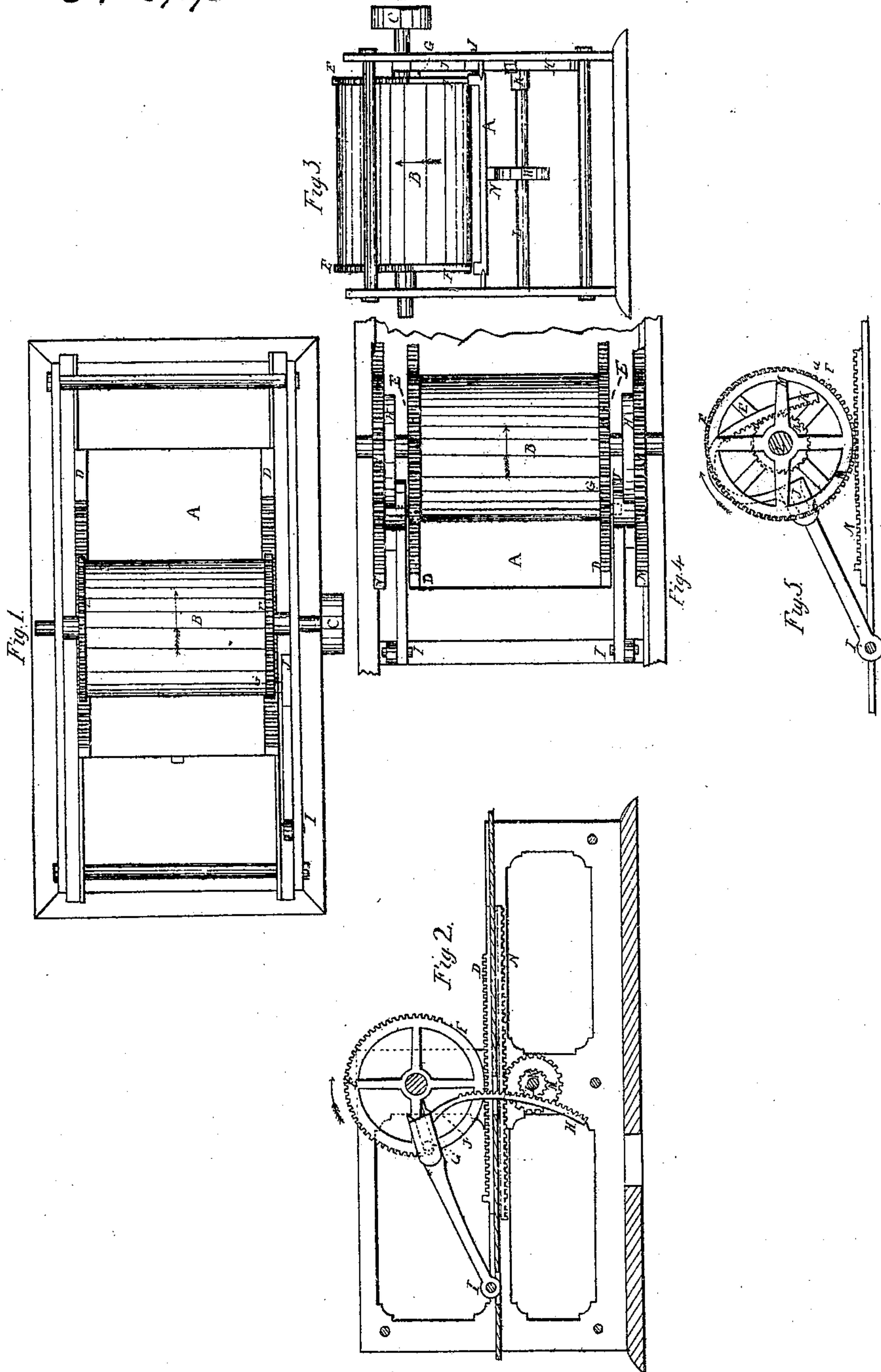


A. Judson.
Printing Press.

Nº 67198.

Patented Jul. 30. 1867.



Witnesses:

A. Wickham

R. H. Kenton

Witnesses:

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Atty.

United States Patent Office.

ANSON JUDSON, OF BROOKLYN, NEW YORK.

Letters Patent No. 67,198, dated July 30, 1867.

IMPROVEMENT IN PRINTING-PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ANSON JUDSON, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of my invention is to provide a better means for giving the proper motion to the cylinder and bed of a cylinder printing-press than that now employed, whereby the motion is made more smooth and even; less time is required to print a sheet; exactness of register is insured; a smaller cylinder may be used to print a sheet of any given size; and the machinery is much less liable to wear out or otherwise get out of order; and my invention consists in various combinations of devices hereinafter described for accomplishing the above object. In the accompanying drawings—

Figure 1 is a plan of my invention.

Figure 2 is a side elevation of the same.

Figure 3 is an end elevation of the same.

Figure 4 is a plan of a modification of the same.

Figure 5 is a side elevation of the modification shown in fig. 4.

My invention is thus shown in two forms—that in figs. 1, 2, and 3, and that in figs. 4 and 5—each of which embodies my invention in a manner substantially similar, although in practice I prefer the former, as it is more simple and equally effective.

A is the bed of the machine, and B the cylinder. The cylinder is driven from a pulley or drum, C, on the same shaft with it. A segment of a toothed wheel, E E, on each end of the cylinder B, meshes into the racks D D on each side of the bed A, and thus drives the said bed forward, when the blank space F, between the ends of the segment E, comes around and allows the cylinder to continue its rotary motion while the bed is being driven back. The devices for driving the bed back are in the form shown in figs. 1, 2, and 3; a pin, G, on the end of the cylinder A; a segment, H, pivoted at I and driven by the pin G, which enters and leaves the jaws J at the proper time for that purpose; a pinion, K, on a shaft, L, hung in the frame of the press below the bed; a toothed wheel, M, on the shaft L, and a rack, N, into which the toothed wheel M meshes, in order to drive the bed back. In the form shown in figs. 4 and 5 the devices for driving the bed back are a pin, G, on each end of the cylinder; a segment, H, on each side of the machine, each driven by one of the pins, G; a loose pinion, K, at each end of the cylinder, into which the teeth on the segments H mesh, in order to turn the said pinions, toothed wheels M, which are loose on the shaft L and fast to the pinions K, moving with them and racks N, into which the wheels M mesh, in order to drive the bed back.

The operation of the parts is the same in both cases. We will suppose that the bed is ready to start forward to print an impression. The first tooth *a* of the segment E is in gear with the forward end of the rack D; the segment H is at its lowest point, the pin G at or near its highest point, and the cylinder B turning in the direction indicated by the arrows. The first effect produced is the forward motion of the bed A, caused by the segments E gearing into the racks D. As the motion proceeds the bed moves steadily forward until it reaches the end of the throw or motion. Simultaneously therewith the last tooth of the segments E disengages itself from the racks D, and the pin G enters the jaws J, raising the segment H, thereby turning the pinion K and wheel M, and thus driving back the bed A to its first position, ready to make another forward motion. A quick return motion may thus be given to the bed by properly proportioning the various parts, while at the same time all shock or jerking motion on the return may be obviated in two ways: first, by giving the proper form to the face of the jaws J, and second, by placing the centre I near enough to the circle described by the pin G to obtain the advantages of a crank motion, which are the gradual increase and decrease of the rapidity of the rectilinear motion as the crank-pin (represented by the pin G) recedes from or approaches the "centres." But a small part of the surface of the cylinder B (one-third at most) needs to be given up for the back motion, as that motion is made more quickly than the forward motion, while at the same time it is smooth and easy, and consequently a much smaller cylinder need be used for printing a sheet of any given size than has heretofore been required, and as time is saved in the return motion, the cylinder continuing its rotary motion during the

whole process, and the devices being very simple, the press may safely be worked more rapidly. By driving the bed by means of toothed gearing, all of which may be "cut" with the most perfect accuracy, and the power being applied to the cylinder-shaft, the greatest exactness of register is insured. Besides, the wear and tear of the different parts, all being simple, is less than in most of the machinery for that purpose now in use.

Having thus described my invention, I claim—

1. The combination with the segment H of the pin G and jaws J, by which the said segment is rotated intermittently to produce, by means of the pinion K, wheel M, and rack N, or their equivalents, the backward motion of the bed, substantially as set forth.

2. The combination with a cylinder B, having segments E at each end, which mesh intermittently into racks D at each side of the table of the segment H, driven intermittently by the pin G, substantially as and for the purpose hereinabove described.

ANSON JUDSON.

Witnesses:

THOS. P. HOW,

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