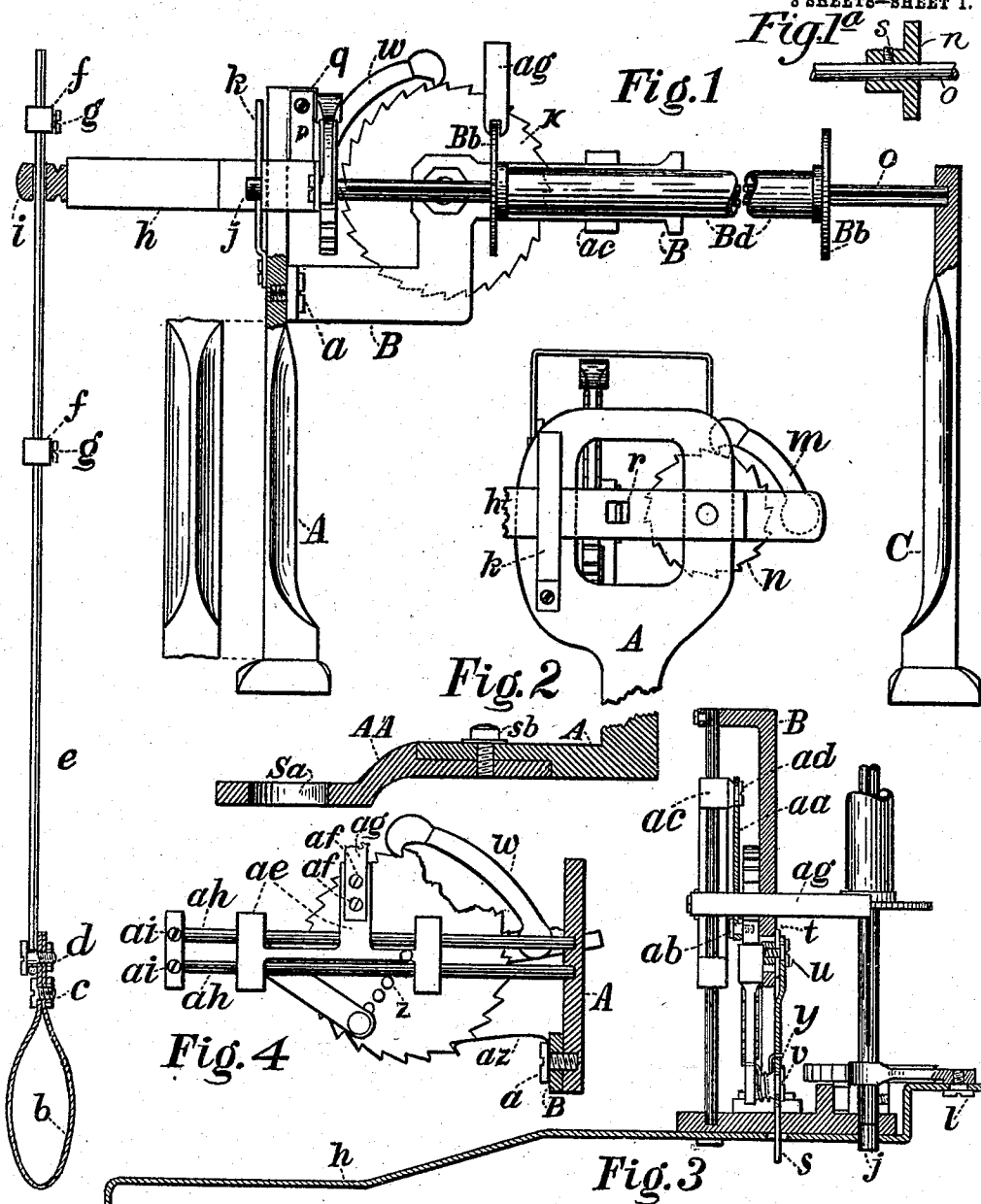


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 TYPE WRITING ATTACHMENT FOR USE ON PLATEN PRINTING PRESSES.
 APPLICATION FILED MAR. 10, 1909.

937,431.

Patented Oct. 19, 1909.

3 SHEETS—SHEET 1.



Witnesses:
 Gordon M. Fraser
 Frederick Van Horn

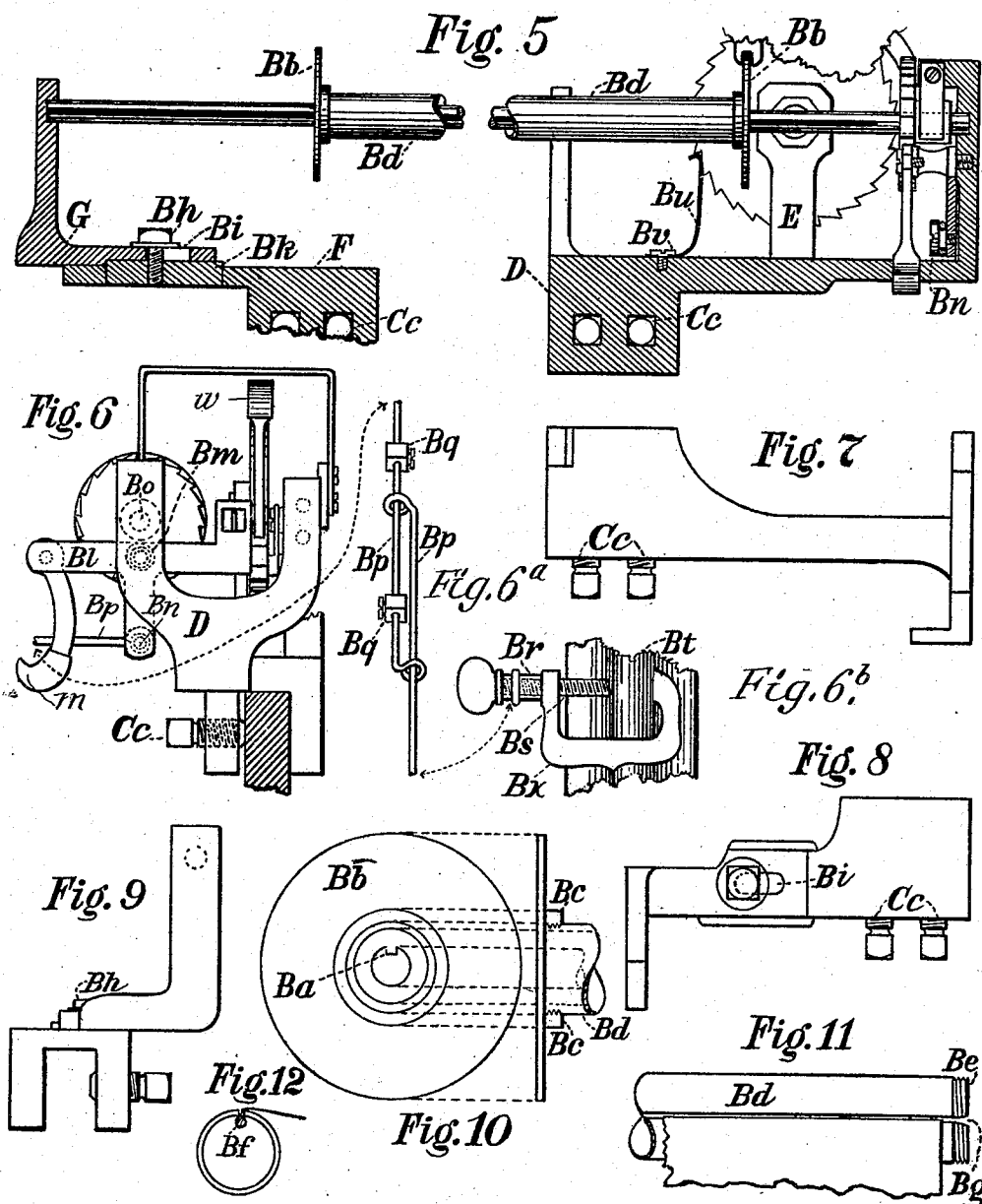
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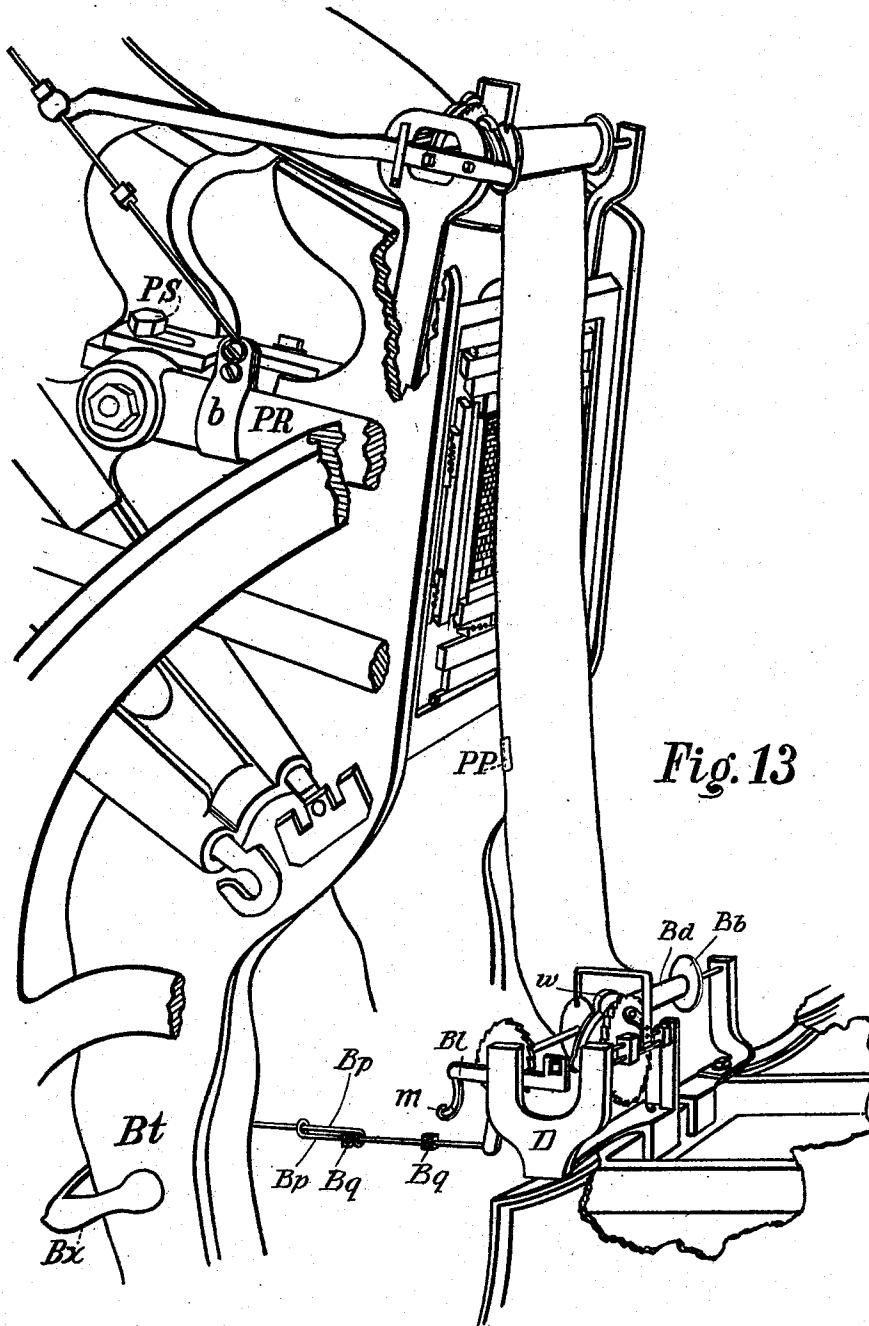


Fig. 13

Witnesses:
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UNITED STATES PATENT OFFICE.

CHELSEA C. FRASER AND GUY W. LILLEY, OF SAGINAW, MICHIGAN.

TYPE-WRITING ATTACHMENT FOR USE ON PLATEN PRINTING-PRESSES.

937,431.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed March 10, 1909. Serial No. 482,602.

To all whom it may concern:

Be it known that we, CHELSEA C. FRASER and GUY W. LILLEY, citizens of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented a new and useful Type-Writing Attachment for Use on Platen Printing-Presses, of which the following is a specification.

Our invention embraces the creation of an appliance whereby printing-presses of the kind mentioned above are, with their regular and special accessories and equipment, utilized for the production of imitation-type-written letters in multiple quantities.

The objects of the machine are: First, to provide a means for inking the types which shall have for its purpose the production, as soon as printed, of non-offsetting impressions, immediately and thoroughly dry for all practical purposes, thus enabling instant delivery of an order and its instant use by the client, saving the several hours' delay for drying made arbitrary by present methods of inking in this line of work. Second, to provide the printing-press (nearly all professional printers are supplied with suitable types) with a pre-inked ribbon intermittently moving, between impressions, across the face of the type-form, after the principle of a ribbon on a commercial typewriter, thus to secure a fresh inking-surface at each impression. Third, to provide a means whereby said ribbon may reciprocate, when at its ends and continue to wind in the reverse direction, alternately filling one spool and emptying the other, by the continued and natural action of the printing-press. Fourth, to provide in the ribbon a uniform oscillating-reciprocating motion, intermittently between strikes or impressions of the types, whereby the type-lines, when type-form is long and necessarily placed horizontally in the chase, may find at each new impression a change of ribbon inking surface throughout their entire length, the same as when the type-form is locked up vertically. In an attachment of this character the movements of rotation and oscillation, by occurring alternately, give a much better mechanical action than if they took place at the same time, the latter method causing a pull on the ribbon from two different directions at the one time, obviously causing a friction absent in our arrangement. Fifth, to provide, for the double purpose of economy of ribbon and of uniformity of inking, means

by which the afore-mentioned intermittent oscillating-reciprocating movement of the ribbon may be controlled and adjusted to certain adequate degrees or extents at the will of the operator, according to his needs, as emphasized by the width of the type-form in correlation with the width of ribbon used. Sixth, by reason of the fact that printers' clients ordering this kind of work generally wish it to match in color the ribbon or ribbons of their own commercial typewriter or typewriters, so that headings, etc. may be properly and as indistinguishably as possible added to the printed body after such printing is done,—to provide a convenient dis-integral spool whose two flanges, disunited from the spindle, may be quickly connected to a corresponding spindle cored in the new ribbon desired, thus saving much unwinding of the old ribbon and winding of the new each time a change is desired. Seventh, to supply brackets of such construction that when attachment is once connected to the printing-press, and adjusted, the parts in the way for other kinds of printing may be conveniently removed, and replaced again with equal despatch without disturbing the former adjustment. Likewise to provide, by a two-piece bracket, a means for withdrawing and replacing the spools without disturbing their former alinement adjustments. Likewise to provide, by bolt and screw, means whereby, in the matter of communicating connections for transmitting motion between printing-press and attachment, such connections may be readily and effectively separated, and again reconnected, without disturbing their former adjustments. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the entire upper section of the attachment; Fig. 1^a is an elevation of one of the ratchet wheels contributing to rotate the two spools; Fig. 2, an end elevation, partly in section, as seen from the left in Fig. 1; Fig. 3 a plan view of the above, with addition of the missing portion of $\frac{1}{2}$; Fig. 4, a back elevation of the mechanism-producing oscillating movement; Fig. 5, a front elevation of the entire lower section of the attachment, excepting Bp and its connections; Fig. 6, an end elevation of the lower spool movement, showing (in section) how the bracket may clamp to the press frame; Fig. 6^a, a perspective view of the

transmission-wire of the lower spool movement; Fig. 6^b, a back elevation of the press leg (in part) and of the clamp (in full) to which the aforesaid transmission-wire connects; Fig. 7, a plan view of the mechanism bracket, lower section; Fig. 8, a similar view of the opposite bracket F, G; Fig. 9, an end elevation of the last-named; Fig. 10, a plan and projection of one of the spool flanges and its connecting spindle; Fig. 11, a section of the spool spindle, front elevation; Fig. 12, an end view of the preceding; Fig. 13, a perspective of the complete attachment in operation, on a Gordon printing-press.

Similar letters refer to similar parts throughout the various views.

Upper section.—Practically all platen printing-presses have connecting rods which communicate movement of an intermittent character between the platen, and the chased, or form-rollers. It is one of these connecting rods that we utilize for securing movement for the upper section of our attachment.

A, AA, B and C constitute the framework, or brackets. B attaches to A by screws *a* and *a*, Figs. 1 and 4. At point *Sa* is a slot which receives press screw PS, Fig. 13, by means of which the entire bracket, as assembled, may be shoved backward or forward sufficiently to bring its spool in alinement with the spool of the lower section.

Sb is a screw holding A and AA together. Its withdrawal admits the removal and replacement of A, quickly, in conjunction with a like treatment of C (which works similarly), without readjustment or realinement of the spools. The removal of C alone permits the unseating of that end of the spool shaft, and the withdrawal and replacement of the spool, when desired. Brackets A and C could differ from these shapes, in order to fit other kinds of platen printing-presses, but the two-piece principle named should be maintained.

A strap-clamp, *b*, engages press rod PR, Fig. 13, by bolt *c*, Fig. 1. To *b* is pivoted by loop and shoulder-bolt *d*, transmission wire *e*. To *e* are attached two stop-collars, *f*, *f*, which are adjusted on *e* by set-screws *g*, *g*. These stop-collars are for the purpose of diminishing the movement of PR, as communicated to *h*, the main lever, by *e* passing freely through a hole in *i*, a swivel-head riveted loosely to the extremity of *h*. *h* pivots to A by a short stud, *j*, which is frictioned half-way into A, and *h* is retained from wobble by confiner *k*, connected by screw to the outer face of A. This end of *h* is inset, after passing A, as shown in Fig. 3. At the extreme end of this inset is pivoted, by shoulder-screw *l*, a pawl, *m*, Fig. 2, which engages with rotary ratchet wheel *n*. *n* is fastened on spool-shaft *o*, Fig. 1, by a set-screw *s'*, Fig. 1^a, that does not rise above

the surface of *n*'s hub (next to A), thus giving a uniform friction bearing for band-spring *p*, which fastens above, by screw, to a projecting lug, *q*, of A. In this manner a uniform friction is obtained on *o* which will restrain *n* from back-slipping when *m* rises to set, and which, furthermore, will keep the spool from turning from mere weight of active ribbon, when *m* is put out of commission and *o* is in reverse. Shaft *o* is grooved or key-wayed approximately its full length, to receive tongue, or key, *Ba*, Fig. 10, one of which is connected to each spool flange, *Bb*, Fig. 10. The flanges support a circular threaded lug, *Bc*, which engages with spool spindle *Bd* by threaded end *Be*, Fig. 11. The ribbon is locked by a wire, *Bf*, Fig. 12, which is sewed to the ribbon across each of its two ends, the wire catching on the underside of the spindle slot *Bg*, Fig. 11, across its ends, and runs into slot *Bg*, Fig. 11. The bearing of *o* is had in holes half-way through A and C, Fig. 1, the hole in A really running clear through originally, but half its length having been filled by *j*, against which *o* butts.

At points *r*, Fig. 2, is a rectangular opening through *h*. Through this opening projects the end of a lever, *s*, the space seating it being wide enough to take up all side play of *s*. See Fig. 3. *s* pivots to washer-screw *t* by shoulder-screw *u*. This lever sustains, by shoulder-screw *v* acting as a pivot, oscillator pawl *w*, Fig. 1, which drives oscillator ratchet *x*, same figure. Coil-spring *y*, engaging its ends with the shank of *w*, and body of *s*, through small holes, and wound about the offset hub of *w*, prevents *w* from slipping. *x* revolves in B upon its own hub, and is retained in position by washer-screw *t*, Fig. 1. It has six tapped holes—of which *z*, Fig. 4, is one—in its back surface, beginning at the center and running straight outward at uniform distances from one another. These holes supply the means of gaging the extent of the oscillating movement to corresponding fixed degrees through the medium of: the connecting rod, *aa*, pivoting to *z* by shoulder-screw *ab*, Fig. 3, and pivoting its other end to jacket-head *ac* by means of a similar screw, *ad*; *ac* riding upon two guide-rods, *ah* and *ah*, which rest half-way in A at the one end and are held by set-screws *ai*, *ai*, Fig. 4, in B, at the other end; a perpendicular support, *ae* (a part of *ac*), to which is attached, by screws *af*, *af*, spool conveyer *ag*, Fig. 3, which straddles the adjacent spool flange. (A band-spring, *az*, with elbow-jaw, connecting to B by *a*, Fig. 4, keeps *x* from back-slipping while *w* rises for set.) It will be seen, by this arrangement, that at each forward movement of the press platen toward the type-form, PR will communicate motion to lift *h*, thereby drawing down *m*, and rotating the spool, and at the

same time raising and setting *w*; and that, as the platen recedes from the type-form, *h* will be lowered, thereby drawing down *w* and driving the spool in oscillation, while *m* sets itself.

Lower section.—Inasmuch as practically all platen printing-presses are constructed with a movable chase-bed acting in conjunction with a stationary platen-bed, or vice versa, it will be observed that a means is thus established for securing an intermittent movement to an attachment which may be fastened to either the bed or platen framework of the press in connection with the other part. Our treatment makes use, in this instance, of a Gordon press, which has a movable chase-bed and a stationary platen-framework, but movable platen. D, E, F and G are the brackets of this portion of our attachment. They may be constructed of different outlines to accommodate themselves to connection with other makes of platen printing-presses; but the two-piece feature of the left bracket (embraced in F and G, Fig. 5) in which screw *Bh* engages slot *Bz* is to be maintained in all forms of this bracket, to admit of the convenient release of the spool, and its replacement, without danger of disturbing the former alinement adjustment. An uprising flange, *Bk*, on each side of F, makes a channel in F in which G slides and by which it is retained in alinement with D, without disturbing clamp set-screws *Cc*, connecting attachment to the press framework. The action of this lower section, and the construction of its parts, with the exceptions following, are identical with the upper section.

The main lever, *Bz*, Fig. 6, is of a T pattern, and pivots by shoulder-screw *Bm* to the inner face of the forward upright of D, at a point just below spool shaft *Bo*. Pivoted by loop to the lower extremity of *Bz*, by shoulder-screw *Bn*, is transmission-wire *Bp*. This is in two sections, each engaging the other by loop, as illustrated in Fig. 6^a. One of the pieces carries two set-screwed stop-collars, *Bq*, one of which rests within the space between the loops and the other beyond them. This method of diminishing the motion of the press, at this end, permits of flush connections at each end of the transmission-wire, made desirable by the lack of space and character of the connections. The opposite end of *Bp* pivots by loop with a loose collar, *Br*, which encircles the clamp screw, *Bs*. The clamp, *Bx*, may be affixed permanently to the press-leg, as shown in Fig. 6^b. An elbow-jawed band-spring, *Bu*, Fig. 5, performs the same office as *az*, Fig. 4, but is seated on D by screw *Bv*. The movement of this section of the apparatus is in exact accord with its upper mate; the respective spools oscillate in the same plane, and at the same time; and they also rotate in sympathy by the pawl of the one rotary

ratchet wheel being thrown back out of action, while its contemporary remains active and unwinds the ribbon on the other spool as it winds it up upon its own spool. The ribbon remains across the face of the type at all positions of the press platen; thus it is always in printing position and ready to receive an impression. A narrow strip of oil-cloth, PP, Fig. 13 sewed to the marginal face of the ribbon near its two ends, will act as a flag or alarm to the pressman and notify him when to reverse the winding by a throwing off of the active pawl and a throwing on of the inactive pawl.

We are aware that prior to our invention, for the production of imitation-typewritten letters platen printing-presses have been used in connection with a short length of ribbon receiving its ink directly or indirectly from the form-rollers of the press, and attached rigidly to either the type-form, the chase, or the grippers. We, therefore, do not claim a right to Letters Patent in the use of a ribbon or fabric, for the purpose specified, depositing ink upon the matter to be printed through the medium of a roller supply, but

We claim:

1. In a printing-press attachment for printing from an inked ribbon, the combination of ribbon-carrying spools, detachable stationary brackets or holders supporting spool-shafts, non-oscillating spool shafts, means for maintaining an inked ribbon between, and in interception of, the type-form and platen, both when the type-form and the platen are farthest apart, and closest together, and at intermediate distances; and means for rotating and oscillating said spools.

2. In a ribbon-inking attachment for a printing-press, the combination with the framework of the press, of detachable stationary brackets for spool-shafts, spool-shafts mounted in said brackets, spools bearing an inked ribbon on said spool shafts, the spools rotating with and oscillatingly attached to the said shafts, with means for causing such rotatory and oscillatory movements to be intermittent, the rotary movement occurring when the oscillatory actions have temporarily ceased.

3. In a printing-press ribbon-inking attachment, detachable stationary holders acting as supports for spool-shafts, spool-shafts having a longitudinal groove in their peripheries extending to at least one end of each shaft, ribbon-wound spools on the shafts, a tongue splined on each spool and engaging the said groove; and means for causing the spools to oscillate without moving their respective shafts, and to rotate when they do not oscillate, and vice versa.

4. In a printing-press attachment for printing from an inked ribbon, the combina-

tion with the bed-framework of a press and its platen-framework of detachable brackets supporting two ribbon-bearing spools, each pair of said brackets connected by pivot to a lever, a pawl connected to this lever on the one side of its pivot-bearing with the bracket, and an auxiliary lever loosely engaging it by an opening on the other side of its pivot-bearing with the bracket; a means for intermittently rotating the spools through the medium of the pawl; and a means for intermittently oscillating the spools through the medium of the auxiliary lever.

5. In a ribbon-inking attachment in connection with a printing-press, the combination with the framework of the press, of stationary brackets detachably connected to the press, shafts non-oscillatingly set in their bearings in said brackets, spools rotating with and oscillatingly connected to the shafts, an inked ribbon carried on the spools, and means for winding and unwinding the ribbon, and oscillating it, and keeping it fully covering the type-form, regardless of the position of the press platen.

6. In an attachment for a printing-press for printing from an inked ribbon, the combination of the press framework, detachable brackets, grooved spool-shafts, ribbon-wound spools, means for rotating and oscillating the spools comprising a ratchet-wheel set on each shaft, a pawl communicating movement to the ratchet-wheel, a main-lever connecting with the pawl and pivoted to one of the brackets, an auxiliary-lever engaging the main-lever at a point in the latter's length such that its said pivot-bearing with the bracket will come between its connections with the said pawl and the said auxiliary-lever, a ratchet-wheel driven by the auxiliary-lever, a lever pivoted to the ratchet wheel, a sliding jacket connected to the other end of this lever, guide-rods supporting the jacket, an arm fixed to the jacket and engaging with a spool.

7. In a printing-press ribbon-inking attachment, in combination with the press framework, brackets of a detachable nature, spool-shafts journaled in the brackets, spools oscillatingly set on the shafts by tongue and groove and rotating therewith, means for intermittently rotating and intermittently oscillating the spools comprising a ratchet-wheel fixed to each of said shafts, a pawl engaging the ratchet-wheel, a main-lever carrying the pawl, an auxiliary-lever engaging the main-lever, the latter pivoted to one of the brackets, an oscillation-movement-producing ratchet-wheel actuated by the auxiliary-lever, there being a number of threaded axes-holes in the flat surface of said ratchet-wheel, the holes at varying distances from the wheel's center, a lever provided with a threaded pivot to fit any of the said axes-holes engaging the ratchet by this means at one of its ends, a sliding jacket connected with the lever's opposite end, guide-rods sustaining the jacket and fixed in one of the brackets, an arm in engagement with the jacket and straddling a spool flange.

8. In a printing-press attachment for printing from an inked ribbon, the combination of detachable stationary brackets, grooved spool-shafts, a spool on each shaft, each spool consisting of three disintegral parts comprising a threaded hollow spool spindle containing a longitudinal slot, two threaded spool flanges which engage the spindle at its ends; an inked ribbon wound on the spools, a wire fixed to the ribbon across each of its ends and engaging with the slots in the spool spindles; and means for winding and unwinding and oscillating such ribbon, the rotary actions occurring between the oscillatory actions.

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Witnesses:

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