June 30, 1925

1,543,991

G. DE PAMPHILIS

PRINTING GAUGE

Filed March 3, 1925

Fig. 1.

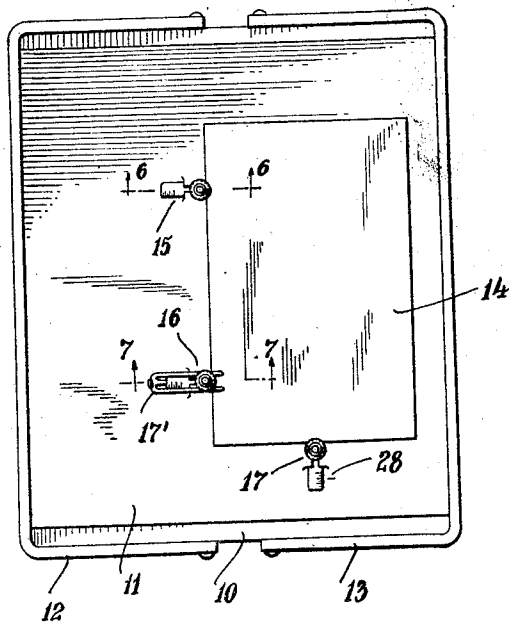


Fig. 2.

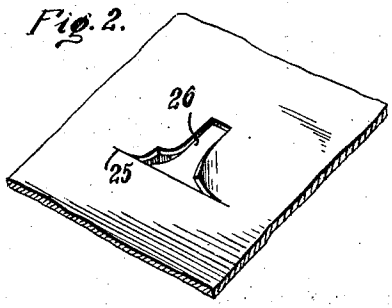


Fig. 3.

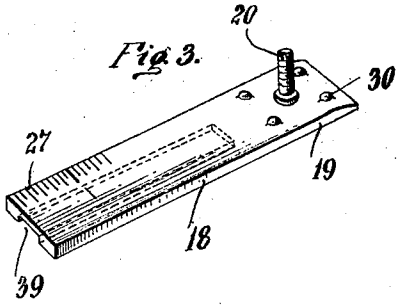


Fig. 6.

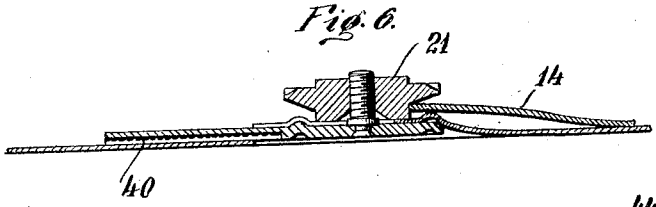


Fig. 4.

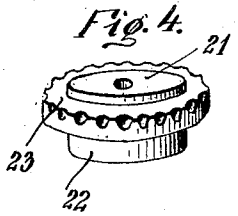


Fig. 9.

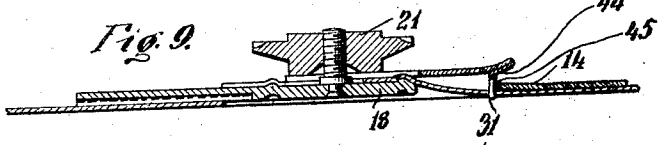


Fig. 5.

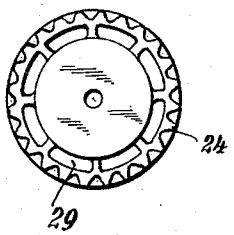


Fig. 7.

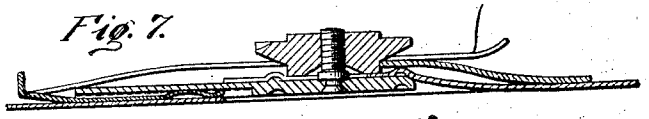


Fig. 10.

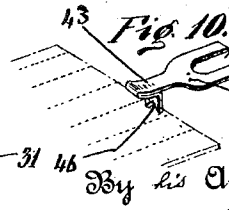
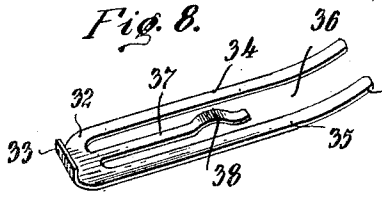


Fig. 8.



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By his Attorney

Mario Schiesari

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UNITED STATES PATENT OFFICE.

GENNARO DE PAMPHILIS, OF NEW YORK, N. Y.

PRINTING GAUGE.

Application filed March 3, 1925. Serial No. 12,927.

To all whom it may concern:

Be it known that I, GENNARO DE PAMPHILIS, a citizen of the United States, and resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Printing Gauges, of which the following is a specification.

This invention relates to sheet gauges or guides for platen printing presses, and its primary object is to provide a gauge which may be firmly secured to the tympan or sheet drawn over the platen, the construction of which is simpler and less obtrusive than that of similar devices heretofore in use.

Another object is to provide a sheet gauge or guide of a novel and improved construction, for the purpose set forth, having means for the positive indication and control of the amount of adjustment necessary when setting the gauge or gauges for a given printing job.

A further object is to provide, in a device of the character mentioned, means insuring the accurate placement of the sheets, and means permitting instant control thereof.

Other objects and advantages of the present invention will be fully set forth as the description proceeds, and will be claimed in the appended claims.

In platen printing presses, sheets to be printed are successively placed upon the platen and pushed against gauges which have been previously set in the proper position, and which insure proper feeding of the sheets in order to produce an exact impression.

It is very necessary that the gauges be accurately placed; it is also necessary that the gauges do not interfere with the printing operation by unduly projecting in the sense of their height, or in a horizontal sense.

The universal practice is to secure a sheet or tympan upon the platen, and to set the gauges upon said tympan, without defacing the platen.

Various types of removable gauges have been suggested, some being provided with points to be forced through the tympan, others consisting of an upper and a lower clamping plate, adapted to clamp the tympan by inserting the lower plate through a slit cut made through the tympan for this purpose. The gauges of the first mentioned type are unsatisfactory because it has been found that they tear and bulge the tympan; and the gauges of the second mentioned type are generally too large for the purpose for which they are intended, extending both in a vertical and in a horizontal sense so as to interfere with the placement of grippers, and their proper adjustment is largely a matter of guess work.

Owing to the difficulties experienced with such removable metallic gauges as are available, most printers prefer to simply fix pieces of lead upon the tympan, in spite of the loss of time that their proper placement entails.

This method, however, is admittedly crude and could be replaced to great advantage by a properly designed gauge of the removable and adjustable type, such as I claim my invention to be.

In the accompanying drawings, which are intended for illustrative purposes only, and not in a limiting sense, I show the preferred embodiment of my invention, and in the same:

Fig. 1 is a plan view of a platen showing three of my improved gauges in position;

Fig. 2 is a fragmentary perspective view of the tympan, in an enlarged scale, showing the cut made through it for the insertion of my improved gauge in position;

Fig. 3 is a view in perspective of the gauge plate;

Fig. 4 is a view in perspective of the clamping nut;

Fig. 5 is a plan view of the same;

Fig. 6 is a cross sectional view in elevation of the gauge in operative position;

Fig. 7 is a similar view showing the use of a stripper in connection with the gauge;

Fig. 8 is a view in perspective of the stripper used in the arrangement of Fig. 7;

Fig. 9 is a cross sectional view in elevation of the gauge used in connection with a gauge extension member for ruling operations; and,

Fig. 10 is a view in perspective of the said extension member.

In Fig. 1, 10 designates the platen, 11 the tympan, 12, 13, the means for retaining or clamping the tympan in position; 14 is the sheet to be printed, resting on the tympan, and positioned by means of side gauges 15, 16, and end gauge 17. Gauge 16 is shown in connection with the stripper 17'.

The gauge consists, essentially, of an elon-

gated plate 18, one end of which, 19, is the clamping end, to which is fixed a threaded stud, 20, upwardly projecting from the plate. Upon said stud is screwed a relatively thin nut 21, formed with a hub portion 22, the lower surface of which acts as a clamping surface, and the side or cylindrical surface of which acts as the gauging means. The upper portion of said nut extends to form a crown 23 of a larger diameter, having a knurled or indented rim 24 facilitating the operation of the nut for clamping or releasing purposes.

By inserting stud 20 through the tympan, then tightly screwing the nut in position, the tympan remains clamped between the plate and the nut. In practice the gauge is secured in position on the tympan by slitting the tympan in a direction parallel to the edge of the sheet, as shown at 25 in Fig. 2, the length of the slit or cut being sufficient to admit the plate in the sense of its width. A small rectangular slot 26, extending from the slit or cut towards the sheet, preferably at right angle to the slit or cut, is then cut through the tympan about midway of the slit or cut, of a width sufficient to receive stud 20.

The clamping end of the plate is then inserted through slit 25 and is moved inwardly to a point where stud 20 is not quite at the end of the slot 26; so that in this position the slot permits further adjustment of the plate in either direction. The nut is then inserted on the stud, and the device is clamped in position, with its plate extending in a direction at right angles to the edge of the sheet.

The correct number of gauges, usually three, as shown in Fig. 1, are placed at first at positions which are as closely approximate as possible to the correct position called for by the sheets to be fed on the platen, making only relatively small adjustments subsequently necessary.

The clamping action actually occurs at the sides of slot 26, which are in a direction normal to the edge of the sheet, as good practice requires; with the additional advantage that the clamping takes place on both sides of the stud, providing a well balanced action in relation to the longitudinal axis of the plate. The device in this position is shown in Fig. 6, where 14 is the sheet which is set against the cylindrical surface of the hub portion of the nut.

An important feature of the device is a graduation 27, which may be by points according to the pica system, provided at the rear end of one or both sides of the plate.

The three gauges having been secured in position as shown in Fig. 1, a trial proof is obtained by placing the sheet with one of its sides against the hub of the nuts of gauges 15, 16, and one of its ends against the hub of the nut of gauge 17. Examination of this proof by the foreman will disclose whether the positioning of the sheets is correct or not; if not, it is sufficient for the foreman to issue instructions that the position be corrected one or more points inwardly or outwardly. It is then sufficient to make a mark on the tympan, as at 28 in Fig. 1, corresponding to one of the marks on graduation 27; and by means of the graduation the gauge plate may be moved to or away from the paper the proper distance, absolutely eliminating all guess work.

Crown 23 of the nut is preferably provided with through openings 29, through which the cylindrical surface of the hub is visible; this permits instant verification of the correct positioning of each sheet as it is placed upon the platen, the operator making sure that the edges abut against the cylindrical surface of the hub portion of the nuts.

Another feature of my invention which, although not strictly necessary, I have found very useful, is the provision of slight protuberances 30 from the clamping end of the plate, external to the diameter of the hub. With prolonged use, the nuts sometimes become a little bit loose, and require tightening; when this occurs, it may happen that one or more sheets may penetrate between the clamping surface of the nut and the surface of the tympan, before the operator is aware of the loosened condition of the nut. As a consequence waste, poor work and delay may result. The protuberances mentioned will cause corresponding points of the surface of the tympan to bulge or become slightly raised above the level of the clamping surface of the nut, as Fig. 6 shows, and therefore the edge of sheet 14 will be prevented from entering underneath nut 21 if perchance the nut were to become loose.

The device may at times be used in connection with a stripper, such as shown in Figs. 7, 8. The stripper has the object of providing an inwardly extending guide, preferably with an upwardly inclined end, as shown at 31, facilitating the insertion of the sheets, and is preferably made of yielding material, such as spring steel. The use of the stripper is also illustrated in connection with gauge 16 in Fig. 1.

The stripper itself is not new in connection with devices of this kind, but the type of stripper shown and the manner of its operation are new, and constitute an improvement over other similar devices heretofore in use.

The stripper is a three-pronged member made of flat spring steel, comprising a rear bridge portion 32 having an upwardly bent portion or rear edge 33, and formed with two forwardly extending prongs 34, 35, separated by a space 36 wide enough for the passage of the hub portion 22 of the nut,

said two prongs having an upturned end 31, as stated. This member also comprises a shorter central forwardly extending prong 37, formed with an end portion 38 raised or bulging, as shown in Fig. 8, to provide a good frictional contact of said prong against the surface of a shallow slot or housing 39, undercut longitudinally of plate 18 at its rear end, as shown in Fig. 3. To provide a better grip, I prefer to make the surface of the spring portion 38 knurled or rough or provided with indentations, and to roughen the surface of slot 39 in a similar manner, as Fig. 6 shows. To insert or remove the stripper, it is sufficient to hold it by means of its upturned portion 33, inserting the end of prong 37 through slot 39, and pushing it forward, or to pull it out in the reverse direction for its removal. By virtue of this construction, no projecting parts or guides are needed for the insertion of the stripper, which does not materially affect the thickness of the device.

In Fig. 9 I illustrate the use of another attachment which is shown in Fig. 10. When the device is used in the manner previously described, part of the edge of the sheet to be printed is covered by the crown 23 of the nut, as Figs. 1, 6 and 7 show. This arrangement may, and usually does interfere with the running of rules close to the margin, and a blank space has to be left between the ruled portion and the edges of the sheet.

The attachment illustrated permits of running the rules right up to the margin of the sheet, and this is a marked advantage in the printing of forms, such as estimate blanks and the like, where the information is rather crowded, and where a considerable number of columnar spaces is required. The device is, essentially, an extension of the gauge head, which is narrow enough to be inserted in the space between two consecutive lines of the ruling.

In its preferred form the attachment is made of sheet metal, and is formed with a forked rear end 41 which may be inserted between the nut and the tympan, and clamped in position by the nut, as shown in Fig. 9. The slot 42 at said end is wide enough to admit stud 20 to pass through, and permits adjustment of the attachment in relation to the gauge head. Said part 41 extends towards the front in the form of a narrow tongue 43, the width of which is less than the distance between two consecutive lines in the ruling; and at its forward end said tongue is bent downwardly and inwardly, doubling the thickness of the metal at the tip, as shown at 44, for a relatively short tract, and is then bent downwardly in a vertical direction, forming a supplementary gauge surface 45. The tip, at 44, is slightly curved upwardly to facilitate the insertion of the sheets; and the vertical gauge portion preferably terminates with a rough or two pointed edge, as shown at 46, gripping or piercing the tympan when forced in position by the nut, as shown in Fig. 9.

In this manner, the gauge head becomes extended in the form of a narrow tongue, which is adjusted to fall between two lines of the ruling, and which does not in the least interfere with the ruling operation; and at the same time all the advantages of the device, as outlined before, are retained.

My invention may be carried into practice in ways somewhat different from that shown, by altering some minor details which do not depart from the inventive idea; therefore I reserve myself the right to claim my invention as broadly as the prior art will permit.

I claim:

1. A printing gauge consisting of an elongated plate provided with a threaded stud at one end thereof, and a nut having a clamping hub portion adapted to be screwed upon said stud, forming a gauge head therefor.

2. A printing gauge consisting of an elongated plate provided with a threaded stud at one end thereof, a nut having a clamping hub portion adapted to be screwed upon said stud forming a gauge head therefor, and a graduation on said plate in the sense of its adjustment to and from the gauging position.

3. A printing gauge consisting of an elongated plate provided with a threaded stud at one end thereof, a nut having a clamping hub portion adapted to be screwed upon said stud, forming a gauge head therefor, and portions at said gauge head end raised above the clamping level of said nut.

4. A printing gauge consisting of an elongated clamping plate provided with a threaded stud, and a nut adapted to be screwed upon said stud, comprising a cylindrical clamping hub portion, forming a gauge head therefor and a crown portion of a larger diameter, having perforations whereby said hub portion will be made visible through said crown portion.

5. A printing gauge consisting of an elongated plate provided with a threaded stud at one end thereof, a nut adapted to be screwed upon said stud, comprising a cylindrical clamping hub portion, forming a gauge head therefor and a crown portion of a larger diameter, having perforations whereby said hub portion will become visible through said crown portion, and a graduation upon one of the sides of said plate.

6. A printing gauge consisting of an elongated plate provided with a threaded stud at one end thereof, a nut adapted to be screwed upon said stud, comprising a cy-

lindrical clamping hub portion, forming a gauge head therefor and a crown portion of a larger diameter, having perforations through which said hub portion will become visible, a graduation upon one of the sides of said plate, and portions at the gauge head end of said plate raised above the clamping level of said nut.

7. The combination of a printing gauge comprising an elongated plate with a threaded stud at one end thereof, and a clamping nut adapted to be screwed upon said stud, said clamping plate being provided with an undercut longitudinal slot at the other end, with a stripper comprising two side extensions, and a central prong adapted to be inserted within said slot.

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