

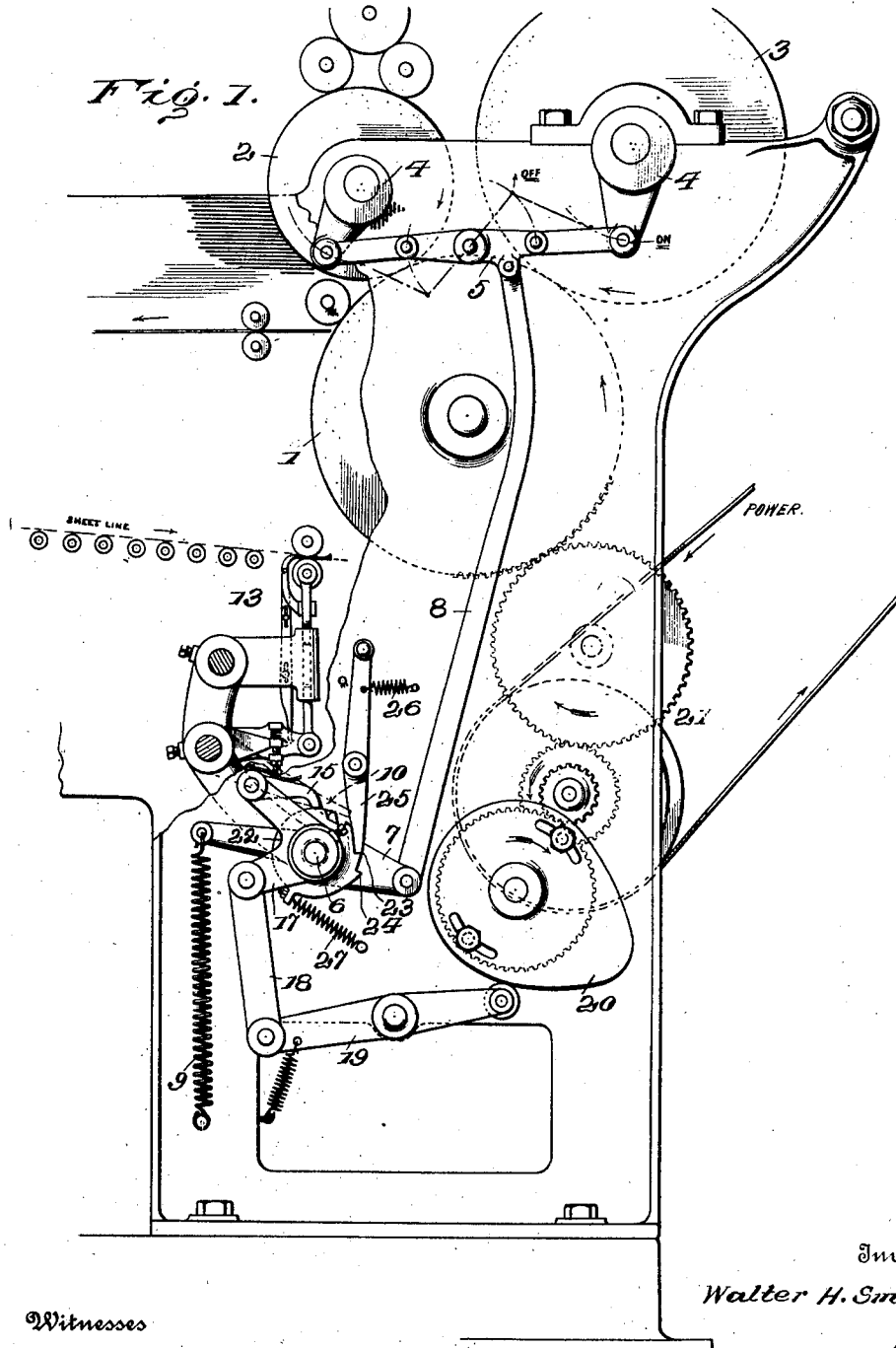
W. H. SMITH.
PRINTING PRESS.

APPLICATION FILED JULY 28, 1911.

1,050,862.

Patented Jan. 21, 1913.

2 SHEETS-SHEET 1.



Inventor

Walter H. Smith.

Witnesses

W. A. Williams.

Francis S. Rogers.

By

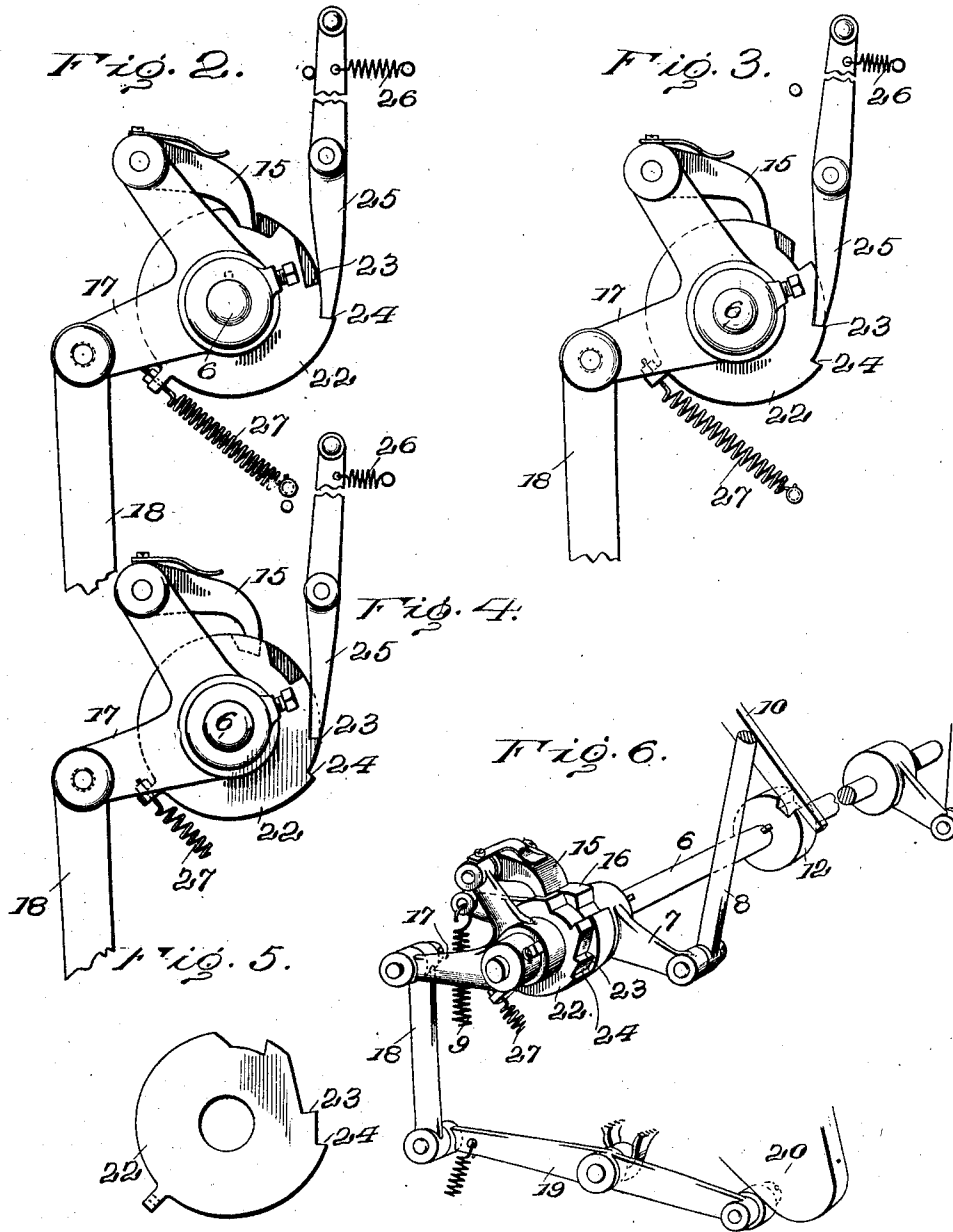
W. H. Smith
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UNITED STATES PATENT OFFICE.

WALTER H. SMITH, OF NILES, OHIO, ASSIGNOR TO THE HARRIS AUTOMATIC PRESS COMPANY, OF NILES, OHIO, A CORPORATION OF OHIO.

PRINTING-PRESS.

1,050,862.

Specification of Letters Patent.

Patented Jan. 21, 1913.

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To all whom it may concern:

Be it known that I, WALTER H. SMITH, of Niles, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide improved simple and highly efficient means for mechanically throwing on the impression of a printing press or numbering machine, or a combined printing press and numbering machine, the throwing on of the impression being properly timed in relation to the cooperating members of the printing couple.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, parts being in section and other parts broken away or omitted. Fig. 2 is an enlarged view showing certain parts in the position they occupy when the impression is about to be mechanically restored or untripped. Fig. 3 is a view of the same parts showing them in the position they occupy when the press is in operation. Fig. 4 shows the same parts in the position assumed after the impression has been tripped and before being set to untrip. Fig. 5 is a view of the ratchet which normally prevents the untripping mechanism from being effective. Fig. 6 is a view in perspective of certain details.

Referring to the drawings, 1 designates the impression cylinder; 2 a printing cylinder, and 3 a numbering cylinder. The two cylinders, 2 and 3, are shown as mounted in eccentric bearings 4 between which there is a toggle connection 5, the movement of which latter either trips or untrips the impression.

6 is a spring-impelled shaft, an arm 7 of which is connected by a link 8 to the toggle connection 5 so that when the shaft is moved by its spring 9 the toggle will be broken, the parts being moved into the dash and dot line position indicated in Fig. 1. The shaft 6 is normally restrained by a pawl 10 engaging a latch collar 12 keyed

on said shaft, and this pawl is designed to be automatically disengaged from the collar in the event of any interruption in the feed supply, the means shown for this purpose being conventionally indicated at 13, Fig. 1, and is substantially the same as that shown in Letters Patent No. 661,245 to Charles G. Harris and John F. McNutt, dated July 6, 1900.

For the purpose of enabling the impression to be untripped or restored mechanically at the proper time, I provide means which when set will allow the spring-impelled shaft to be turned in opposition to its spring and thereby untrip the impression by reestablishing the toggle. The means for accomplishing this purpose may be widely varied, but that shown embodies a constantly-reciprocating pawl 15 which is designed to enter the single notch of a collar or ratchet 16 fast on shaft 6. This pawl is shown as being carried by a bell-crank lever 17 loose on shaft 6 and connected by a link 18 to a lever 19 which is reciprocated by a continuously operating shaft 20 having the same number of revolutions as the impression cylinder. I have shown this shaft as being driven by a train of gearing 21 from the impression cylinder.

The constantly reciprocating pawl 15 is intended to enter the notch of ratchet 16 and turn shaft 6 only when the impression is to be untripped; and it is the purpose of my invention to prevent this from being effected until desired by the operator, who, by releasing a retaining element, allows the parts to be so positioned as to automatically restore the impression.

22 is a second collar or ratchet loose on shaft 6 having a single notch which is designed to coincide with the notch of ratchet 16 only when the impression is to be restored or untripped. The length of the notch in ratchet 22 is greater than that of the notch in ratchet 16. The ratchet 22 also has in its periphery two teeth, 23 and 24, with which is designed to engage a spring-held retaining lever 25. When the impression is on this lever engages tooth 23, as shown in Figs. 1 and 3. When the impression is tripped, the partial turning of shaft 6 places the notch of ratchet 16 in such position relatively to the notch of ratchet 22 (see Fig. 4) that the peripheries of the two ratchets prevent the actuating pawl

from entering the notch of either ratchet. When it is desired to restore the impression, the retaining lever 25 is moved as against the tension of its spring 26 to clear the tooth 23 of the loose ratchet, and thereby allow the latter to turn under the influence of its spring 27 until arrested by the engagement of its tooth 24 with lever 25, as shown Fig. 2. The partial turning of the loose ratchet relatively to the fixed ratchet 16 places the notches of the two ratchets in line so that the actuating pawl may enter both notches and simultaneously turn both ratchets and thus restore the impression, the spring-impelled shaft 6 being retained in position with the impression on by pawl 10. During this movement the loose ratchet 22 is turned by pawl 15 sufficiently to allow retaining lever 25 to re-engage tooth 23 thereof, as shown in Fig. 3. When the parts are in this position the reciprocation of the pawl 15 has no effect on either of the ratchets; and likewise after the impression has been tripped the pawl is precluded from effectively entering the notches of the ratchets as long as the loose ratchet is retained by lever 25 in the position shown in Fig. 4; and it is not until the loose ratchet is permitted to turn relatively to the fixed ratchet that the pawl is allowed to enter the notches of both ratchets to throw on the impression.

From what has been said it will be seen that the impression is untripped by the power of the machine, but that in order to effect this result it is necessary to first manually actuate the retaining lever to release it from the loose ratchet which normally prevents the pawl from having any effect on the spring-impelled shaft after the impression has been tripped, except when it is desired to restore or untrip the impression, and in moving the parts for this purpose the loose ratchet is restored to its normal position wherein it will prevent a subsequent untripping of the impression until desired by the operator.

I claim as my invention:—

1. In a printing press having a printing couple, means for untripping the impression comprising a shaft, a constantly-operating device for turning such shaft to untrip the impression, an element for normally rendering such device ineffective to turn said shaft, and holding means for said element with which the latter is caused to automatically reengage when said device untrips the impression.

2. In a printing press having a printing couple, means for untripping the impression comprising a shaft, a constantly-operating device for turning such shaft to untrip the impression, an element for normally rendering such device ineffective to turn said shaft, and holding means for said element with

which the latter is caused to automatically reengage by said device when it untrips the impression.

3. In a printing press having a printing couple, means for tripping and untripping the impression comprising a spring-impelled shaft, a constantly-operating element for actuating said shaft to restore or untrip the impression, and manually-controlled means for normally rendering such element ineffective to turn said shaft.

4. In a printing press having a printing couple, means for untripping the impression comprising a shaft, a constantly-operating device for turning such shaft to untrip the impression, an element for normally rendering such device ineffective to turn said shaft, and manually-controlled means for normally holding said element to render such device ineffective to turn said shaft, said element being automatically caused to reengage said holding means when said device untrips the impression.

5. In a printing press having a printing couple, means for automatically tripping the impression comprising a spring-impelled shaft, a constantly-operating element for turning said shaft in opposition to the spring to untrip the impression, and means for normally rendering such element ineffective to turn said shaft.

6. In a printing press having a printing couple, means for automatically tripping the impression comprising a spring-impelled shaft, a constantly-operating element for turning said shaft in opposition to the spring to untrip the impression, and manually-controlled means for normally rendering such element ineffective to turn said shaft.

7. In a printing press having a printing couple, means for throwing on the impression comprising a shaft, a ratchet fixed on said shaft, a constantly-reciprocating pawl for engaging said ratchet to turn said shaft to untrip the impression, a second ratchet loose on said shaft for normally preventing said pawl from turning said fixed ratchet, and holding means for said loose ratchet with which it is caused to automatically reengage in untripping the impression.

8. In a printing press having a printing couple, means for throwing on the impression comprising a shaft, a ratchet fixed on said shaft, a constantly-reciprocating pawl for engaging said ratchet to turn said shaft to untrip the impression, a second ratchet loose on said shaft for normally presenting said pawl from turning said fixed ratchet, a spring tending to turn said loose ratchet to allow said pawl to turn said fixed ratchet, and means for holding said loose ratchet, said loose ratchet being turned as against said spring when the pawl turns the fixed ratchet.

9. In a printing press having a printing

couple, means for throwing on the impression comprising a shaft, a ratchet fixed on said shaft, a constantly-reciprocating pawl for engaging said ratchet to turn said shaft to untrip the impression, a second ratchet loose on said shaft for normally preventing said pawl from turning said fixed ratchet, and a lever for holding said loose ratchet in different positions.

10 10. In a printing press having a printing couple, means for throwing on the impression comprising a shaft, a ratchet fixed on said shaft and having a single notch, a constantly-reciprocating pawl for entering said notch, a second ratchet having a single notch which when coincident with the notch of the fixed ratchet will permit the pawl to enter the latter notch, and means for normally holding said loose ratchet to render said pawl ineffective.

11. In a printing press having a printing couple, means for throwing on the impression comprising a shaft, a ratchet fixed on said shaft and having a single notch, a constantly-reciprocating pawl for entering said notch, a second ratchet having a single notch

which when coincident with the notch of the fixed ratchet will permit the pawl to enter the latter notch, said loose ratchet being spring-controlled and having teeth in its periphery, and a controlling lever for engaging said teeth to hold the loose ratchet in different positions.

12. In a printing press having a printing couple comprising a rotary cylinder, means for untripping the impression comprising an element actuated once to each cycle of revolution of said cylinder, a spring-impelled device for normally rendering said element ineffective to untrip the impression, and means for freeing said device to permit said element to become effective, said device being automatically again rendered ineffective by said element in untripping the impression.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WALTER H. SMITH.

Witnesses:

FRANCIS S. MAGUIRE,

J. NOTA MCGILL.