The gears 2 and 3 are attached to the blanket-cylinders, and the gears 1 and 4 are attached to the plate-cylinders.

By my very simple improvement placed on a printing-press it will be seen that I can print from a continuous roll of paper on one side or on two sides, the same as a newspaper-press, or print from one continuous roll on one side one or two colors, or print from two rolls at the same time on one side. I have not described the operation of printing on an ordinary printing-press, nor have I entered into a detailed description of the various parts of a printing-press, but have limited my description and drawings to so much of the press as is necessary to show my improvement attached thereto and no more.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a printing-press, the combination with printing and impression cylinders and gearing for revolving the cylinders, of a plurality of pairs of studs mounted on the machine-frame, and removable spur-gears adapted to be placed on one stud or the other of each pair of studs to change the direction of rotation of the cylinders.

2. The combination in a printing-press, comprising printing and impression cylinders, and gearing for revolving the cylinders, of a device for effecting a change in the direction of motion of the cylinders, the device comprising a plurality of pairs of studs projecting from the frame of the press, spur-gears adapted to be removably secured on either one of each pair of studs, the spur-gears intermeshing with the gears on one or the other of the cylinders, and effecting the desired change in the rotation of the cylinders.

3. The combination in a printing-press, comprising printing and impression cylinders, and gearing for revolving the cylinders, of a device for effecting a change in the direction of

motion of the cylinders, the device comprising a plurality of pairs of studs projecting from the frame of the press, a pair of spur-gears adapted to be removably secured on a single one of each pair of studs, the studs being spaced apart so that when the spur-gears are on a single one of each pair of studs they will mesh with the gear-wheel on one of the cylinders and when the spur-gears are on the other one of each pair of studs, they will engage the teeth of the gear-wheel on the other of said cylinders.

4. The combination with a printing-press, for printing on one or both sides of a web, or for printing on a plurality of webs at the same time, or for printing one or more colors on the same web, printing and impression cylinders, and gearing for actuating the cylinders, of two pairs of studs arranged in the path of the gearing, each pair of studs arranged to removably receive a spur-gear, the spur-gear adapted to engage the teeth of the gear on one cylinder when on one stud and when on the other stud adapted to mesh with the gear on the other cylinder whereby to reverse the direction of rotation of the cylinders and thereby permit the printing of a plurality of colors on one web without running the web through the press more than once, and means for feeding the web through the couples.

5. In a printing-press, the combination with impression and printing cylinders and gearing on the rollers whereby they may be revolved, of a power-shaft for communicating motion to the cylinders, a plurality of pairs of studs on the frame of the press, spur-gears removably received upon either one or the other stud composing each pair, and transmitting the power from the power-shaft to the cylinders, the spur-gears engaging the gear-wheels on the impression-cylinders when on one stud, to drive them forward, and meshing with the teeth of the gearing on the printing-cylinders when on the other stud, whereby the direction of rotation of the cylinders is reversed.

6. In a printing-press, the combination with a plurality of printing and impression cylinders, gearing for revolving them and a power-shaft, of a plurality of pairs of studs arranged in the path of the gearing, and spur-gears removably mounted upon one or the other of the studs of each pair to engage one or the other of the gears on the cylinders whereby the direction of rotation of the cylinders may be reversed, to permit the printing of a plurality of colors on the same side of a web without running the web through the press more than once, and means for leading the web through the couples.

7. The herein-described device for changing the direction of motion of the cylinder in a printing-press comprising a plurality of pairs of studs projecting from the frame of the press, spur-gears removably secured upon one or the other of the members of each pair of studs, the studs being spaced apart so as to bring the studs into mesh with gearing on one or the other of the printing and impression cylinders, whereby the direction of motion of the cylinders may be reversed by placing the studs on one or the other member of each pair of studs, and means for feeding the web through the couples.

In witness that I claim the foregoing I have hereunto subscribed my name this 29th day of October, 1900.

EMANUEL CARLSON.

Witnesses:
G. E. HARPHAM,
HENRY T. HAZARD.