J. STIVERS.

REGISTER GAGE FOR PRINTING PRESSES.

APPLICATION FILED OCT. 9, 1912.

1,067,154.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

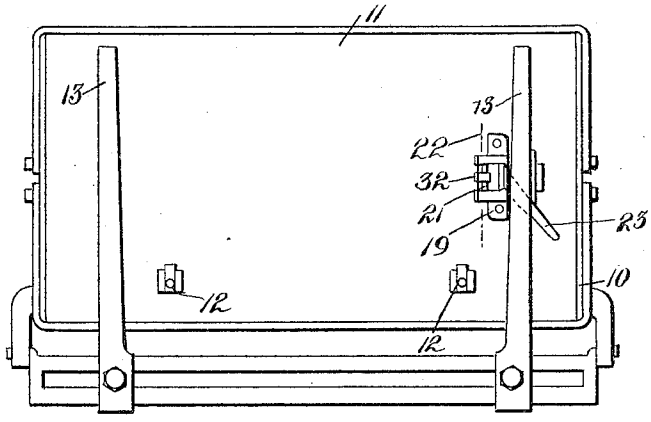


Fig. 2.

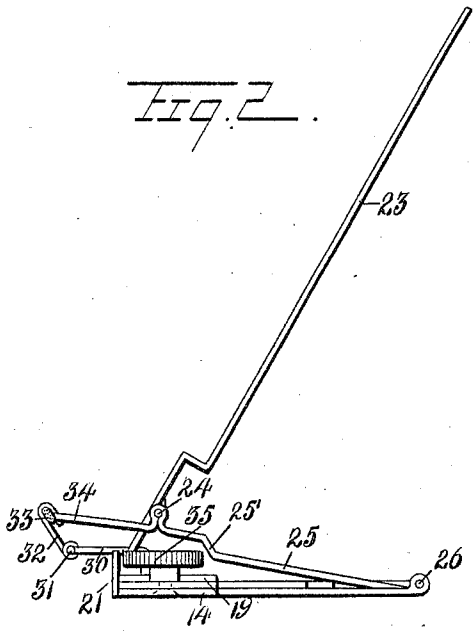
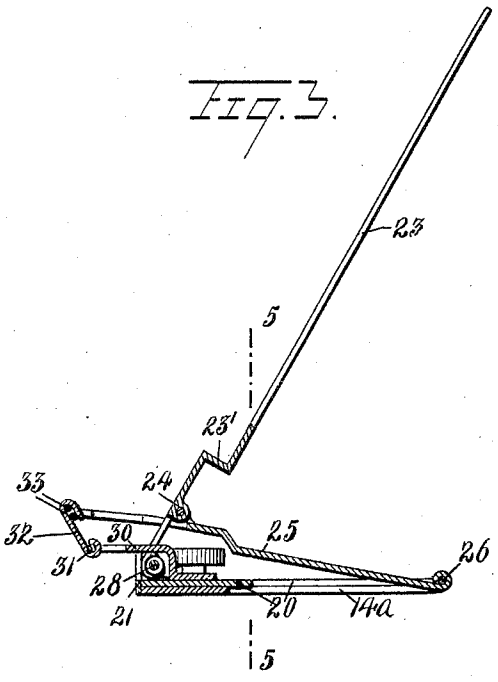


Fig. 3.



WITNESSES

H. J. Walker

Geo. L. Beller

INVENTOR

Jackson Stivers

BY Munn & Co

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 4.

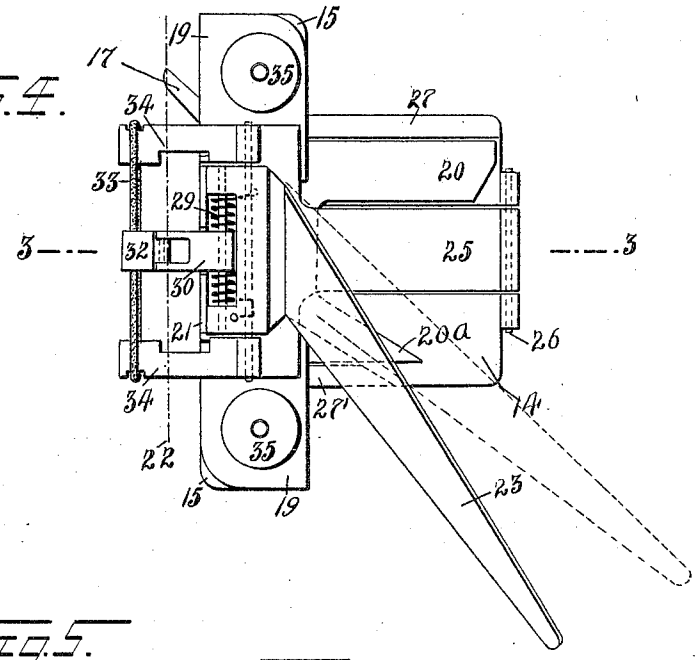


Fig. 5.

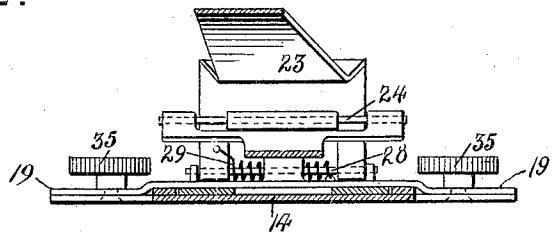


Fig. 6.

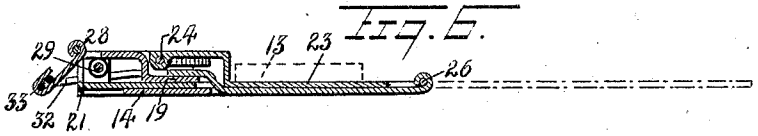
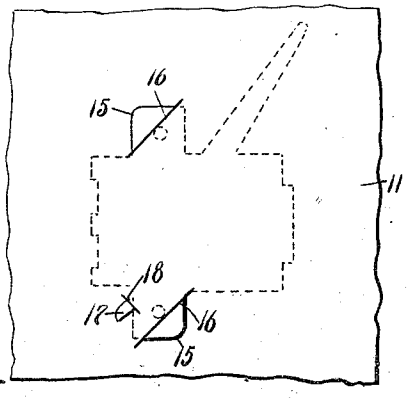


Fig. 7.



WITNESSES

H. D. Walker

Geo. L. Beeler

INVENTOR

Jackson Stivers.

BY Munn & Co

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JACKSON STIVERS, OF SAN FRANCISCO, CALIFORNIA.

REGISTER-GAGE FOR PRINTING-PRESSES.

1,067,154. Specification of Letters Patent. Patented July 8, 1913.

Application filed October 9, 1912. Serial No. 724,722.

To all whom it may concern:

Be it known that I, JACKSON STIVERS, a citizen of the United States, and a resident of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Register-Gage for Printing-Presses, of which the following is a full, clear, and exact description.

This invention relates to printing press attachments, and has particular reference to printing presses adapted especially for job work and operated by hand.

The invention more particularly relates to means for automatically registering the paper or cards to be printed, whereby the character of the work is improved in appearance and the output possible over printing apparatus not so equipped is materially increased, it being possible to operate the press at a much higher speed and yet insure perfect accuracy of adjustment of the work.

A further object of the invention is to provide a register gage of the character indicated adapted to be operated by a movable part of the press in unison with the usual operation thereof, whereby there will be operated a gage head for properly registering the paper to be printed and which device comprehends the minimum number of movable parts and through which more reliable action both as to constant operation and durability is obtained than with devices heretofore proposed for analogous purposes.

The foregoing and other objects of this invention will hereinafter be more fully described and claimed and illustrated in the drawings accompanying this specification in which like characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a face view of a printing press platen showing one of my devices in position for use; Fig. 2 is a front elevation of the attachment; Fig. 3 is a vertical section of the same substantially on the line 3—3 of Fig. 4, but indicating the arm in elevation; Fig. 4 is a plan view; Fig. 5 is a vertical section at right angles to the section shown in Fig. 3 and on the line 5—5 of Fig. 3; Fig. 6 is a view corresponding to Fig. 3, but with the parts in a different position; and Fig. 7 is a bottom plan view of a tympan sheet with one of the gages applied thereto.

Referring more particularly to the drawings, I show at 10 a platen having the usual tympan sheet 11 thereon and at 12 are the usual front gages of any suitable nature. At 13 are indicated a pair of grippers of well known construction and function.

The improved register gage comprises a base plate 14 having a pair of points or corners 15 adapted to project through slits 16 in the tympan sheet 11 and also being provided with a toe 17 projecting through a slit 18 arranged at an angle to one of the slits 16. At 19 is shown a clamp plate adapted to coöperate with that portion of the base plate which has the points 15, whereby the base plate is clamped to the tympan sheet adjacent said points 15 and toe 17. The major portion, therefore, of the tympan sheet will lie beneath the base plate, but will be held snugly against the bottom of the base plate by virtue of the three-point clamping connection formed by the points 15 and toe 17. The primary function, however, of the toe 17 is to slightly lift the paper to be printed so as to insure that it will be engaged properly by the movable portion of the gage.

The movable portion of the register gage comprises a slide 20 approximately U-shaped and movable along the upper surface of the base plate 14 and carrying a gage head 21 movable laterally beyond the base plate and toward the register line 22, such line representing the line of adjustment of the paper to be printed upon and being at right angles to the line connecting the front gages 12. The gage head 21 extends downwardly slightly below the plane of the slide as indicated in Fig. 6, whereby it will operate in close contact with the surface of the tympan sheet. The base plate is cut away centrally as indicated at 14^a in Fig. 3 and the legs of the slide 20 coöperate with the portions of the base plate on opposite sides of the cut-away. The slide furthermore is guided in its reciprocations between the base plate 14 and the clamp plate 19, as shown in Figs. 2 and 3.

As a means whereby the slide may be reciprocated in an easy and reliable manner in connection with the usual operation of the printing press, I provide an arm 23 which is pivoted at 24 to a gripper plate 25 in turn pivoted at 26 at its outer end to the end of the base plate 14, said plate 25 being adapted to pass downwardly within the space 14^a above referred to by virtue of an offset 25′ in said plate, said offset providing for the downwardly offset portion 23′ of the arm 23

to permit the main part of the arm 23 to come well down upon the base plate when so carried by the gripper 13. It is therefore possible for the gripper 13 to come well down upon or adjacent the tympan sheet, as indicated in dotted lines in Fig. 6. One of the legs of the slide is beveled off at the outer end, as shown at 20^a so that the arm 23 may impinge directly upon the base plate and the gripper plate 25. The slide is guided laterally by means of flanges 27 and 27', the latter of which is shorter than the flange 27 for the accommodation of the arm 23 just referred to. The arm 23 constitutes with respect to its pivot 24 a lever of the first class, and its outer end is pivoted at 28 to the gage head 21. A coil spring 29 surrounds the pivot 28 and serves to swing the arm 23 upwardly away from the slide 20, and this action of the spring results in the movement of the slide away from the register line 22, while the arm 23 rises to its upright position, the position shown in Fig. 2. That portion of the arm 23 between the pivots 24 and 28, together with the portion of the gripper plate 25 between the pivots 24 and 26, constitutes a toggle, and when the press gripper 13 bears down upon the pivot 24 the toggle will be straightened and the pivot point 26 being fixed the gage head 21 will be carried outwardly from the base plate through the operation of the pivot 28 and being guided in such movement by the clamp plate 19 and an extension 30 therefrom which extends over the spring 29 and the central portion of the gage head.

The outer end of the extension or tongue 30 is provided with an eye 31 pivotally connected to one end of a link 32, the other end of which link is flexibly connected through an elastic cross piece 33 with the gripper fingers 34, said fingers being parts of the plate 25 which swings as a whole around the pivot 26. This movement of the plate 25 and fingers 34 when swung downwardly by depression of the arm 23 will swing the link 32 around its pivot 31, causing the outer ends of the fingers 34 and that portion of the cross piece 33 connected with the same to come firmly down upon the paper which has just been adjusted by the gage head, the flexible connection 33 readily adapting itself to the eccentricity of the two parts 25 and 32. It is to be noted furthermore that the final movement of the head 21 in adjusting the paper will be a comparatively slow one, due to the fact that the toggle above referred to will have become practically straight, but the movement of the ends of the fingers downwardly toward the paper will be at practically its highest velocity so that the paper will be gripped promptly by the fingers 34 just after it has been finally moved by the head 21. Conversely said fingers 34 will serve to hold the printed paper down upon the tympan sheet after the type block has been removed therefrom after the printing impression has been made.

By virtue of the screws 35 operating through the base plate and clamp plate 19, the gage may be snugly clamped to the tympan sheet so as to make the gage head aline properly with the register line 22 in accordance with the particular work to be performed by the printer. By reason of the plurality of screws 35 and also the projecting toe 17 a very rigid clamping effect will be had without mutilating the tympan sheet unnecessarily.

The several parts of this device may be made of any suitable materials and the relative sizes and proportions and minor details of construction may be varied to a considerable extent without departing from the spirit of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The herein described register gage comprising a base plate, means to clamp the base plate in position, a gage head guided for lateral movement with respect to the base plate and adapted to adjust the paper, a gripper plate pivoted at one end to the base plate, an actuating lever of the first class fulcrumed on said gripper plate and having one end pivoted directly to the gage head, and means carried by the gripper plate to grip the paper after being adjusted by the gage head.

2. In a register gage, the combination of a base plate, means to clamp the same in position including a clamp plate, a tongue extending upwardly and laterally from said clamp plate, a gage head guided for reciprocating movement laterally along said base plate and beneath said tongue, a gripper plate pivoted at one end to the base plate remote from the gage head, an arm pivoted at one end to said gage head and intermediate its ends to the gripper plate, said arm and gripper plate constituting a toggle, the straightening of which causes the gage head to position the paper, said gripper plate carrying a pair of gripper fingers adapted to engage the paper after being positioned, and connections between said gripper fingers and the outer end of the aforesaid tongue.

3. In a register gage, the combination of a base plate having a cut-away central portion, a slide movable along the base plate in a horizontal plane and including a gage head, a gripper plate pivoted to the base plate opposite the gage head and having a downwardly offset portion adapted to come within the cut-away portion of the base plate into the plane of the base plate, an arm pivoted at one end to the gage head and also to said gripper plate and constituting therewith a toggle, the straightening of which causes

the gage head to adjust the paper at a comparatively slow speed, and means carried by the end of the gripper plate remote from its pivot to grip the paper at a comparatively high speed and immediately following the adjustment thereof by the gage head, substantially as set forth.

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

JACKSON STIVERS.

Witnesses:
Mrs. J. L. SCHLEIMER,
INA B. STIVERS.

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