

(No Model.)

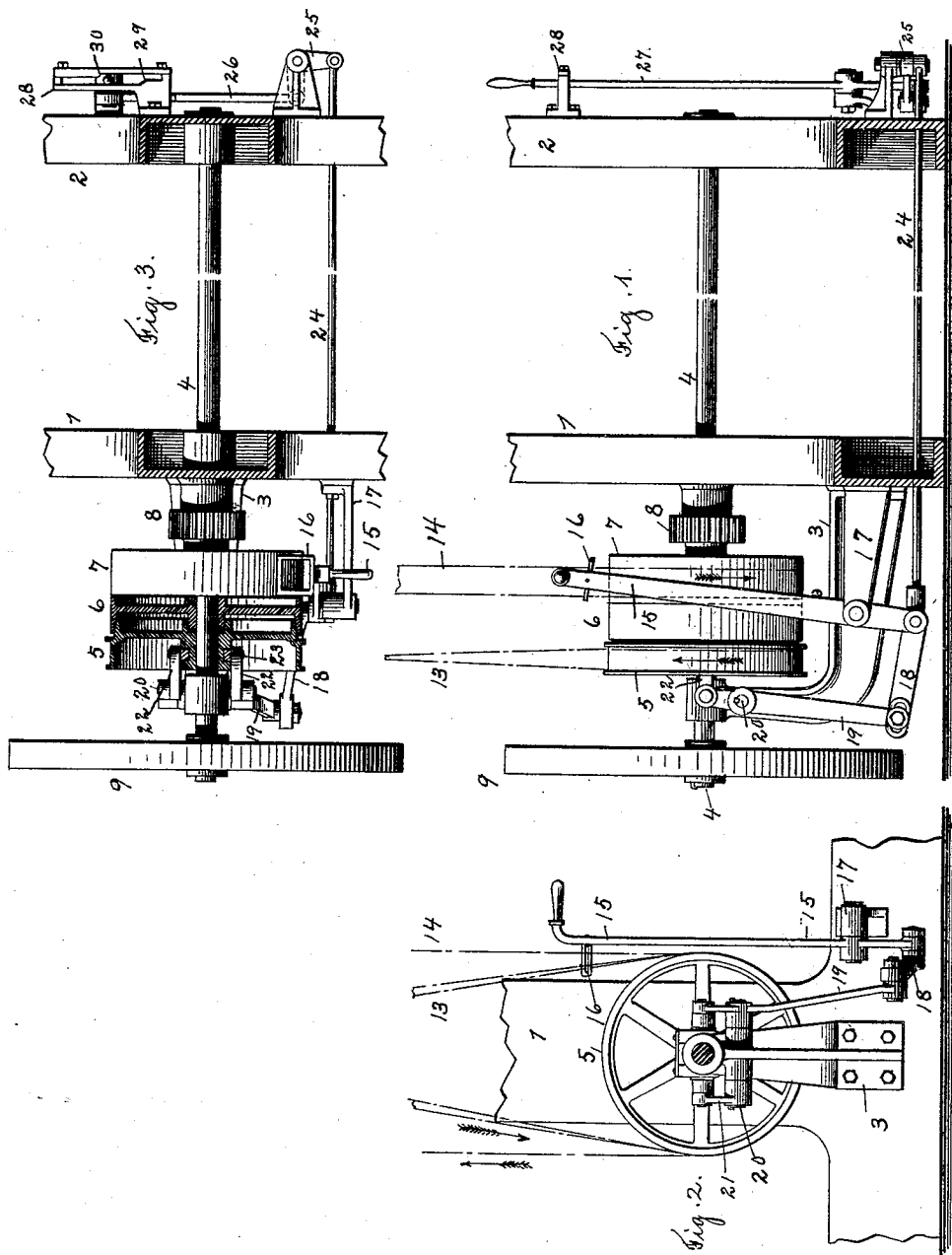
2 Sheets—Sheet 1.

W. S. HUSON.

STOPPING AND REVERSING MECHANISM FOR PRINTING PRESSES.

No. 482,359.

Patented Sept. 13, 1892.



Witnesses
Chas. F. Schuch
James J. Rafferty

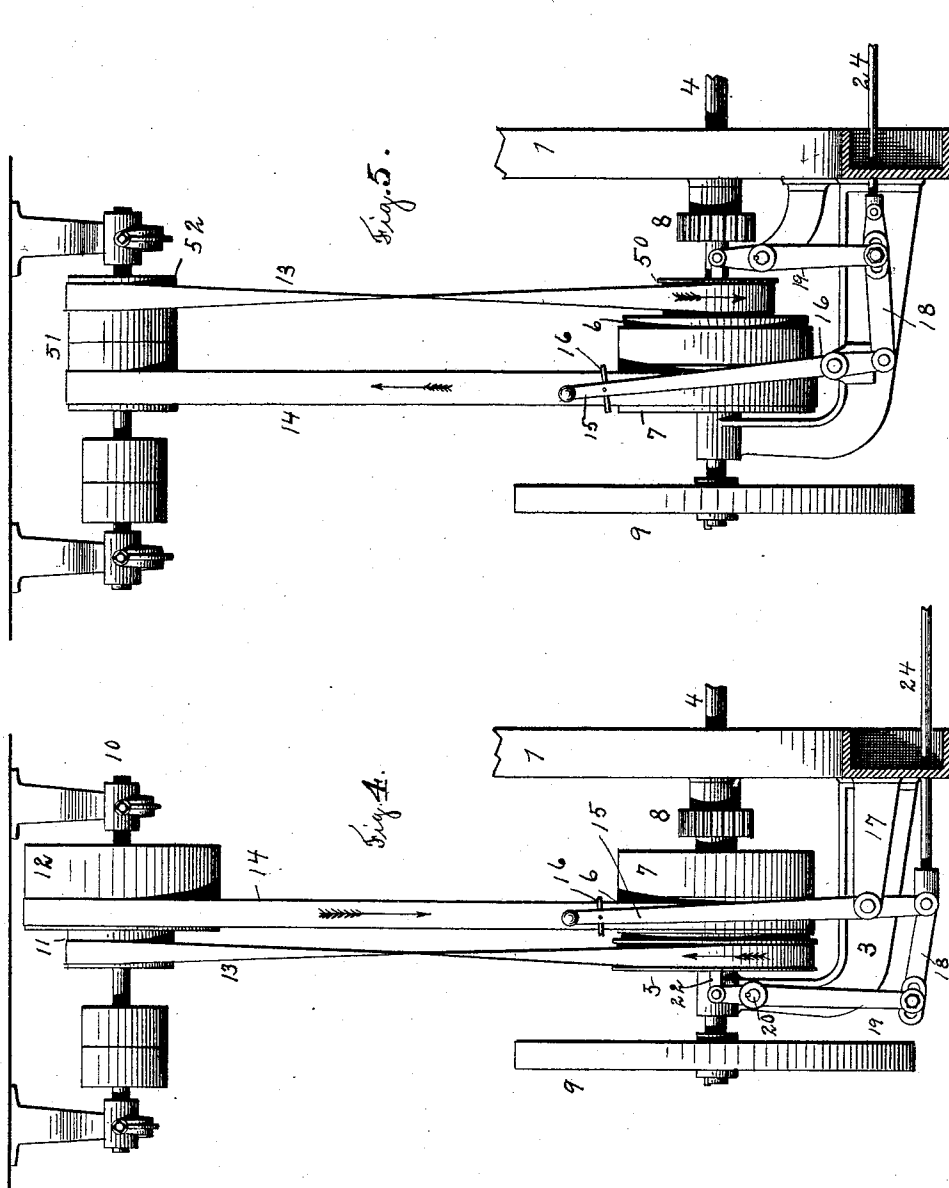
Inventor
W. S. Huson
By his Attorney
Louis W. Southgate

W. S. HUSON.

STOPPING AND REVERSING MECHANISM FOR PRINTING PRESSES.

No. 482,359.

Patented Sept. 13, 1892.



Witnesses

Chas. F. Schuchert
James J. Rafferty

Inventor

W. S. Huson
By his Attorney
Louis W. Southgate

UNITED STATES PATENT OFFICE.

WINFIELD S. HUSON, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE
CAMPBELL PRINTING PRESS AND MANUFACTURING COMPANY, OF
NEW YORK, N. Y.

STOPPING AND REVERSING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 482,359, dated September 13, 1892.

Application filed April 23, 1892. Serial No. 431,025. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. HUSON, a citizen of the United States, residing at Taunton, in the county of Bristol and State
5 of Massachusetts, have invented a new and useful Improvement in Stopping and Reversing Mechanism for Printing-Presses, of which the following is a specification.

The aim of this invention is to produce a
10 new and improved driving mechanism for printing-presses, by which the operator can stop the machine and run the same either forward or backward.

In printing-presses it is desirable to have a
15 driving mechanism by which the machine can be quickly stopped and reversed at reduced speed, particularly when the machine is run at a high rate of speed, and my invention is of this general character.

20 I desire to have a reduced speed in one direction without the intervention of gearing and to operate the same from the direct driving mechanism. To accomplish this end, I incorporate a friction-clutch with the usual
25 tight and loose pulleys, using open and cross belts to give the contrary directions to the machine, and also preferably arrange the same so that the speeds in the opposite directions are different.

30 To this end my invention consists of a device described and claimed in this specification, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of my improved device. Fig. 2 is a side
35 elevation of the same. Fig. 3 is a plan of the same, partly in section. Fig. 4 is a view illustrating the arrangement of the belting from the counter-shaft, and Fig. 5 is a similar view
40 illustrating a slight modification.

Referring to the drawings and in detail, 1 represents the driving side frame of a printing-press, and 2 the opposite side frame. A hanger 3 is secured to the frame 1, and the
45 same supports one end of the driving-shaft 4, on which are mounted loose friction-pulley 5, tight pulley 6, having one member of a friction-clutch on its rim, loose pulley 7, and

driving-pinion 8, by which motion may be communicated to the machine in the usual 50 manner.

A fly-wheel, as 9, is mounted on the end of the shaft, and the same is useful in giving a steady motion to the press, and also the same may be used to run the machine by hand. 55

A counter-shaft, as 10, Fig. 4, has two pulleys 11 and 12, and these pulleys are connected by cross-belt 13 and open belt 14 to pulleys 5 and 7 of the machine. It will be seen that the pulley 11 is made smaller than the pulley 60 12, so that the speed of pulley 5 is considerably less than the speed of pulley 7; also, it will be seen that the faces of pulleys 12 and 7 are made wide, so that the belt 14 may have a lateral shifting movement, as hereinafter de- 65 scribed.

A shifting-lever 15, having a belt-fork 16 engaging the belt 14, is fulcrumed to bracket 17, fastened to the side frame 1. The lever 15 is connected by rod 18 to lever 19, which 70 is keyed to a short shaft 20, which is journaled in a bearing formed in the bracket 3, as shown in Fig. 2. The lever 18 is slotted, as shown at 100, whereby the lever 19 can be adjustably connected to the same, and the 75 throw of the clutch thereby adjusted. Obviously if the two driving-belts were both crossed or both opened the machine could be driven at two different speeds in the same direction, as desired, and thus the mechanism 80 described is also adapted for a "fast and slow motion," so-called, for any type of printing-press. On each end of this shaft 20 is fastened a short lever 21, which is connected by 85 suitable links 22 to a sleeve or yoke 23, which is loosely journaled on the hub of the pulley 5, as shown in Fig. 3. This system of levers, as described, will give the pulley 5 a very small lateral shifting movement compared with the movement which is given to belt 14. 90

A transverse connecting-rod 24 is connected to the short end of lever 15 and extends across the machine, as shown, and connects to a bell-crank lever 25, fulcrumed in a horizontal plane to a suitable bracket extending or se- 95 cured to the frame 2, and the other end of the

bell-crank lever 25 is connected by the link 26 to the short end of the shifting-lever 27, which is fulcrumed on a suitable bracket, and the end of which extends into a suitable guide-bracket 28, which has stops or cam-surfaces 29 and 30, which when the lever 27 is moved to one side or the other will transversely strain the lever, and thereby clamp or hold the same.

In Fig. 5 I have shown pulleys arranged in the reverse manner from those in the device shown in Fig. 1, and the friction-pulley 50 has a belt-surface of smaller diameter than the other pulleys, and the counter-shaft pulleys 51 and 52 are made of the same diameter. All other parts of this device are the same as those of the device shown in Fig. 1, except that the parts are oppositely arranged to those in the device shown in Fig. 1, and a detailed enumeration of the same is not thought necessary. This is a desirable construction when it is desired to keep the tight and loose pulleys of large diameter and when a small pulley may be used as the driving-pulley, and it is also desired to keep the friction-pulley as close as possible to the frame.

The operation is as follows: As shown in Fig. 1, the open belt is on the loose pulley 7 and the friction-pulley 5 out of contact with the tight pulley 6 and the machine at rest. If it is desired to run in a forward direction, the open belt is moved on the tight pulley by means of the lever 15 or 27, and the friction-pulley 5 is moved laterally at the same time farther from contact with pulley 6 by means of the connections, and space is allowed between the hanger 3 and the hub of the pulley to allow this movement. To run the machine in a backward direction, the open belt is moved off the tight pulley and the effort of the shifting-lever continued until the friction-pulley 5, which is driven by the cross-belt 13, is brought in contact with the friction faces of tight pulley 6, when now the machine will be run in a reverse direction, or "backed up," as it is technically called. By this last operation, if the machine was running forward on ordinary printing, the machine could be quickly stopped by momentarily applying the friction. Thus it will be seen that the bed is given its forward movement by throwing a belt on and off a tight pulley and that the same is given its backward movement by throwing said belt off the tight pulley and throwing the clutch into operation. This is a preferred form of arrangement and one that has several valuable results in that when the machine is started forward for the regular printing the same is started gradually and easily by means of the belt; but when it is desired to quickly stop and reverse the machine, as in case of accident, a clutch which is positively acting is used. This is a combination which is very useful and advantageous in printing-presses. The amount of throw necessary to apply the belts to drive in either

direction is determined by the guide-bracket 28, which has stops 29 and 30. When the lever is between the stops 29 and 30, the open belt is on the loose pulley and the friction, faces of pulleys 5 and 6 out of contact. If the lever is sprung past stop 29 and thrown to the end of the slot, the friction-faces of pulleys 5 and 6 will be brought in contact and the machine backed up by the cross-belt. If the lever is brought back against stop 30, the contact will be broken, and if the motion of this lever is continued past stop 30 the open belt will be brought into action on the tight pulley 6 and the machine operated by it. The stop 29 is chamfered, so that the lever 27 can be pulled to quickly engage the same and held in this position to stop the action of the machine, but so that the machine can be brought back to a state of rest from lever 15.

The modification shown in Fig. 5 is the same as the device shown in Fig. 1, except that the levers simply have to be thrown in an opposite direction from that in Fig. 1 to procure the same result. Thus I have invented a stopping and reversing mechanism which is extremely efficient for the purpose intended and one which may be operated from either side of the machine.

Modifications of the device herein shown and described may be made by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

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

1. The combination, in a driving mechanism for printing-presses, of the tight pulley and a loose pulley, a clutch arranged to operate from said loose pulley, whereby if the clutch is in operation the loose pulley may transmit motion to the machine, another loose pulley of the same diameter as the tight pulley, belts for driving the two loose pulleys, and means for throwing the belt from the loose pulley of the same diameter as the tight pulley onto the tight pulley and at the same time disengaging the clutch, and vice versa, substantially as described.

2. In a driving mechanism for printing-presses, the combination of a tight pulley having one member of a friction-clutch, a loose pulley having the other member of the friction-clutch, another loose pulley, of the same diameter as the tight pulley, belts for driving the two loose pulleys, and means for moving the belt from the loose pulley of the same diameter as the tight pulley onto the tight pulley and for disengaging the friction-clutch at the same time, and vice versa, substantially as described.

3. The combination of the shaft 4, tight pulley 6, having one member of a friction-clutch, loose pulley 5, having the other member of the friction-clutch, loose pulley 7,

counter-shaft pulleys 11 and 12, of different sizes, belts between the counter-shaft pulleys and the loose pulleys, whereby loose pulleys 5 and 7 will be revolved at different speeds, and means for moving the belt from pulley 7 onto pulley 6 and for disengaging the friction-clutch, and vice versa, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WINFIELD S. HUSON.

Witnesses:

LOUIS W. SOUTHGATE,
H. V. WISE WOOD.