

W. SCOTT.
Stopping and Reversing Mechanism for Printing
and other Machinery.

No. 222,159.

Patented Dec. 2, 1879.

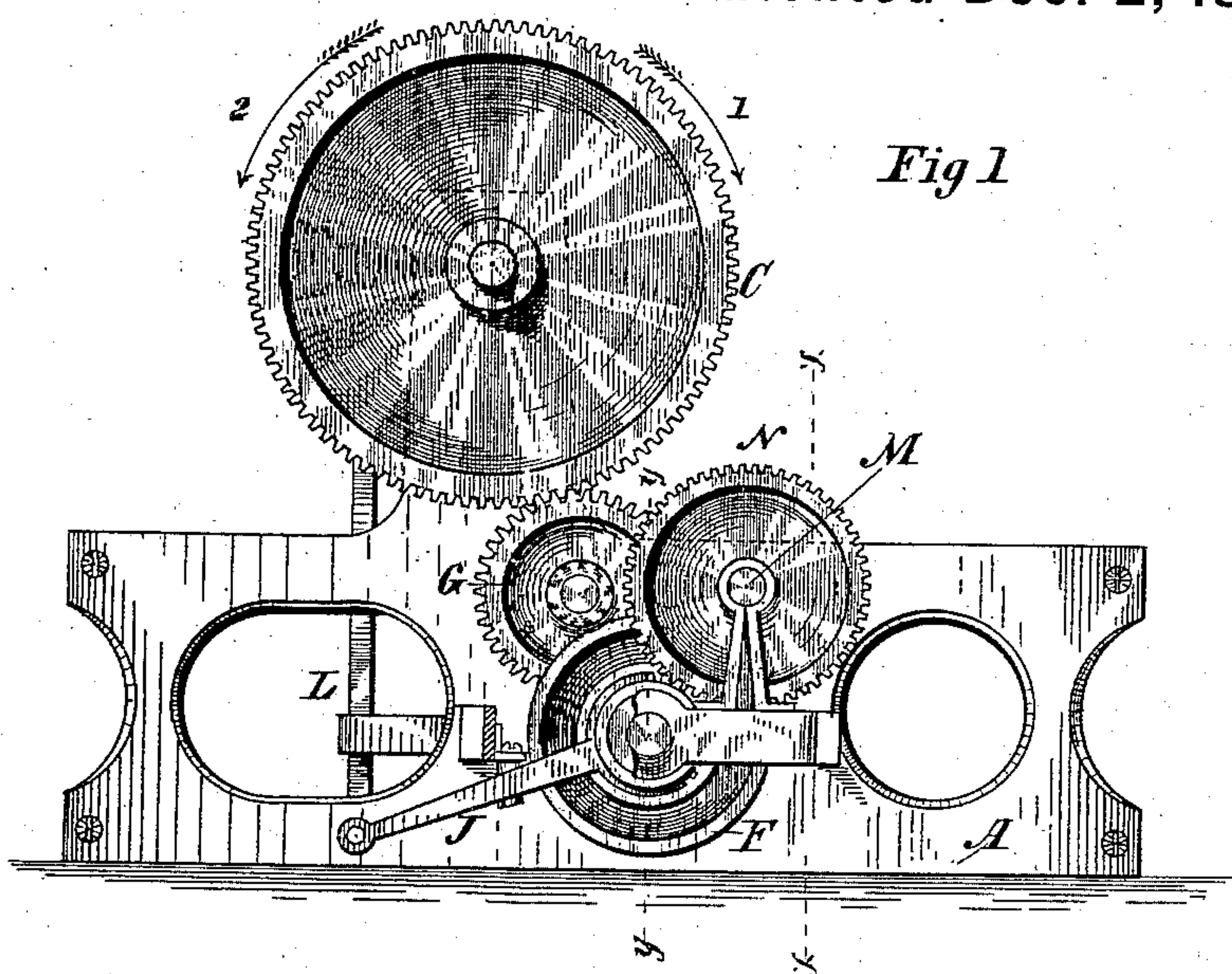


Fig 1

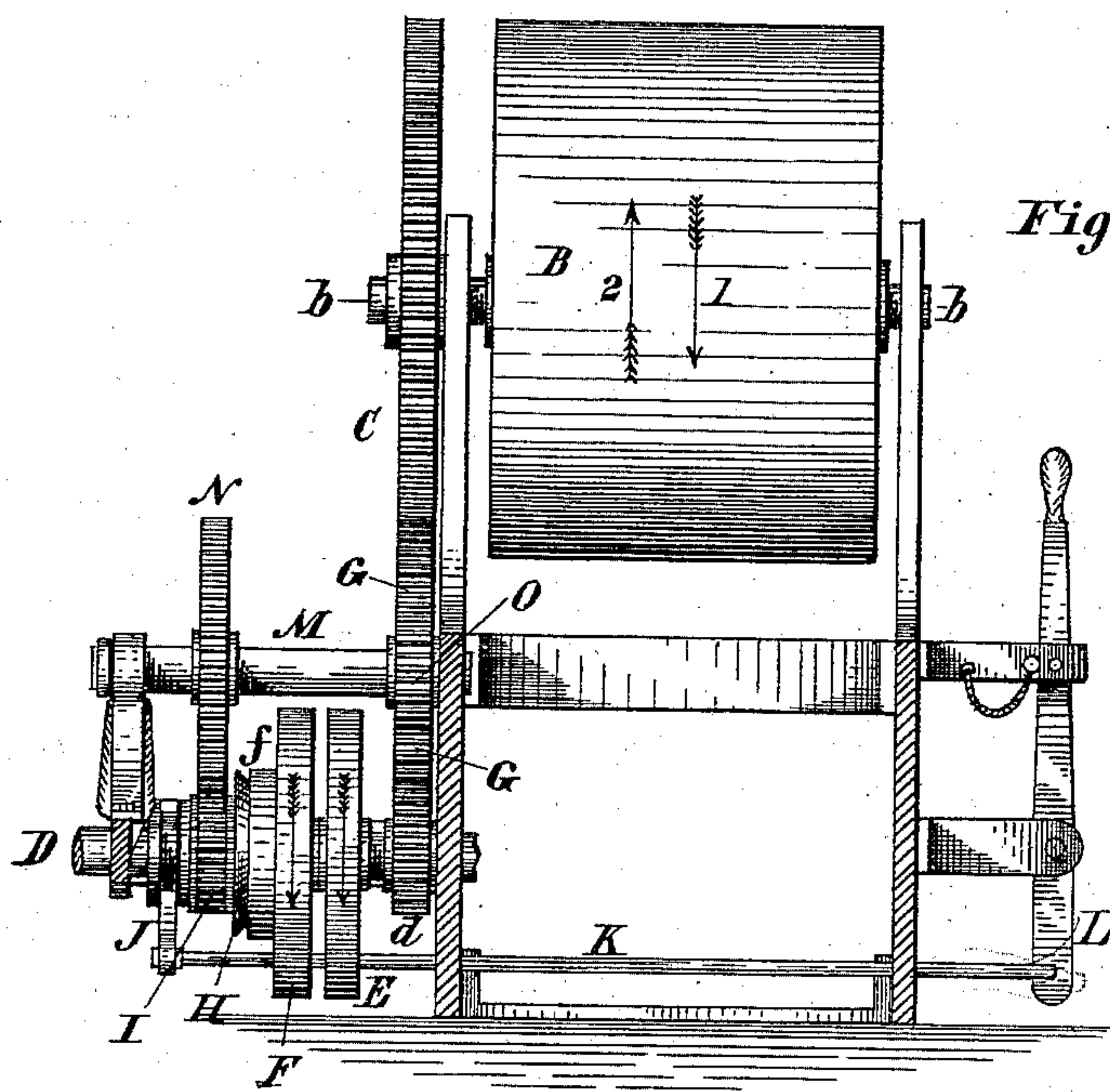


Fig 2

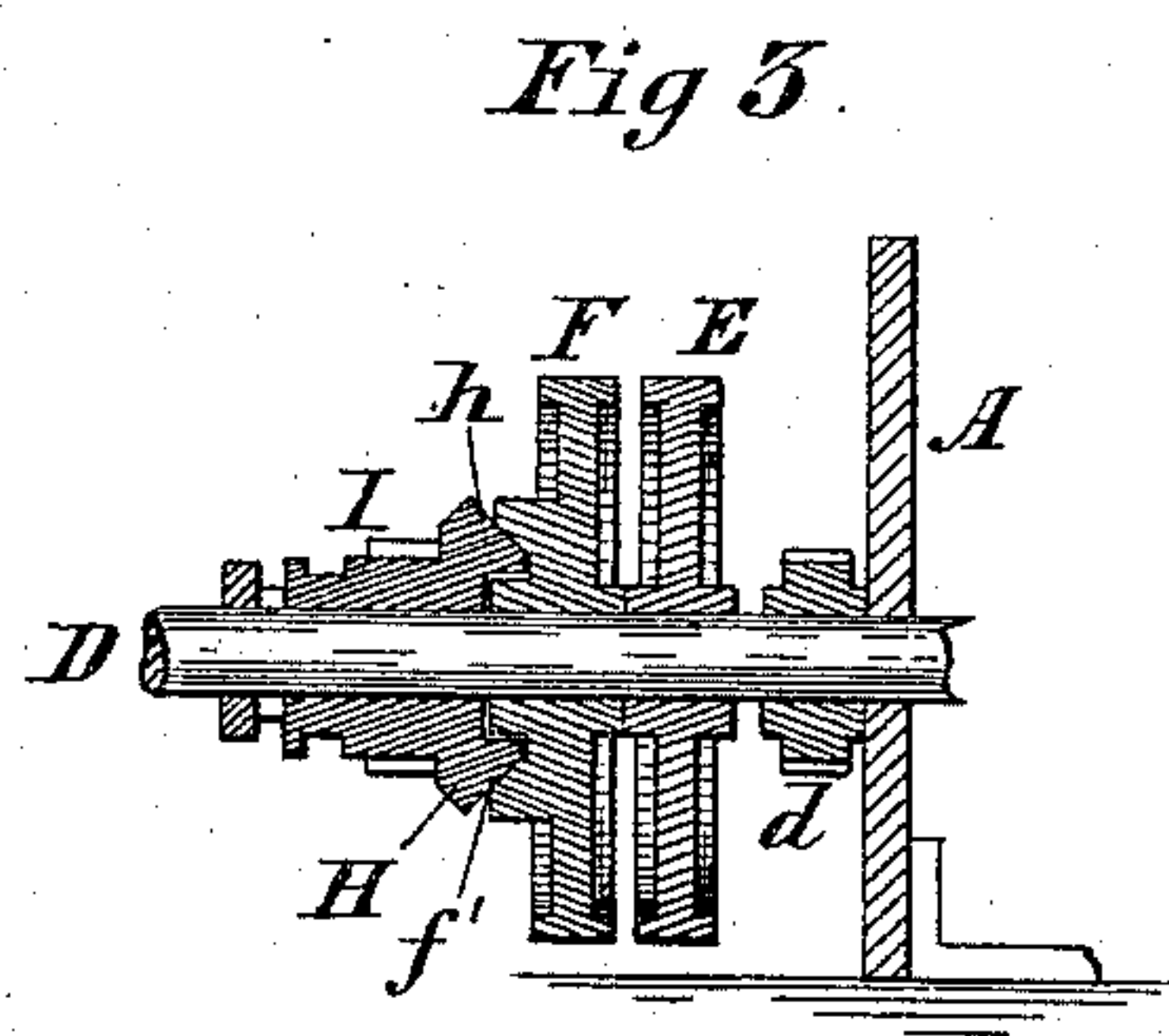


Fig 3

Witnesses

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WALTER SCOTT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN STOPPING AND REVERSING MECHANISMS FOR PRINTING AND OTHER MACHINERY.

Specification forming part of Letters Patent No. **222,159**, dated December 2, 1879; application filed October 6, 1879.

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Stopping and Reversing Mechanisms for Printing-Presses and other Machines, which is fully set forth and described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a stopping and reversing mechanism embodying my improvements; Fig. 2, a transverse section of the same, taken on the line *x x*, Fig. 1; and Fig. 3, a detail section taken on the line *y y*, Fig. 1.

My invention relates to mechanism for stopping machinery and reversing its motion. The improvement is especially adapted to printing-presses, and is shown in the drawings thus applied; but it is also applicable to other machines where such mechanism is desired.

The invention consists in special devices and combinations of devices, all of which will be hereinafter more fully explained, and pointed out definitely in the claims.

In the drawings, A represents a supporting-frame, on which, in this instance, is mounted a printing-cylinder, B, carried by a shaft, *b*, on one end of which is the main gear-wheel C.

A shaft, D, is mounted on the same side of the supporting-frame as the gear-wheel C, being located below the latter. This shaft is provided with a band-wheel, E, screwed to the shaft, and a band-wheel, F, mounted loosely thereon.

At the inner end of the shaft is a pinion, *d*, also secured to the shaft, and gearing with a transmitting gear-wheel, G, which also engages with the main gear C.

The hub *f* on the outer face of the wheel F is provided with a flaring groove or recess, *f'*, adapted to receive the conical or inclined face of a friction-clutch. This friction-clutch H is mounted loosely on the shaft D, its inclined or conical face *h* being arranged toward and adapted to enter the groove *f'* in the wheel F.

A pinion, I, is mounted loosely on the band-wheel shaft D, and is either made in one piece with the clutch H or is connected thereto in some suitable way, so as to move with the latter.

The pinion and clutch are, of course, constructed and arranged so as to be slipped back and forth on the shaft D, to be engaged with and disengaged from the band-wheel F.

An ordinary forked clutch-lever, J, is pivoted to the gear-support, and connected at its outer end by a rod, K, to a hand-lever, L, on the other side of the press, by means of which the clutch and pinion are moved back and forth on the shaft for the purpose stated above.

A counter-shaft, M, is mounted above the shaft D, carrying at its outer end a gear-wheel, N, with which the sliding pinion I engages, and at its inner end a pinion, O, which engages with the transmitting-gear G, both being secured to the shaft.

The operation of this mechanism is as follows: The revolution of the band-wheels is, of course, in the same direction, and is indicated by arrows in Fig. 2 of the drawings. Suppose that, for the performance of its intended work, the cylinder must be revolved in the same direction indicated by the arrow 1 in Fig. 2 of the drawings. The band is thrown upon the wheel E, care being taken that the friction-clutch is disengaged from the band-wheel F. It is evident that the shaft D and pinion *d* will be rotated in the same direction as the wheel E, and thereby, through the medium of the transmitting-gear G, the gear C and cylinder B will be revolved in the same direction—that is, in the direction indicated by the arrow marked 1.

If it is desired to stop the machine, it is, of course, only necessary to shift the band from the wheel E to the wheel F, which revolves loosely on shaft D. If, however, it is desired to reverse the machine, not only must the band be shifted to the wheel F, but at the same time the loose pinion I must be engaged with the wheel F by means of the clutch. The pinion I will now be rotated on its shaft, with the wheel F, in the direction indicated by the arrow on said wheel. The gear-wheel N will thereby be revolved in the opposite direction, carrying with it the shaft M and pinion O, the latter communicating motion to the transmitting-gear G in the same direction as the pinion I, which movement is in the opposite direction to that communicated to the transmitting-gear from the wheel E, as above

described, and hence the movement of the gear C and cylinder B will be reversed, and these parts caused to revolve in the direction of the arrow marked 2 in Fig. 2 of the drawings.

It will be noticed that when the machinery is driven from the wheel E there is idle motion of the pinion I and the gear-train connecting it with the transmitting-gear; and, on the contrary, when the machine is driven from the wheel F, as described, there is idle motion of the shaft D and the parts which are rigidly secured to it, so that there is no interference by either device with the working of the other, except the waste of power by friction, which is, however, so slight as to be of no material importance.

The construction and arrangement of some of these parts described above may evidently be changed somewhat without departing from the principle of my invention, and I do not limit myself to the precise construction and arrangement of all the devices as above set forth, and shown in the drawings. A different clutch mechanism may be employed and the gear-trains may be changed without changing the operation of the band-pulleys in the final movement of the mechanism which they are intended to drive. The band-wheels may be replaced by gearing and gearing replaced by band-wheels, and yet the principle of operation retained in the mechanism.

With mechanism constructed upon this prin-

ciple it will be noticed that the driving, stopping, and reversing of the machine are all effected with only two band-wheels, and the device is compact, simple, and efficient.

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

1. A shaft, D, in combination with the fast and loose wheels E F, mounted thereon, driving-pinion secured to said shaft, loose pinion mounted thereon, mechanism for engaging the loose pinion with and disengaging it from the loose wheel F, and a gear-train connecting the loose pinion with the main gear, whereby the machine may be driven in one direction, stopped, and reversed, substantially as described.

2. The loose wheel F, in combination with loose pinion I, a clutch mechanism for engaging and disengaging the two, and a gear-train connecting the pinion with the main gear, whereby the machine may be reversed by shifting the driving mechanism to the loose wheel F, substantially as described.

3. The shaft D, in combination with the fast and loose wheels E F, fast pinion d, loose pinion I, clutch H, gears N and O on counter-shaft M, transmitting-gear G, and main gear C, substantially as described.

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Witnesses:

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