

(No Model.)

J. C. FOWLER & E. A. HENKLE.
REEL FOR OFFSET WEBS.

No. 432,233.

Patented July 15, 1890.

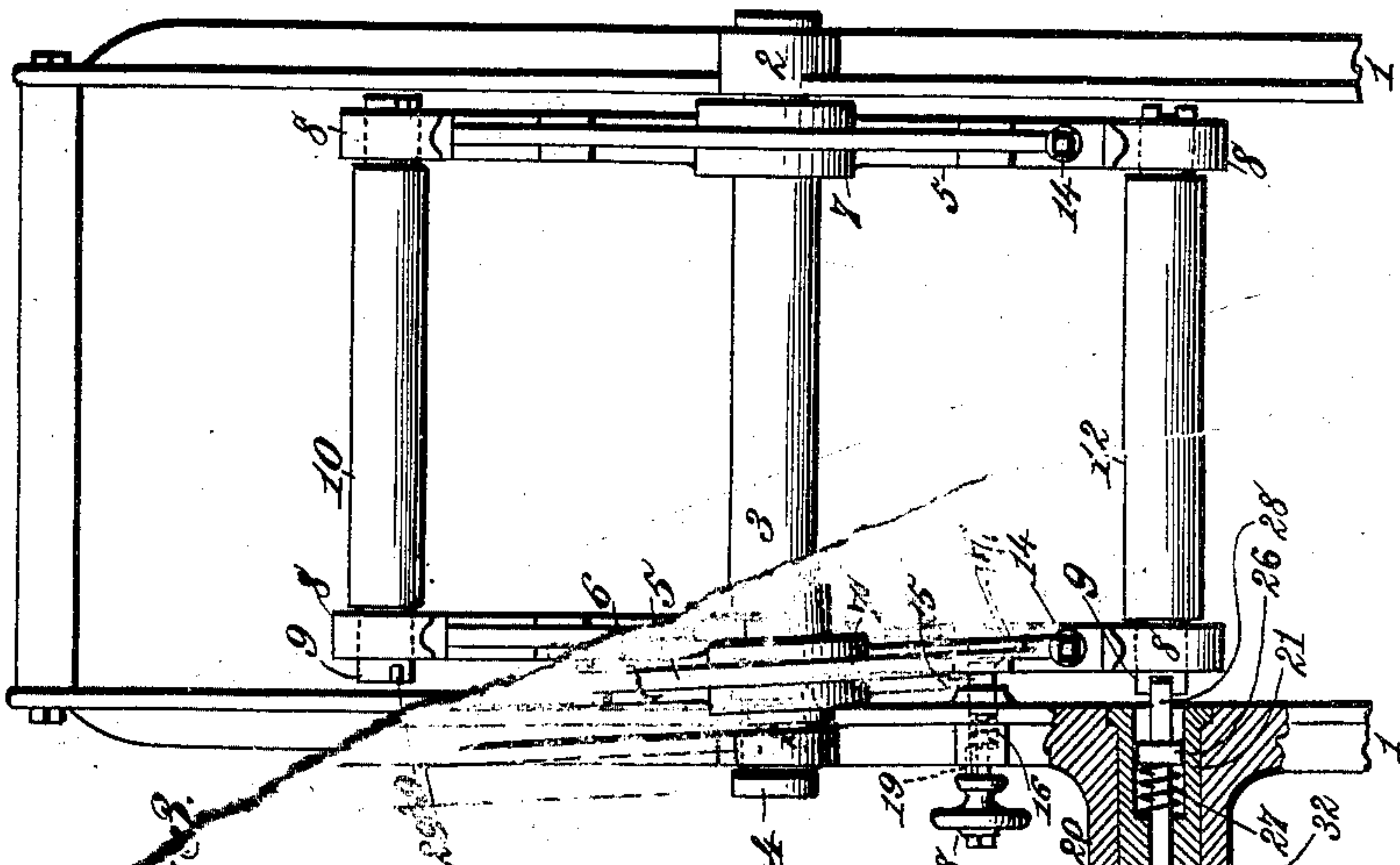


Fig. 1.

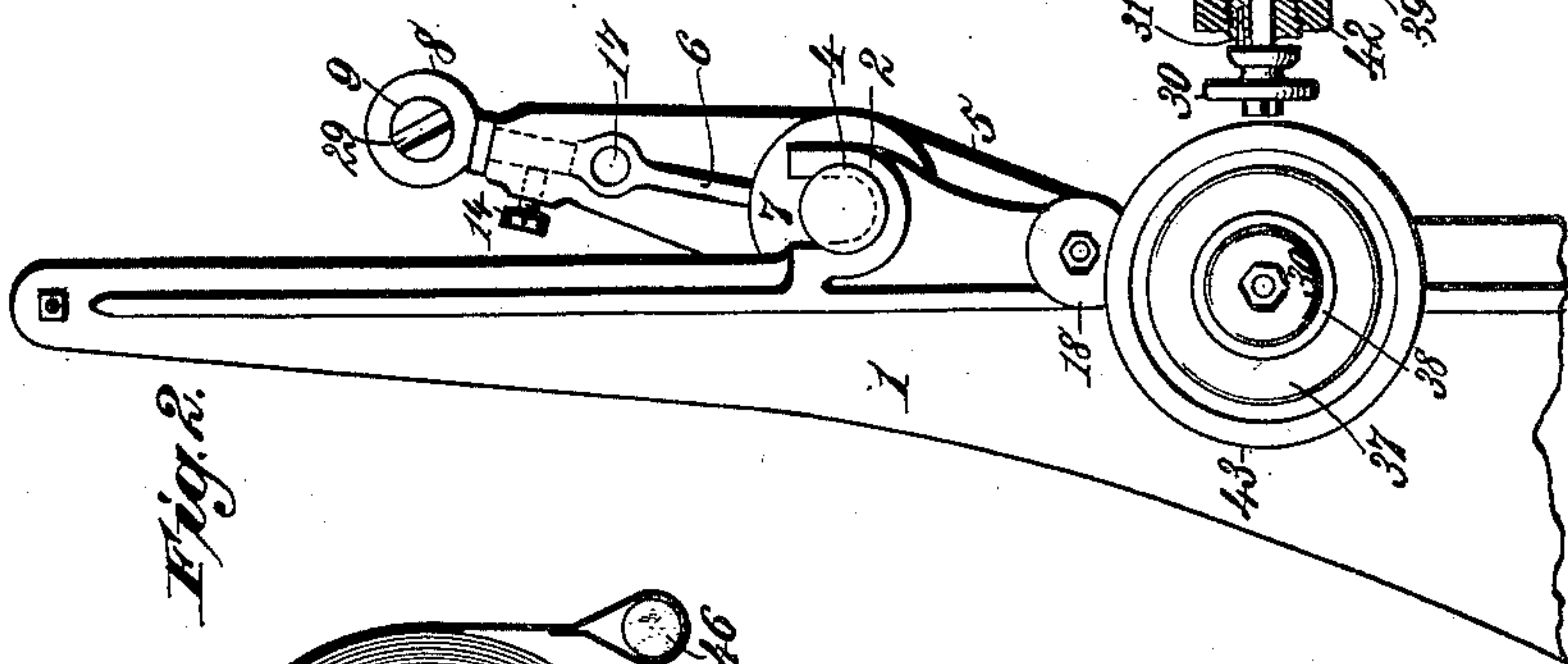


Fig. 2.

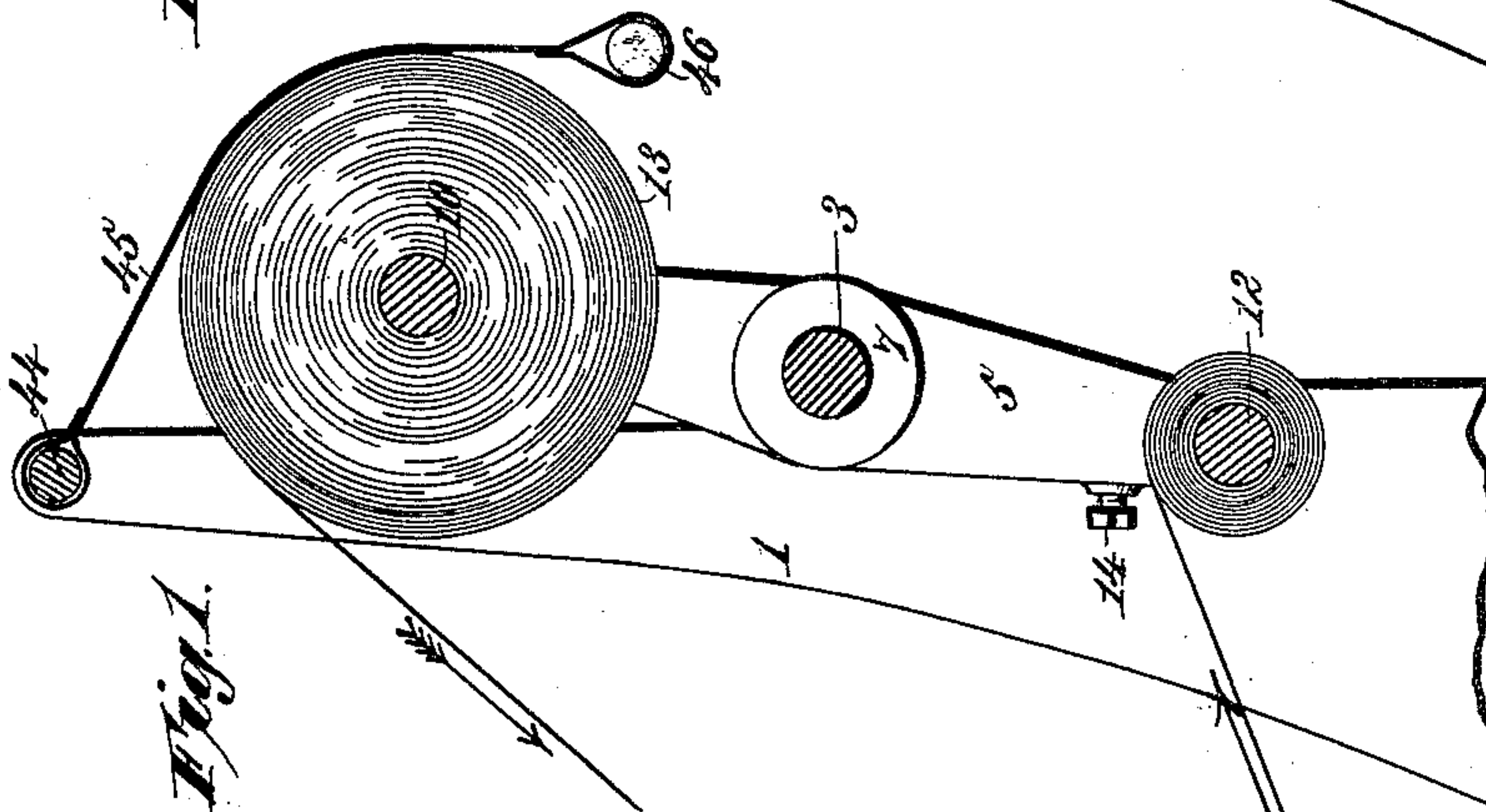


Fig. 3.

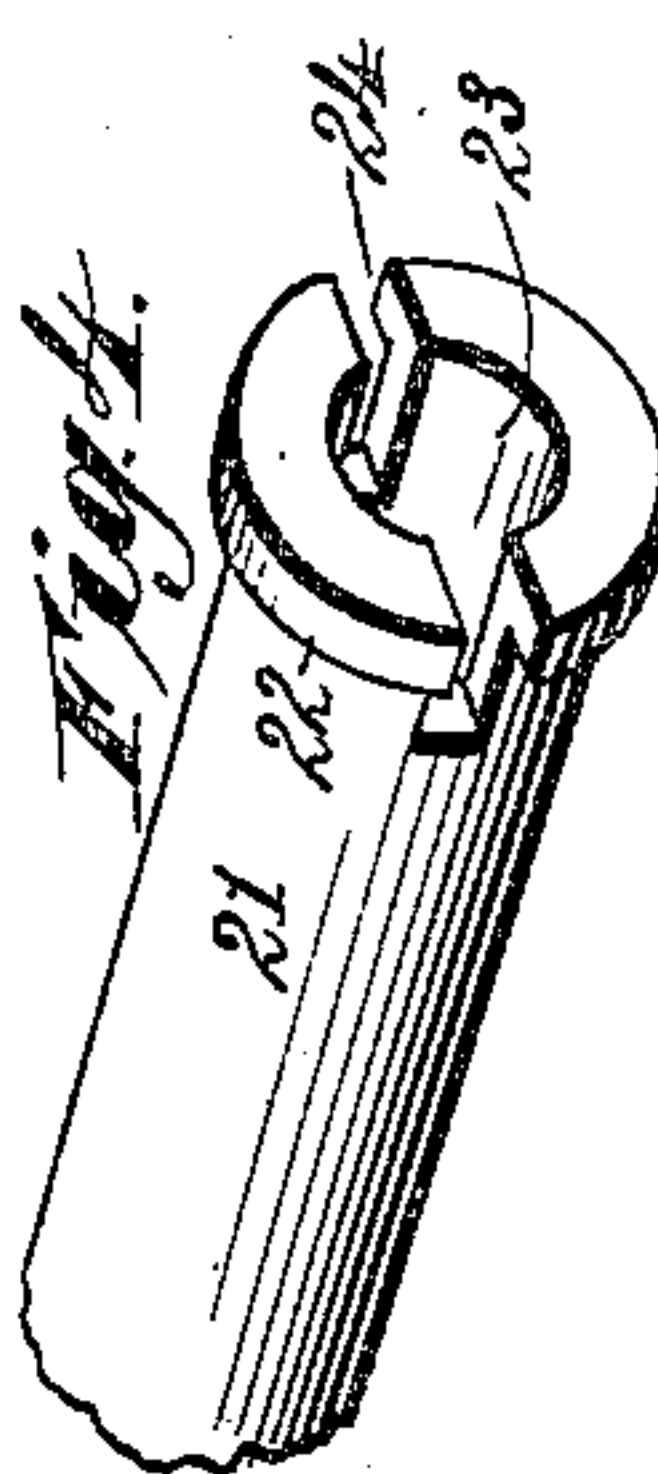
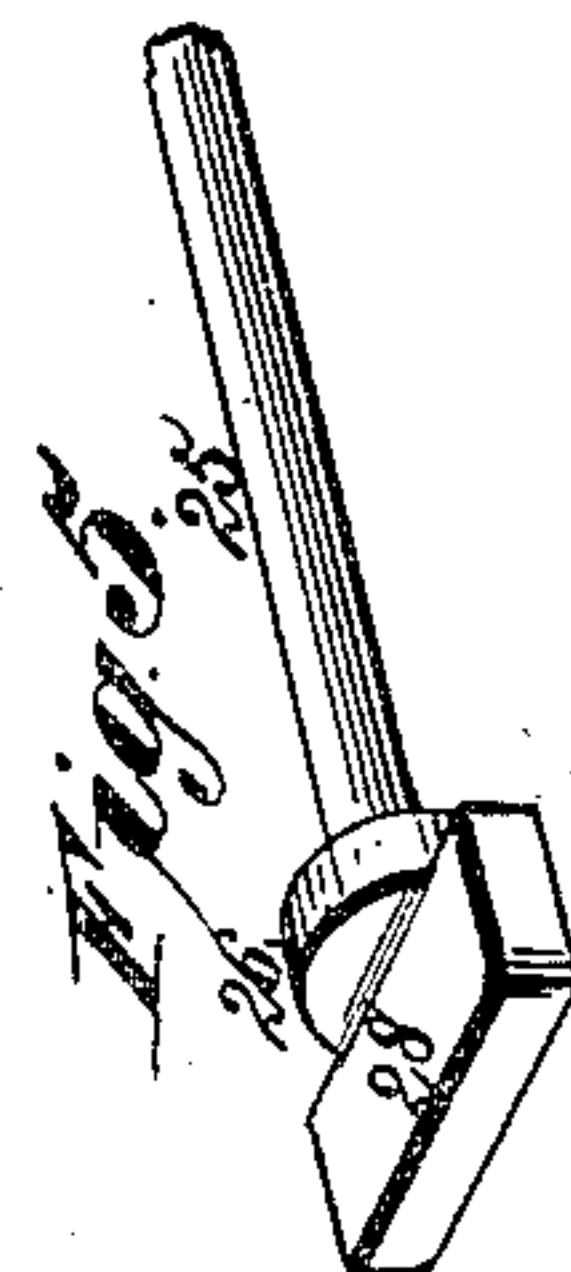


Fig. 4.

Fig. 5.

Witnesses:
Robert Everett.
J. G. Meyers Jr.

Inventors:
Joseph C. Fowler
Edward A. Henkle
By *James L. Norris.*
Atty.

UNITED STATES PATENT OFFICE.

JOSEPH C. FOWLER AND EDWARD A. HENKLE, OF WASHINGTON, DISTRICT
OF COLUMBIA.

REEL FOR OFFSET WEBS.

SPECIFICATION forming part of Letters Patent No. 432,233, dated July 15, 1890.

Application filed April 15, 1890. Serial No. 348,017. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH C. FOWLER and EDWARD A. HENKLE, citizens of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Reels for Offset Webs, of which the following is a specification.

Our invention relates to certain novel improvements in continuous web-printing, the purpose thereof being to provide simple means whereby an offset web may be caused to travel at an equal speed with the continuous paper web, the offset being received first upon one side and then upon the other, alternately, and the pay-off and take-up rolls being mounted upon a centrally-pivoted frame, whereby they may be shifted to render each one alternately interchangeable as a pay-off and take-up roll, successively.

It is the purpose of our invention, also, to provide an offset web winding alternately upon rolls journaled on opposite ends of a centrally-pivoted frame, the direction of feed of the offset web being always the same, means being provided for locking the frame in each reversed position, and for attaching and releasing the rolls carrying the offset web, which rolls are journaled in the ends of the reversible frame.

It is a further purpose of our invention to combine with the take-up roll simple means whereby the said roll may be positively connected with and disconnected from a friction-driven motor-shaft, whereby a constant and uniform draft is maintained upon the offset web, the frictional contact being adjustable to suit the circumstances of every case.

It is one purpose of our invention, also, to combine with a printing-press an offset web which shall wind from a pay-off roll upon a take-up roll, moving always in the same direction, said rolls being alternately pay-off and take-up, and the opposite faces of the offset web being presented alternately or successively to the impressed surface of the paper, suitable means being provided for exerting a frictional drag upon the pay-off roll, to impose a suitable strain upon the offset web.

To these ends our invention consists in the several novel features of construction and new combinations of parts fully set forth hereinafter, and then definitely pointed out in the claims following this specification.

Referring to the accompanying drawings, Figure 1 is a vertical section showing the pay-off and take-up rolls, the reversible frame on which they are mounted, and the drag or friction-brake applied to the pay-off rolls. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is a sectional elevation showing the reversible frame, the driving mechanism for the take-up roll being in section, and the other parts, including the locking devices for the centrally-pivoted supporting-frame, being also in elevation. Fig. 4 is a detail perspective showing a sleeve, having provision for a key by which the motor-pulley is engaged with the take-up roll. Fig. 5 is a detail perspective of the key detached.

In the said drawings, the reference-numeral 1 denotes uprights or standards on the frame of the press, said standards being provided with bearings 2, wherein we journal the ends of a horizontal shaft 3, said bearings being open or hook-shaped, so that the shaft may be at any time lifted out of or inserted therein, the weight of the shaft and its attachments, now about to be described, being sufficient to retain the parts in their proper position. To prevent lateral displacement, flanges 4 are formed upon the extremities of the shaft, which lie outside the open bearings, as shown in Figs. 2 and 3.

Upon the shaft 3 is mounted a frame composed of arms 5, parallel with and arranged in close proximity to the standards 1. These arms are strengthened by longitudinal ribs 6, and are provided with central bosses or lugs 7, by which they are rigidly mounted upon the shaft 3. At the extremities of these arms are formed sockets, (shown in dotted lines in Fig. 2,) which receive the shanks or stocks of eyes 8, in which are mounted the journals 9 of rolls 10 and 12, one of said rolls carrying and paying off the offset web 13, and the other receiving said web as it is paid off. The shanks of the eye-bearings 8 are locked in place in their sockets by means of set-screws 14, and the two rolls or shafts 10 and 12 practically constitute the third and fourth sides of the rectangular frame, the longer sides of which are composed of the arms 5.

Arranged in a suitable socket or bearing in one of the standards 1 is a spring-pressed locking-pin 15, which is thrown by a spring 16 into a socket 17 in one of the arms 5 of the

frame carried by the central shaft 3, whereby said shaft is locked in substantially the position shown in Figs. 1 and 2.

Upon the locking-pin is formed a handle or knob 18, having an eccentric nipple 19, seated normally in the socket in the standard 1. By withdrawing the pin against the tension of the spring 16 and then giving a slight turn to the handle the nipple is caused to rest upon the exterior face of the standard 1 and hold the nipple unseated or withdrawn from its socket in the arm 5 to release the frame to permit it to be turned upon the shaft 3.

Upon one of the standards or uprights 1 is formed a boss 20, within which is seated a sleeve-bearing 21, (shown in detail in Fig. 4,) and having a collar or flange 22 at one end, which sits in a countersink formed in the inner face of the standard 1. In the end of this sleeve is formed a concentric opening or cylindrical recess 23, centrally divided through a portion of the length of the recess or opening 23 by a longitudinal transverse slot or channel 24. The sleeve 21 extends for some distance outside the standard 1, and is provided with an axial opening, which receives a spindle 25, having a circular disk 26 upon its end, which is movable in the circular cavity 23, and receives the pressure of a spring 27, interposed between the disk 26 and the end of the recess.

Upon the outer face of the disk 26 is formed or mounted a cross-head 28, which is of greater length than the greatest diameter of the disk, and which lies partly in the transverse slot 24 and partly outside the same. The transverse edge of the cross-head 28 is thrown by the tension of the spring 27 into engagement with a central or diametrical slot 29, formed in the end of either of the rolls 10 or 12.

Upon the outer end of the spindle 25 is mounted a handle or knob 30, having a locking-pin 31 engaging a socket in the outer end of the sleeve in such manner that by pulling the handle or knob outward and turning it slightly, so that the pin 31 bears against the end of the sleeve, the spindle 25 is held retracted, and the frame thereby released for its shifting movement.

Upon the sleeve 21, adjacent to the boss 20, is rigidly mounted a collar 32, against which lies a friction-disk of leather or other suitable material 33. Against this disk rests a collar 34, carried by a thimble 35, sitting against the other side of the friction collar or disk 33. Slipped upon the thimble 35 and resting upon the outer face of the collar 34 is a second friction-collar 36, which is compressed between an exterior thimble 37 and the friction-collar 34. This thimble is positively keyed to the sleeve 21 by a longitudinally-movable collar 38, the connection being made by a removable pin 39, engaging a slot 41 in the end of the sleeve. A nut 42 is screwed upon the end of the sleeve 21, and compresses a spring 42^a, coiled thereon, whereby the pressure upon the friction-disks

is adjusted. Upon the collar 35, lying between these disks, is mounted a wheel 43, which may serve as a belt-pulley, sprocket, or gear-wheel, whereby motion may be communicated to the roll with which the cross-head engages. By throwing the nut up upon the end of the sleeve the tension of the spring and the compression of the friction-collars may be adjusted to any degree required.

In order to effect a connection between the collar 38 and the sleeve 21, we attach to the said collar a rod 40, entering a socket in the thimble 37. The collar 38 being keyed to the sleeve 21 by the pin 39, it will be seen that the connection between said sleeve and the exterior thimble 37 will be positive, and all tension of the spring 42^a will be avoided.

In order to impose a drag or brake upon the roll which happens to be the pay-off roll, we attach to a cross-bar 44 upon the standard 1 a canvas web 45, which is drawn over the offset web on the pay-off roll, and has a weight rod or bar 46, as shown in Fig. 1; but this, while we employ it, forms no part of our present invention.

What we claim is—

1. In a printing-press, an offset web carried by two rolls journaled upon a pivotally-mounted frame, which is shifted in position after each run of the web to render each of said rolls alternately the pay-off and take-up roll, substantially as described.

2. In a printing-press, the combination, with a centrally and pivotally mounted frame, of rolls journaled in the extremities of the parallel arms of said frame and rolls journaled in the extremities of said parallel arms, one of which pays off an offset web, while the other takes it up, the position of said rolls being reversed by swinging the frame through half a revolution, or substantially so, whereby the pay-off becomes the take-up roll, and vice versa, substantially as described.

3. In a printing-press, the combination, with standards or other supports upon the frame of the press, of a shaft journaled in bearings upon said standards, arms centrally and rigidly mounted upon said shaft and having in their extremities bearings or attachments for the journals of rolls arranged upon the opposite sides of said shaft, an offset web wound upon one of said rolls and paid off the other, the end of the take-up roll having positive connection with a friction-driven shaft, and means for locking the frame in two different positions, whereby the pay-off roll shall become the take-up, and vice versa, at each shift of the frame, substantially as described.

In testimony whereof we have affixed our signatures in presence of two witnesses.

JOS. C. FOWLER.
E. A. HENKLE.

Witnesses:

JAMES A. RUTHERFORD,
GEO. W. REA.