J. LEWIS.

ATTACHMENT TO PRINTING MACHINES.

APPLICATION FILED AUG. 10, 1918.

1,312,263.

Patented Aug. 5, 1919.

2 SHEETS—SHEET 1.

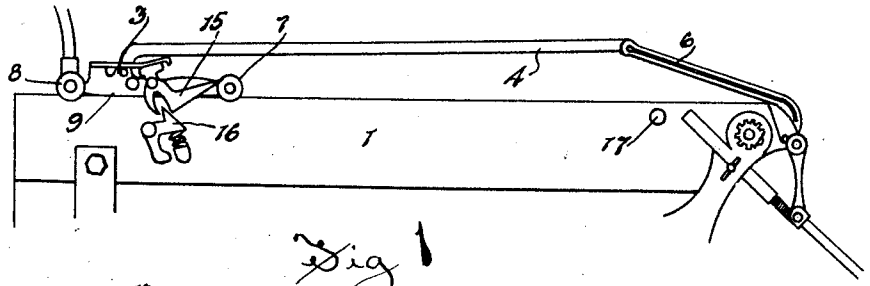


Fig 1

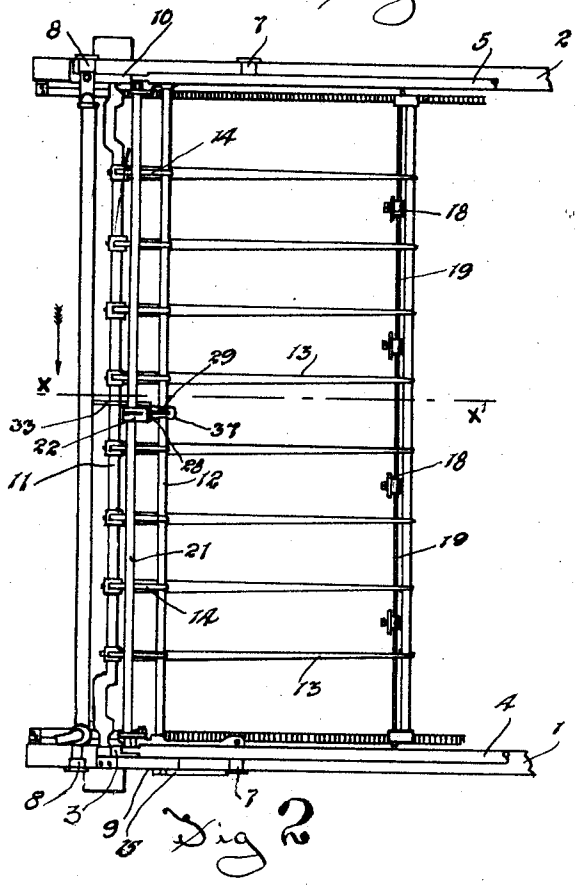


Fig 2

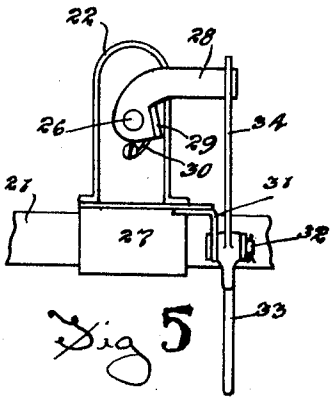


Fig 5

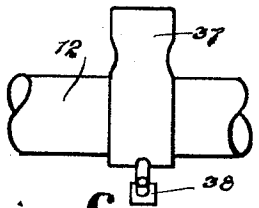


Fig 6

INVENTOR

J. Lewis

BY Kilgustonkaugh & Co.,

ATTYS

J. LEWIS.

ATTACHMENT TO PRINTING MACHINES.

APPLICATION FILED AUG. 10, 1918.

1,312,263.

Patented Aug. 5, 1919.

2 SHEETS—SHEET 2.

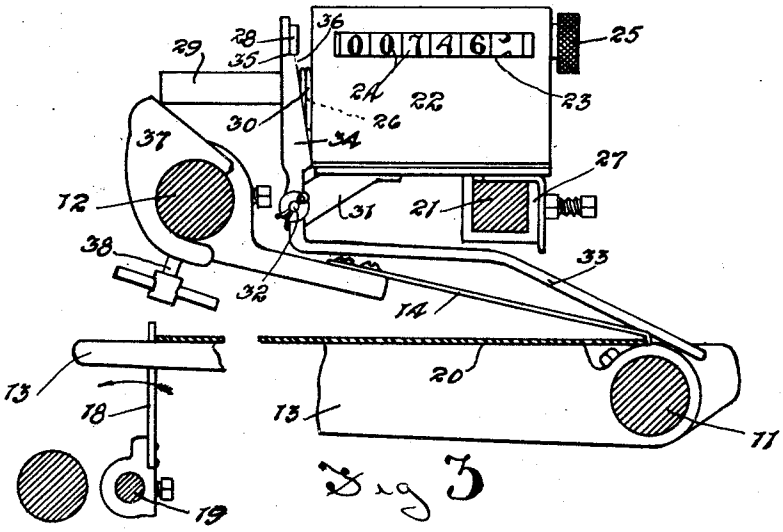


Fig 3

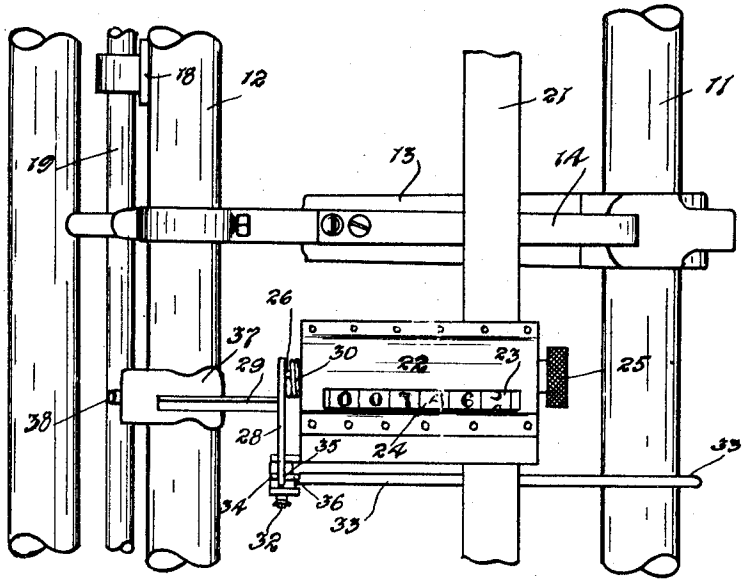


Fig 4

INVENTOR

J. Lewis

BY Lehmstaedt & Co.

ATTYS

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH LEWIS, OF WINNIPEG, MANITOBA, CANADA.

ATTACHMENT TO PRINTING-MACHINES.

1,312,263. Specification of Letters Patent. Patented Aug. 5, 1919.

Application filed August 10, 1918. Serial No. 249,293.

To all whom it may concern:

Be it known that I, JOSEPH LEWIS, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Attachments to Printing-Machines, of which the following is the specification.

This invention relates to attachments to printing machines and particularly to counting attachments and the principal object of the invention is to provide a counting attachment associated with the delivery end of a printing press which will actually count the sheets passed to the delivery end of the press with the result that one in using this appliance has an accurate record of all the sheets actually delivered and exclusive of those destroyed in or removed from the machine as often occurs.

A further object of the invention is to construct the counting appliance in a simple, durable and reliable manner and so that it can be readily attached to the present types of presses.

With the above objects in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawings in which:—

Figure 1 represents a side view of the delivery end of a press.

Fig. 2 represents a plan view of the delivery end of the press showing my counter in position.

Fig. 3 represents an enlarged detailed vertical sectional view through the carriage, the section being taken in the plane denoted by the line X—X′ Fig. 2 and looking in the direction of the applied arrow.

Fig. 4 represents a plan view of the parts appearing in Fig. 3.

Fig. 5 represents a back end view of the counter.

Fig. 6 represents a detailed view of the trip.

In the drawings like characters of reference indicate corresponding parts in the several figures.

In order that this invention may be clearly understood I have shown it as applied on a well known press called the Miehle flat bed press and have herein shown and described the delivery end of such a press but have not entered into the details thereof, only in so far as the parts which are associated with my invention are concerned. The press is well known to those familiar with the art and accordingly it is surmised that a lengthy detailed description of it is unnecessary to the complete understanding of my invention.

Referring now to the drawings, particularly to Figs. 1, 2, 3 and 4, wherein the parts of the delivery or front end of the Miehle press are shown, 1 and 2 represent opposing side tracks on which is mounted the carriage 3 which is adapted to be reciprocated forwardly and backwardly on the tracks through the action of the carriage arms 4 and 5 which have their forward ends connected to the carriage and their rear ends connected to a pair of swinging levers shown at 6.

In the operation of the press these levers swing backwardly and forwardly to cause the carriage to reciprocate on the tracks. It might here be mentioned that the carriage is fitted with rollers 7 and 8 which ride on the tracks.

The carriage presents among others the following parts:—

Two opposing side plates 9 and 10 are connected by a front cross rod 11 and a rear cross rod 12 and the cross rod 11 carries the customary inwardly or rearwardly extending spaced fly sticks 13 while the cross rod 12 is fitted with the customary spaced forwardly directed sheet stop fingers 14 which fingers and fly sticks move with the carriage. The rod 12 is projected through the side plate 9 and is supplied with a specially shaped tripping dog 15 which in the movement of the carriage is controlled by a spring catch 16 located at the front end of the track 1 and a trip pin 17 located at the rear end of the track 1.

In actual practice and on the Miehle press as shown, as the carriage goes in or to the right, that is to say as it approaches the sheet delivery tapes (not shown), the dog 15 is stripped by the pin 17 to close the sheet stop fingers down on to the front ends of the fly sticks, this being to stop the sheet delivered by the tapes on to the fly sticks.

In the forward travel of the carriage the

printed sheet is carried by the fly sticks and when the carriage has reached its forward position the sheet is removed from the fly sticks in a manner later described and the dog 15 which clears over the catch 16, as it goes ahead, is caught by the catch 16 on its inward travel and actuated to swing the shaft 12 in a direction which will raise the sheet stop fingers upwardly clear of the fly sticks.

In Figs. 1, 3 and 4 of the drawings I have shown as a further part of the Miehle press, fly fingers 18 carried by a rotatable cross rod 19 mounted entirely independent of the carriage and which is manipulated by a special part of the press mechanism to swing up to the position shown in Fig. 3 and swing down in the direction indicated by the applied arrow (Fig. 3) at proper times. Considering particularly Fig. 3 wherein the fly sticks, sheet stop fingers and other parts associated with the carriage are shown as in their front position, that is to say, wherein the carriage is shown in its forward position of travel, it will be observed that the sheet of paper 20 which is carried by the fly sticks has the one edge against the sheet stop fingers which are down and the other edge against the fly fingers 18 which are up. The instant the carriage stops at the end of its travel the sheet stop fingers are raised by the trip dog 15 to clear the front edge of the sheet of paper and as the carriage continues traveling back or in the sheet is held in a stationary position by the fly fingers, with the result that the fly sticks are swept from under it and as the fly sticks clear from the sheet the sheet is free to drop down on to the press table (not shown).

In this connection I might explain that at approximately the time the fly sticks are cleared from the edge of the paper the fly fingers are turned in the direction indicated by the applied arrow to clear the carriage and allow it to pass in.

The above completes the description of the parts of the press with which my invention is immediately associated and in connection with the explanation given I wish it to be particularly borne in mind that a sheet must actually be delivered and brought into the position as shown in Fig. 3 before my appliance, which is a counting device, works.

An idle stroke of the carriage, where no sheet of paper is passed ahead on the fly sticks, is not counted by my appliance with the result that the counter only counts where a sheet is delivered to the front end of the machine.

The counter appliance is now described in detail. On the carriage I supply an additional cross rod 21 which in the present instance is shown square in cross section and has the ends thereof secured permanently in any suitable manner to the side plates 9 and 10 of the carriage.

22 represents a counter of any approved type which is provided with a sight opening 23 through which the numbers on the several disks 24 of the counter can be clearly seen. A counter of the type shown is at present manufactured and the details of it form no part of this invention. Such a counter is usually supplied with a re-setting thumb piece 25 and with an extending actuating shaft 26 which when turned a portion of a revolution serves to actuate the counter.

The counter is permanently mounted on the cross shaft 21 being held to it by any suitable clamping device 27.

To the shaft 26 of the counter I secure permanently two arms 28 and 29, the arm 28 being positioned so that it extends transversely of the press while the arm 29 extends lengthwise of the press. A coiled spring 30 is supplied to normally swing the arm 28 downwardly.

To the base of the counter I attach a bracket 31 which carries a horizontally disposed pivot pin 32 on which I mount pivotally a trip lever 33 which has one end thereof projected into an upstanding catch 34 presenting a notch or shoulder 35 and an inclined edge 36 passing away from the shoulder.

In the normal position the extending end of the arm 28 is engaging the shoulder so that the counter is held in a set non-counting position. However, it will be apparent that upon the long end of the trip lever being raised the arm 28 will be cleared from the notch and will be swung down on the inclined edge 36 by the action of the spring 30. This down swinging movement allowed the arm 28 is relied upon to actuate the counter. The arm 29 of the counter is designed to engage with a trip 37 secured permanently such as by a clamp screw 38 to the stop finger shaft 12.

The counter operating parts are positioned so that when the carriage is in its forward position of travel as shown best in Figs. 3 and 4 the counter is set and is ready when released as shortly described to effect the counting.

To understand the operation it is primarily assumed that the parts are in the position as shown in Figs. 3 and 4 and that the sheet of paper 20 is on the fly sticks and is about to be swept off them and deposited on the press table. As the carriage goes in the then forwardly extending end of the trip lever, which it will be observed has the extremity thereof terminating in a lower horizontal plane than the plane containing the paper, is brought into contact with the then forward edge of the paper which is be-

ing held stationary by the fly fingers 18, with the result that as the carriage continues on its inward or rear movement the trip lever is swung upwardly by engagement with the paper a sufficient distance to release the arm 28 from the shoulder 35. As before intimated the instant this occurs the lever swings down and actuates the counter provided however that the trip 37 has been cleared from the arm 29. This trip will be clear for the reason that every time the carriage reaches the front end of its travel the trip dog 15 is actuated to turn the shaft 12 and operate the sheet stop fingers. At this point however I wish it to be particularly noticed that the action of the counter in counting is entirely dependent on the engagement of the extending end of the trip lever 33 with the edge of the paper as it will be observed that if the trip lever is not swung to release the shoulder from the arm 28 the counting mechanism will not operate even although the dog 37 is swung away from the arm 29.

Accordingly then, the counting mechanism only operates each time a sheet is delivered to the delivery end or front of the press and is not operated when the carriage makes an idle stroke or the sheet is removed from the carriage on its forward stroke, as it will be apparent that the counting mechanism is locked against movement as long as the trip lever is not struck by the edge of the paper.

The re-setting of the arm 28 in the notch is accomplished when the carriage is at the inner or rear end of its travel and at the time the sheet stop fingers are thrown down by the action of the trip dog 15. Obviously when the sheet stop fingers are turned down the trip 37 is swung up and in swinging carries the arm 29 upwardly to the position shown in Fig. 3 which is the reset position of the arm 28.

It might here be explained that the weight of the long or forwardly extending end of the trip lever over-balances the catch end so that the catch end is naturally always swung toward the arm 28.

I might state that I am aware of counters being used on presses but to my knowledge they have not been operated such that they only count the sheets actually delivered at the delivery end of the press.

With the other counters of which I am aware all sheets put into the press are counted, with the result that the printer, although knowing how many sheets are put into the press, has no accurate knowledge of the sheets actually printed and it is a well known fact that in practice many sheets are destroyed or removed from the press after they have partially gone through it.

While, for the sake of clearness, I have described this invention as applied on a particular press, still I wish it to be understood that I do not desire to be limited to the application as herein shown as it could be readily modified to accommodate various types of presses and to count the delivered sheets without in the least departing from the spirit of the invention and as covered by the scope of the appended claims.

What I claim as my invention is:—

1. The combination with a press presenting a reciprocating sheet delivery carriage and means for stopping the advancing edge of the sheet delivered by the carriage, of a counter mounted on the carriage and moving therewith and an operating mechanism for the counter, said operating mechanism being actuated by engagement with the stopped sheet.

2. In a press, the combination with a reciprocating sheet delivery carriage and fly fingers engageable with and stopping the advancing end of the sheet at the time the carriage is reaching its forward point of travel, of a counter mounted on and moving with the carriage and counter-actuating mechanism engageable with and tripped by the stopped sheet.

3. In a press, the combination with a reciprocating sheet delivery carriage and fly fingers engageable with and stopping the advancing end of the sheet at the time the carriage is reaching its forward point of travel, of a counter mounted on and moving with the carriage, an operating arm for the counter, a trip lever normally engaged with the arm and preventing movement of the same, said trip lever having an extending end engageable in the movement of the carriage with the stopped sheet and being designed when actuated to release the arm and means for swinging the released arm to actuate the counter.

4. In a press, the combination with a reciprocating sheet delivery carriage and fly fingers engageable with and stopping the advancing end of the sheet at the time the carriage is reaching its forward point of travel, of a counter mounted on and movable with the carriage, an extending spring pressed operating arm for the counter, a trip lever pivotally attached to the counter and having one end formed into a catch and engaging and holding the arm against movement and the other end extending and designed in the movement of the carriage to engage with the sheet to operate the lever and release the catch from the arm and means for automatically resetting the arm.

5. In combination, a counter presenting an operating shaft, a trip arm and a catch arm secured to the shaft, a trip lever pivotally secured to the counter and having one end formed into a catch normally engaged

with the catch arm and means normally holding the catch arm engaged with the catch.

6. In combination, a counter presenting an operating shaft, a catch arm and a trip arm secured to the shaft, a trip lever pivotally secured to the counter and having one end presenting a shoulder and provided with an inclined edge passing away from the shoulder and a spring associated with the catch arm and normally holding the catch arm seated on the shoulder.

Signed at Winnipeg, this 19th day of April 1918.

JOSEPH LEWIS.

In the presence of—
G. S. ROXBURGH,
K. B. WAKEFIELD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."