G. LIDSEEN.

PRINTING PRESS.

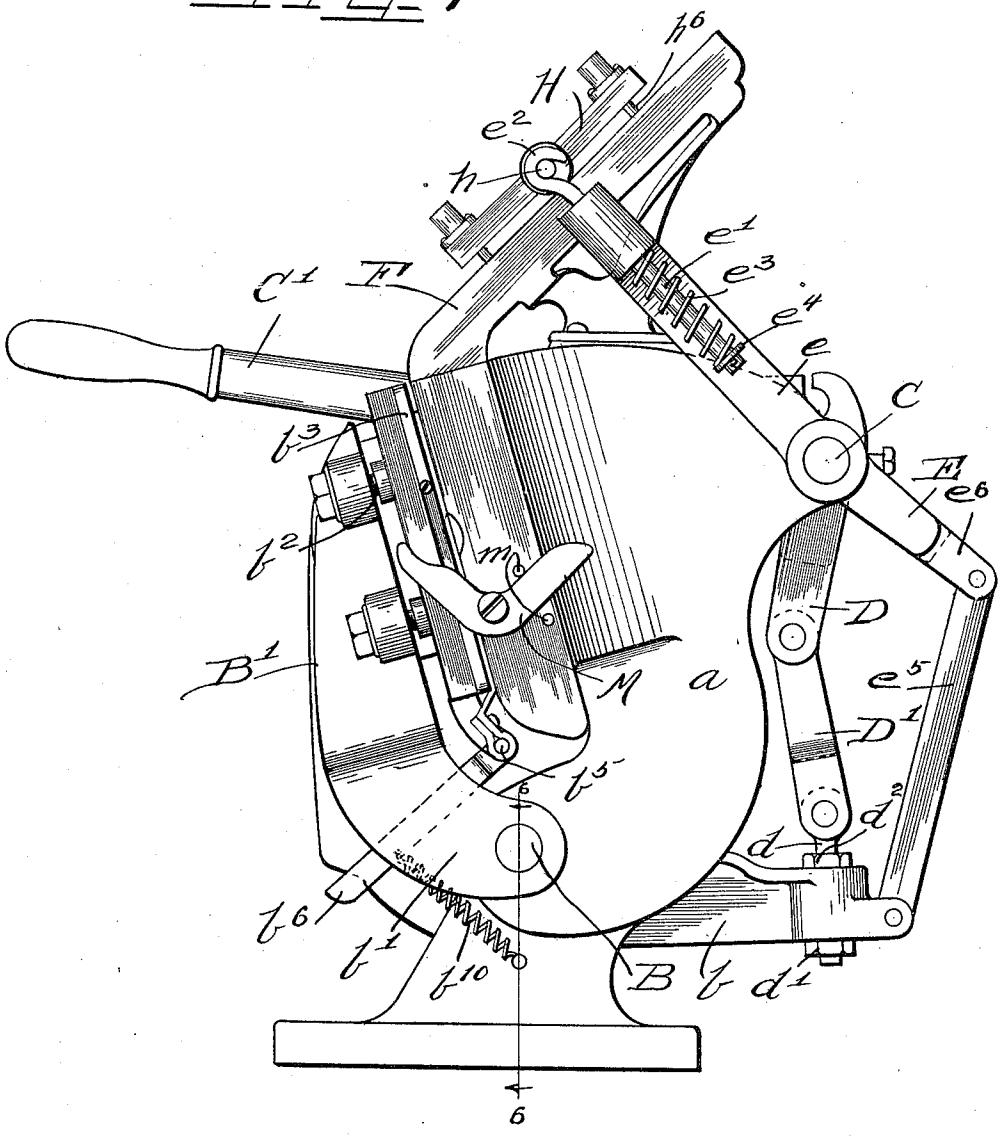
APPLICATION FILED NOV. 11, 1908.

1,006,762.

Patented Oct. 24, 1911.

7 SHEETS—SHEET 1.

Fig. 1



Witnesses

J. H. Angell.

D. E. Hannah

Inventor

Gustave Lidseen.

by Charles Wiles Atty.

G. LIDSEEN.

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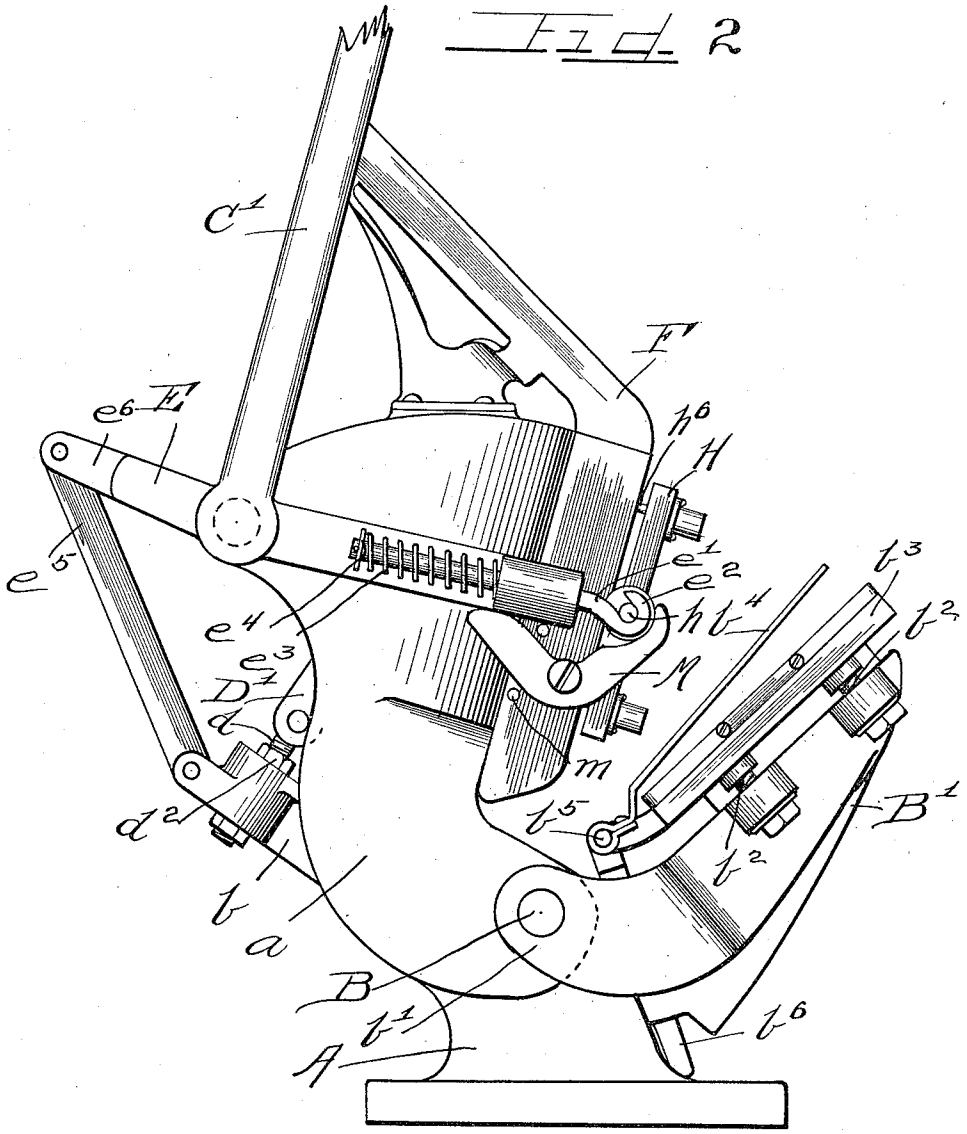
7 SHEETS—SHEET 2.

Fig. 2



Witnesses

J. H. Angell.

W. E. Hamnah

Inventor

Gustave Lidseen.

by Charles Fiers

Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

G. LIDSEEN.

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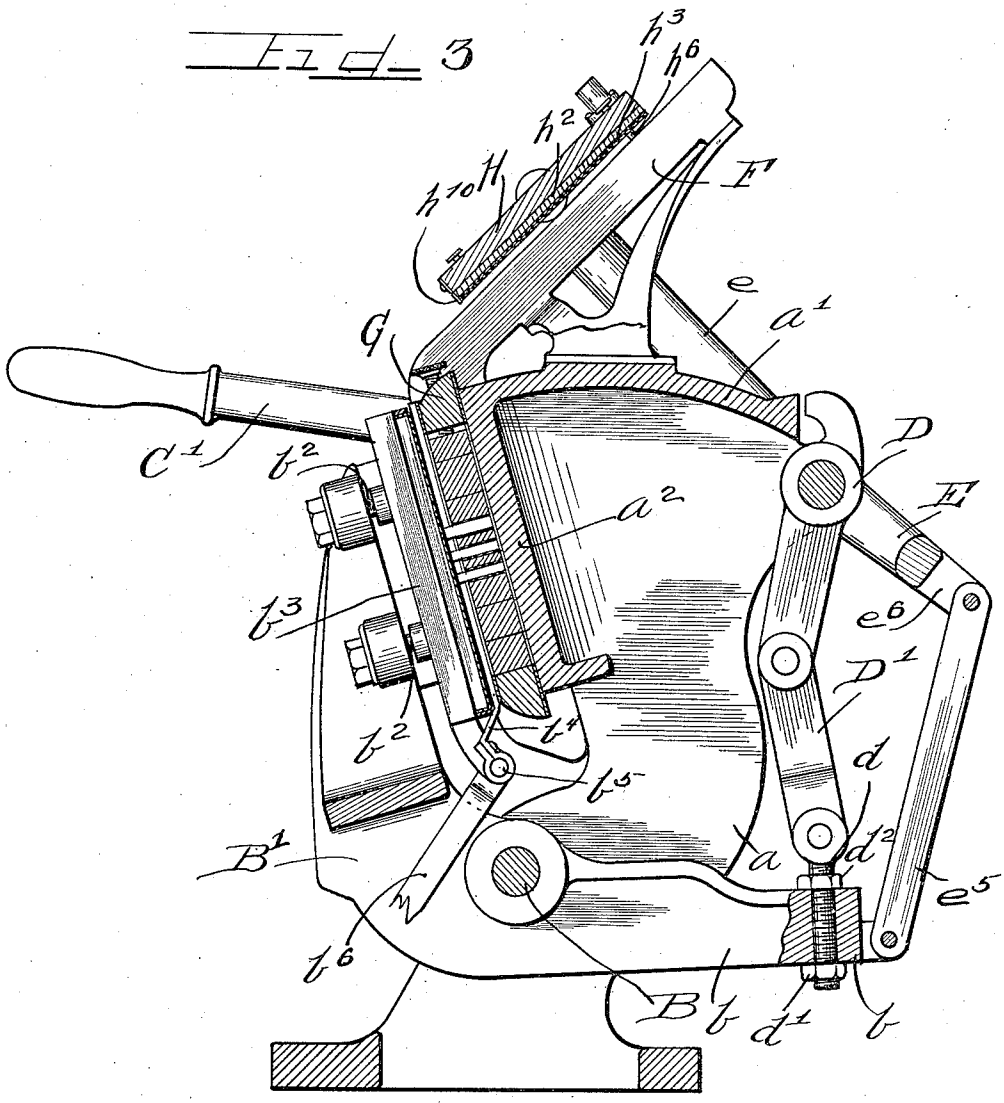
7 SHEETS—SHEET 3.

Fig. 3



Witnesses

J. H. Angell.

S. E. Hannah

Inventor

Gustave Lidseen.

by Charles W. Fiss Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

G. LIDSEEN.

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7 SHEETS—SHEET 4.

Fig 4

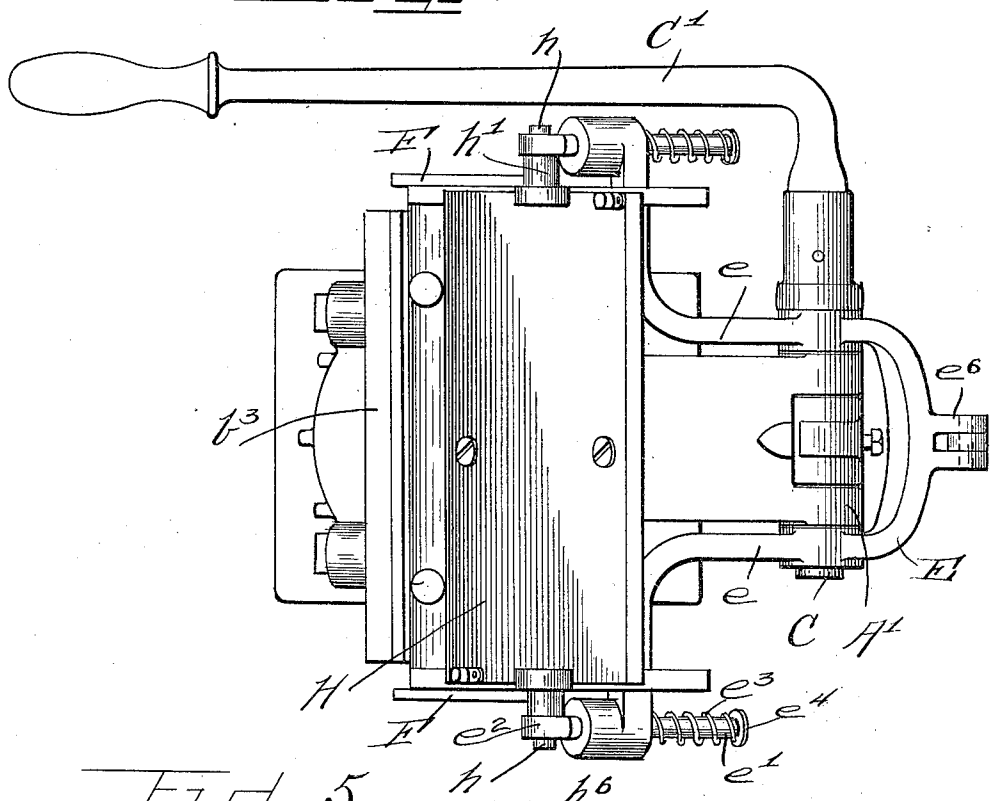
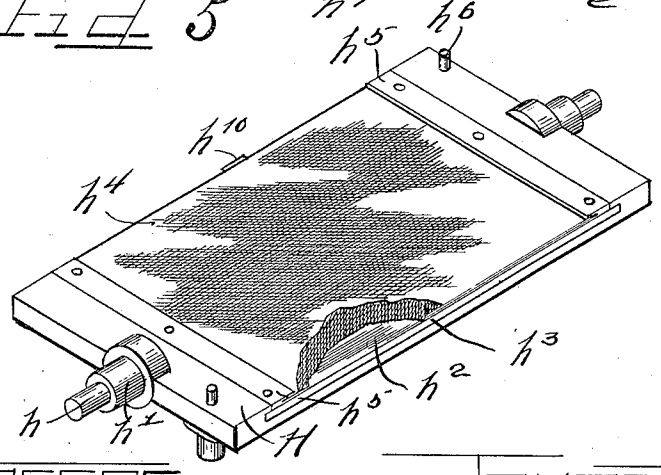


Fig 5



Witnesses

J. H. Angell.

D. E. Hannah

Inventor

Gustave Lidseen

by Charles A. Fiers

Atty.

G. LIDSEEN.

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7 SHEETS—SHEET 5.

Fig. 6

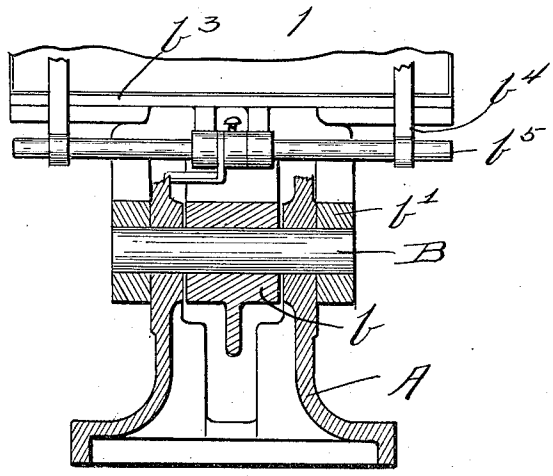


Fig. 7

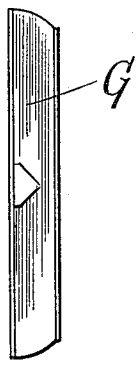
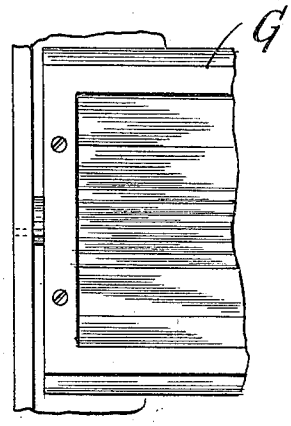


Fig. 8



Witnesses

J. V. Angell.

J. E. Hannal.

Inventor

Gustave Lidseen.

by Charles Fitch. Atty.

G. LIDSEEN.

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7 SHEETS—SHEET 6.

Fig. 9

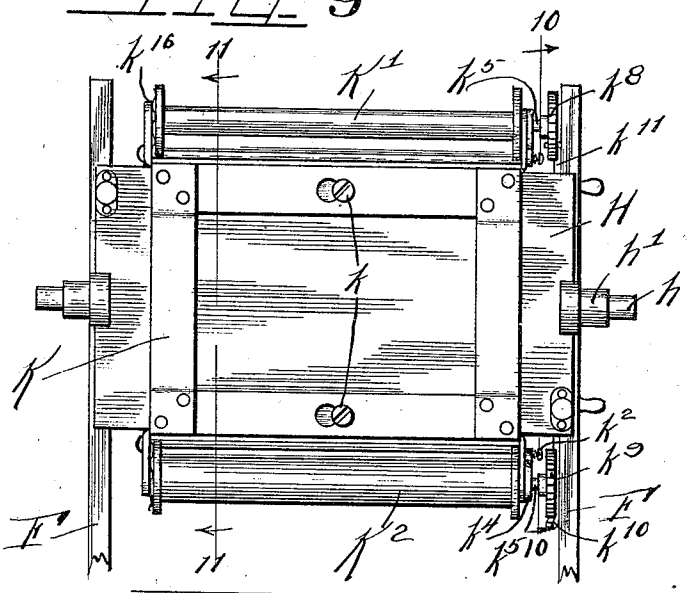


Fig. 10

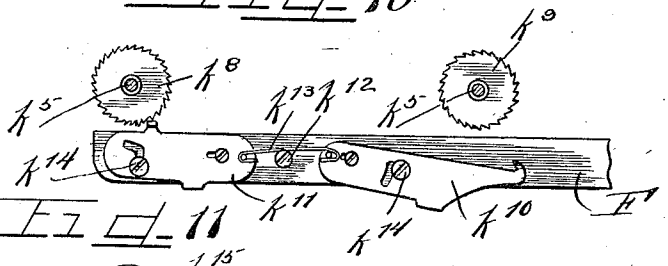


Fig. 11

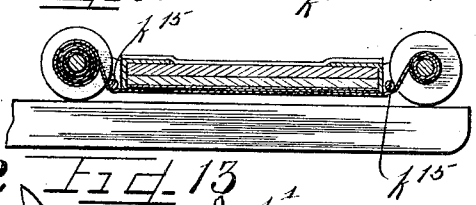


Fig. 12

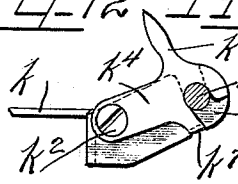


Fig. 13

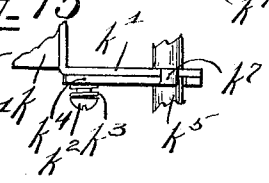
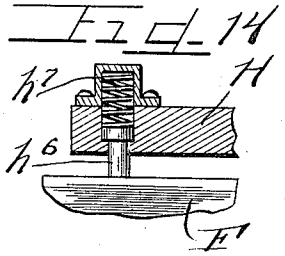


Fig. 14



Witnesses

J. W. Angell

W. E. Hannah

Inventor

Gustave Lidseen.

by Charles W. Fries.

Atty.

G. LIDSEEN.

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7 SHEETS—SHEET 7.

Fig. 15

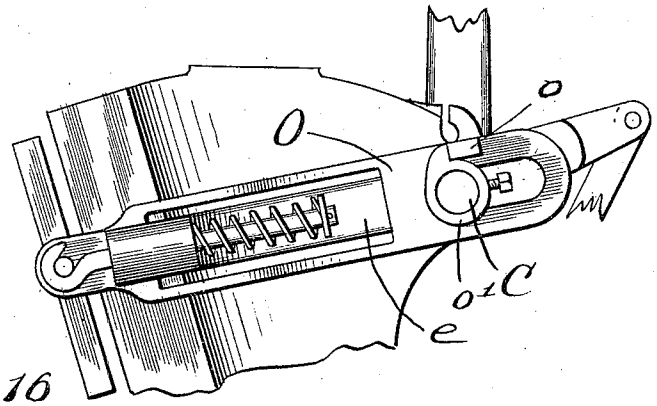
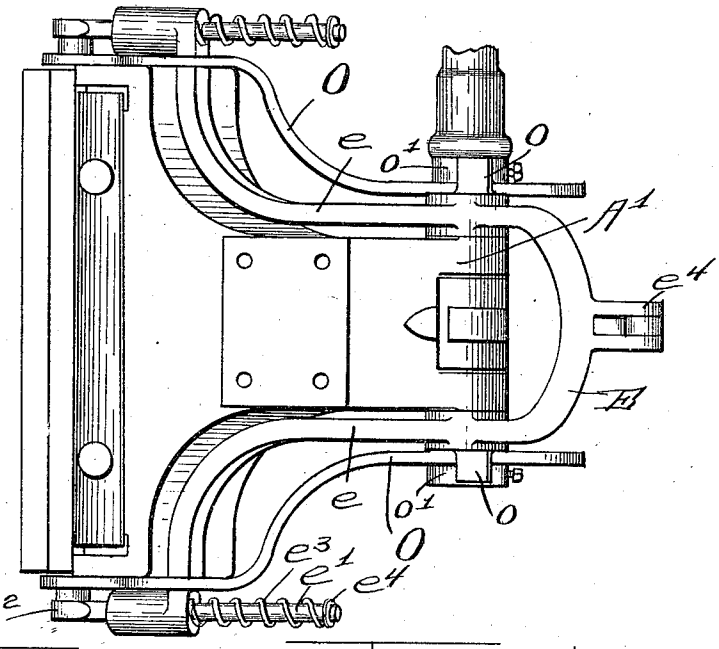


Fig. 16



Witnesses

J. H. Angell.

L. B. Hannah

Inventor

Gustave Lidseen.

by Charles Sellers.

Atty

UNITED STATES PATENT OFFICE.

GUSTAVE LIDSEEN, OF CHICAGO, ILLINOIS.

PRINTING-PRESS.

1,006,762. Specification of Letters Patent. Patented Oct. 24, 1911.

Application filed November 11, 1908. Serial No. 462,130.

To all whom it may concern:

Be it known that I, GUSTAVE LIDSEEN, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, 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 of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to afford a printing press of cheap and simple construction, in which the type are inked by means of a ribbon which is supplied with ink by an inking pad, thereby enabling the type to be very uniformly inked and permitting change in the color of the ink to be effected readily by the exchange of the pads and ribbons.

It is also an object of the invention to afford an exceedingly simple actuating means for operating the press, simultaneously actuating the inking pad and inking ribbon (as the case may be), and to afford means for applying uniform and regulable pressure on the type in printing.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a side elevation of a printing press embodying my invention. Fig. 2 is a view in elevation of the opposite side of the press with the bed turned down. Fig. 3 is a central vertical section of the same. Fig. 4 is a reduced top plan view of the same. Fig. 5 is a perspective view partly broken away of the inking pad showing the same removed from the machine. Fig. 6 is a section on line 6—6 of Fig. 1. Fig. 7 is an end elevation of the chase showing the same removed from the press. Fig. 8 is a fragmentary front elevation thereof. Fig. 9 is an enlarged top plan view of a part of the inking mechanism and illustrating the ways for the inking rolls and the shaft. Fig. 10 is a section taken on line 10—10 of Fig. 9. Fig. 11 is a section taken on line 11—11 of Fig. 9. Fig. 12 is an enlarged detail view of the latch for releasing the ribbon roll. Fig. 13 is a top plan view of the same. Fig. 14 is an enlarged section taken through the inking pad showing one of the push pins in elevation. Fig. 15 is a fragmentary detail illustrating a modification of the mechanism for applying pressure of the inking pad or ribbon on the type. Fig. 16 is a fragmentary top plan view of the same.

In the drawings said machine comprises a base A, having, as shown, an upwardly extending cast metal frame or standard integral therewith of suitable height and comprising side walls a, and connected at the top with the arched web a', and also connected by means of an integral flat web a^2, which inclines obliquely downward and rearwardly, as shown in Fig. 3, and is faced off to afford a plane surface to support the chase with the type therein.

Pivotally supported on a transverse shaft B, extending through said standard, is a movable bed or jaw B′, also affording a flat face complemental with the flat face of the chase bed a^2, and as shown, integrally connected at the lower edge of said bed or jaw B′ and projecting between the sides of the standard is a lever b, through which the shaft B, extends. Side or cheek plates b', are integral with the jaws and extend outside the standard and are also apertured to receive said shaft. Adjustably secured on said bed or jaw B′, by means of set screws b^2, is a bed plate b^3, upon which the paper rests in printprinting and as shown, clamping bars b^4, one at each end of said plate, are provided and pivoted on a shaft b^5, which extends through the lower ends of said clamping bars or fingers, and as shown, a lever b^6, is secured on said shaft b^5, and acts by gravity in part and a spring b^{10} to actuate the clamping bars to hold the papers on the bed plate b^3, and the end of said lever b^6, engages on the base when the jaw is swung down to lift the clamping fingers from the printing face.

Journaled in a rearward extension A′, of the press frame, is a horizontal shaft C. This, as shown, is operatively engaged by an actuating lever C′, directed at right angles therewith and extending alongside of the press. Rigidly secured on said shaft, and fitting loosely in a suitable notch or space provided in the rear portion of the frame through which said shaft extends, is a toggle bar D, the lower end of which is pivotally connected with the upper end of a toggle bar D′, which is pivotally engaged upon an eye bolt d, threaded in the rear end of the lever b, and as shown, is provided with jam nuts d'—d^2, so that upward movement of said lever C′, swings the joint in said toggle levers inwardly, elevates

the lever b, and opens the press, while downward pressure on said lever tends to force said toggle bars D—D′, into alinement to close the press and exert a printing pressure on the type.

Journaled upon the shaft C, is a yoke E, the arms e, of which, as shown in Fig. 4, extend forwardly and then laterally to the sides of the press, and forwardly along the same, and as shown in Figs. 1, 2 and 4, said yoke arms are provided at their forward ends with an aperture extending longitudinally therethrough and through which extends a stem e', provided at its outer end with a hook e^2, and provided, as shown, with a spring e^3, which presses against a suitable projection or head on the end of each arm and against a stop e^4, on the end of the stem and acts to draw said hooks inwardly. Integral with said yoke is a rearward extension e^6, which is vertically slotted, as shown, and between the arms of which is connected a link e^5, the lower end of which is similarly connected in a slot in the rear end of the actuating bed lever b, so that when the toggle bars D—D′, are flexed in opening the press, the upward movement of the rear end of the lever b, necessitates (because of said link e^5) the downward movement of the outer ends of said arms carrying the inking mechanism over the type thereby.

Extending upwardly upon each side of the press are ways F, which incline rearwardly, the angle, as shown, being approximately 45°, although, of course, this may vary, and as shown, said ways at their lower end come in alinement approximately with the outer face of the chase G, and the type set therein, thus projecting beyond the flat face of the bed for the chase, and are rounded over at the angle, as shown.

The inking plate or frame, as shown in Figs. 3, 5, and 9, comprises a metallic plate H, having in each end thereof a central gudgeon h, on which is provided a roller h', to track on said ways, and as shown, the inking face of said plate affords a recess milled under at the ends to receive therein a pad comprising a metallic plate h^2, on which is laid a more or less resilient sheet h^3, of suitable material and over which is stretched a piece of fabric h^4, similar to type ribbon, adapted to contain ink. Said plate h^2, sheet h^3, and fabric are engaged together at the ends by means of metallic clamping bars h^5, which are engaged to the plate h^2, by means of screws or other suitable means and lap over the sheet and fabric. This construction enables the inking pad to be slid out of the carrying frame affored by the plate H, thus permitting colors of ink to be quickly changed by merely substituting one inking pad for another of different colored ink. A stop h^{10}, is provided on the lower edge of the inking frame to prevent the inking pad sliding therefrom during the movement of the inking frame. Said inking plate or frame is carried on the forward end of the yoke arms e, by means of the hooks e^2, which engage the gudgeons h, and as shown, said pad is conveniently provided at diagonally opposite corners with push pins h^6, the construction of which is clearly shown in Fig. 14, and which extend through said plate H, and are engaged on the top by a spring h^7, which acts to force the same outwardly, said pins serving the double purpose of affording a bearing on the ways while the pad is being actuated, and also of affording a bearing on the ends of the chase when inking pressure is applied to the type. Of course, the inking pad alone may be used if desired. Conveniently, however, type ribbon of considerable width is used. For this purpose, as shown, a metallic frame K, is removably engaged upon the back of the inking pad by means of set screws k, which engage through slots in said frame and in the pad plate, and engaging at the corners of said frame, and projecting longitudinally of the travel of the pad, are brackets k', notched on the upper side, as shown in dotted lines in Fig. 12, and pivotally engaged to each of said brackets by means of the pivot screw k^2, is a spring pressed latch plate k^4, the spring k^3, of which is engaged on said screw and acts to force said latch plate into frictional bearing against the bracket. Said latch plate, as shown, is provided with a downwardly directed notch corresponding with the upwardly directed notch in the bracket, and is adapted to interfit over the pintle k^5, for the ribbon roll and extending upwardly from said latch plate, is a short lever k^6, whereby said latch plate may be lifted if first pushed away from the bracket k', to release therefrom the hook k^7, which, as shown, is integral with the latch plate, and projects slightly beneath the bracket, fitting in a suitable notch therein. As shown, four of said brackets and latch plates are provided to permit the inking ribbon rolls K′—K² to be journaled on the pad parallel the upper and lower sides thereof. A ratchet wheel k^8—k^9, is rigidly secured on the shaft or pintle k^5, for each of said rollers, and adjacent one of said ways F, and adjustably secured on said ways, are hooked detents adapted for adjustment to permit one to engage the ratchet k^8, of one roll to rotate the same, thus winding the ribbon from the roll k^9, when the other detent is out of operative position and with reversal to enable the ratchet k^9, to be engaged by its detent when the detent for the ratchet k^8, is out of operative position, thus reversing the rotation. Numerous forms for said detents may be provided which would serve the purpose. Conveniently, however, said detents comprise a slotted plate k^{10},

and a slotted plate k^{11}, each of which is provided with a hook on the upper edge thereof directed to engage the teeth on the respective ratchets when properly adjusted for that purpose, and slidably engaging the adjacent ends of each of said plates and engaging also on the guide way by means of a screw k^{12}, is a spring k^{13}, which acts to hold said detents in adjusted position. Set in said guide way also and extending through L shaped slots in each of said plates, are set screws k^{14}, which permit either of said detents to be thrown upwardly into position to engage the corresponding ratchet. As shown also, small guide rolls k^{15}, are provided in alinement with the engaging face of the pad, thus directing the ribbon over the inking face of the pad and drawing true thereover.

The operation is as follows: When the pad only is used, the inking rolls may, of course, be removed by releasing the latch k^4, and lifting out the rolls, thus exposing the surface of the pad for printing. The chase with the type therein having been dropped into the press, as shown in Figs. 7 and 8, the V shaped projection on each end thereof drops into a suitable notch in the sides of the press and acts to position said chase accurately to bring the flat inner face thereof into positive bearing with the chase bed of the machine. When upward movement of the lever C′, occurs, the movable jaw of the press is thrown down as shown in Fig. 2, while the connecting link e^5, in the rear end of the lever b, and the yoke E, forces the yoke arms downwardly carrying the inking pad over the face of the type, as shown in Fig. 2, and to central position, at which point bent levers M, pivotally engaged on the sides of the press engage the rollers on the gudgeons of the pad, and simultaneously engage beneath the ends of the yoke arms. Further upward pressure of necessity serves to force said yoke arms down more firmly until the inner end of said bent levers engage in stops m, secured on the frame, in consequence, limiting the further downward movement of said arms, but before so engaging said stops, the inclined face of the outer arm of said lever acts to press the pad inwardly by engaging said rollers on the inclined face thereof, thereby forcing the pad upon the type. When the movable jaw is swung downwardly, as shown in Fig. 2, the lever b^6, at its lower end engages upon the bed, thus limiting its further downward movement, and in consequence the clamping fingers are thrown upwardly to permit the insertion therebeneath of the paper or other material upon which it is desired to print. The weight of the lever b^6, together with the weight of the fingers acts to instantly swing said fingers downwardly into engaging position when the jaw begins its upward movement, such upward movement of the jaw being occasioned by a corresponding downward swing of the lever C′, which of necessity elevates the yoke arms, thus swinging the pad from between the chase and the paper about to be applied thereon. Of course, in printing in different colors, should it be desired to employ another colored ink it is only necessary to remove the pad and its ribbon therewith and substitute another in its stead, extra pads with ribbons being provided for additional colors, if desired. In inking, however, the machine may be very rapidly operated, inasmuch as the upward movement of the lever C′, causes the pad carrying the inking rolls thereon to swing downwardly past the type faces, at which time the ends of the lever M, engage the hooked end of the yoke arms as before described, forcing the pad with its ribbon inwardly to ink the type, after which, with the downward movement of the lever C′, the inking mechanism swings upwardly from between the chase and the printing pad. In either the upward or the downward movement of the pad along the ways, the respective rolls for the ribbon are actuated. If the detent on the plate K^4, is thrown upwardly into position to engage the ratchet k^8, as the pad is returning to the limits of its upward travel, the upper roll will operate to wind up the ribbon while the lower roll will unwind, the resistance to unwinding being increased by the insertion of any suitable spring resistance k^{16}, inserted between one end of the roller and its bracket. If the detent on the plate k^{11}, is thrown out of operative position and the detent on the plate k^{10}, elevated, the feed of the ribbon occurs as the pad with the ribbon thereon moves downwardly, thus in either event, a positive feed of the ribbon is assured and means are provided for reversing the roll of the ribbon at any time it may be desired. Of course, other means may be employed for forcing the inking means upon the type, as for instance, referring to Figs. 15 and 16, the construction may be as before described with reference to the yoke arms e, but, as shown, a strap of metal O, is provided on each side of the machine and slotted to receive the yoke arm e, therethrough, and said strap is also slotted at its rear end to receive the shaft C, therethrough. Said strap engages on the gudgeon H, of the inking pad, as before described, and at its rear end is provided with a laterally directed projection or stop o, positioned to be engaged by a cam o', engaged on the shaft C, closely adjacent said straps, and which act as the lever approaches the upward limit of its upward swing to engage said stops o, and draw the pads forcibly rearward to press the same upon the type.

I do not purpose limiting this application

for patent otherwise than necessitated by the prior art, for many details of construction and operation may be varied without departing from the principles of this invention.

I claim as my invention:

1. In a printing press the combination with the type and paper supporting mechanism of ways secured to the top of the machine, a frame movable on said ways, a removable inking pad secured to the frame, rollers carried on said frame, an inking ribbon on the rollers, ratchet wheels on the rollers and connected actuating pawls secured to one of the ways adapted to be alternately adjusted to engage the respective ratchet wheels to rotate the rollers.

2. A printing press comprising type, a paper support, ways secured to the press, a frame supported on said ways, an inking pad removably secured to the frame, a ribbon frame removably secured to the first named frame, ribbon rollers thereon, a ribbon on said rollers and means secured on the ways for actuating the ribbon rollers.

3. A printing press embracing a pad movable to and from the type as the press is operated, ribbon rolls movable with the pad, a type ribbon thereon, a ratchet wheel connected with each roll and adjustable stationary pawls, one for each ratchet wheel and connected so that one pawl is inactive when the other is in operative position.

4. A printing press embracing a frame, a chase secured thereto, a movable jaw, mechanism for operating the jaw, guides secured to the frame, a pad frame movable on said guides, a pad removably secured to the frame, a ribbon carrier removably secured to the pad frame and a ribbon secured thereto and movable over the face of the pad.

5. In a printing press, a printing mechanism, a pad frame provided with gudgeons at each end, ways adapted to support said pad frame, an anti-friction roller on each gudgeon, spring pressed pins secured to the frame, an inking pad slidably secured in the frame and means for actuating the pad frame.

6. The combination with a printing press of guides secured thereto, a frame movable over said guides, ribbon rolls journaled in said frame, an inking ribbon on said rolls, ratchet wheels secured to the rolls, stationary pawls secured to one of the guides, one for each roll, means connecting the pawls adapted to throw one pawl out of operation when the other is adjusted into position to actuate its roll.

7. In a printing press, a printing mechanism, ways secured to the press a pad frame provided with gudgeons at each end, an anti-friction roller on each gudgeon adapted to track in said ways, spring pressed pins secured to the frame, means for actuating said pad frame, an inking pad slidably secured in the frame, a frame detachably secured to the pad frame, rolls thereon, an inking ribbon on the rolls and extended across the face of the pad and mechanism for rotating one of the rolls each time the frame is actuated in inking.

8. A printing press comprising printing mechanism, a pad frame, a pad secured therein, a frame detachably secured to the pad frame, arms secured to the frame, shafts journaled in the arms, a latch secured to each arm adapted to retain the shafts in place but releasable to release the shafts, an inking ribbon secured to the rolls and movable over the face of the pad and means for actuating the pad frame.

9. In a printing press, the combination with the printing mechanism of a lever for actuating the same, a pad frame, a pad releasably secured therein, a ribbon frame detachably secured to the pad frame, rolls detachably secured to the ribbon frame, spring latches for securing the rolls in place, a ribbon on the rolls and extended over the pad and means for actuating the pad frame.

10. In a printing press the combination with the printing mechanism of a lever for actuating the same, a pad frame, a pad releasably secured therein, a ribbon frame detachably secured to the pad frame, rolls detachably secured to the ribbon frame, spring latches for securing the rolls in place, a ribbon on the rolls and extended over the pad, ways for the pad frame to travel on, pawls secured thereto for actuating the rolls to move the ribbon over the pad and means for actuating the pad frame.

11. In a printing press the combination with the type and impression jaw of an inking mechanism comprising an inking pad and a type ribbon movable as a whole with the pad and movable relatively of the pad to receive ink from the pad and means connecting the inking mechanism to move simultaneously with the impression jaw.

12. In a printing press the combination with a chase, of an impression jaw for carrying the paper, a removable inking pad, type ribbon rollers journaled thereon, adjustable detents for rotating the ribbon rollers, and a single lever operatively connected to actuate said pad and ribbon to ink the press and to close the jaw.

13. In a printing press the combination with a chase for the type of an impression plate for carrying the paper, a movable inking pad, removable type ribbon rollers journaled thereon, type ribbon thereon, adjustable detents for feeding the ribbon and a single lever operatively connected to ink and to close the press.

14. In a printing press the combination with a positively supported chase for type

of an impression plate for carrying the paper, an inking pad, removable type, ribbon rollers journaled on the pad, an inking ribbon on the rollers, adjustable detents adapted to engage said rollers for shifting the position of the ribbon, a single lever operatively connected to ink and to close the press, and automatically operated clamping means for engaging the paper.

15. In a printing press the combination with the type chase, and impression jaw, of an inking device comprising a pad frame, a pad slidable therein, a frame removably secured to the pad frame, rollers journaled therein, means for releasably securing the rollers in place, a type ribbon secured to the rollers and extending over the face of the pad and means for intermittently moving the type ribbon across the pad.

16. In a device of the class described a frame, a type chase secured thereto, an impression jaw pivoted to the frame, an inking pad pivoted to the frame, a type ribbon movable therewith and means for moving the type ribbon relatively of the pad and across the face of the pad.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

GUSTAVE LIDSEEN.

Witnesses:
K. E. HANNAH,
LAWRENCE REIBSTEIN.