Nov. 30, 1954 W. F. HUCK 2,695,518

PRESSURE-INDICATING DEVICE FOR PRINTING PRESSES

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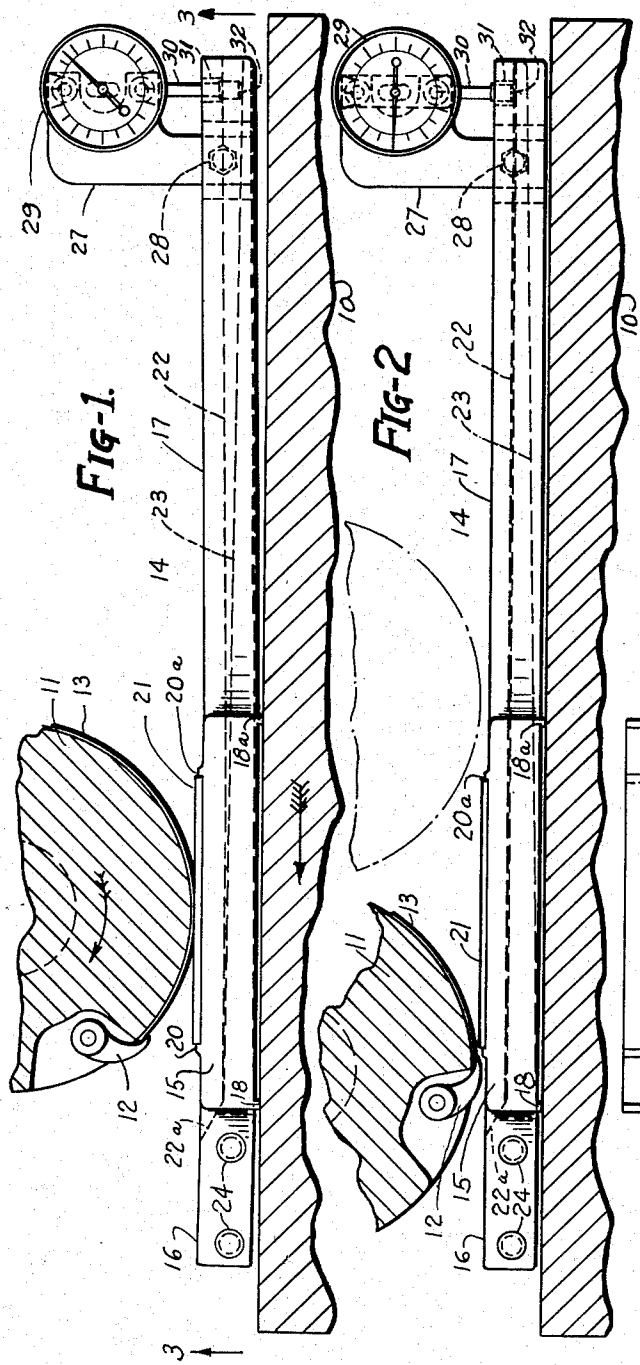


FIG-1.

FIG-2

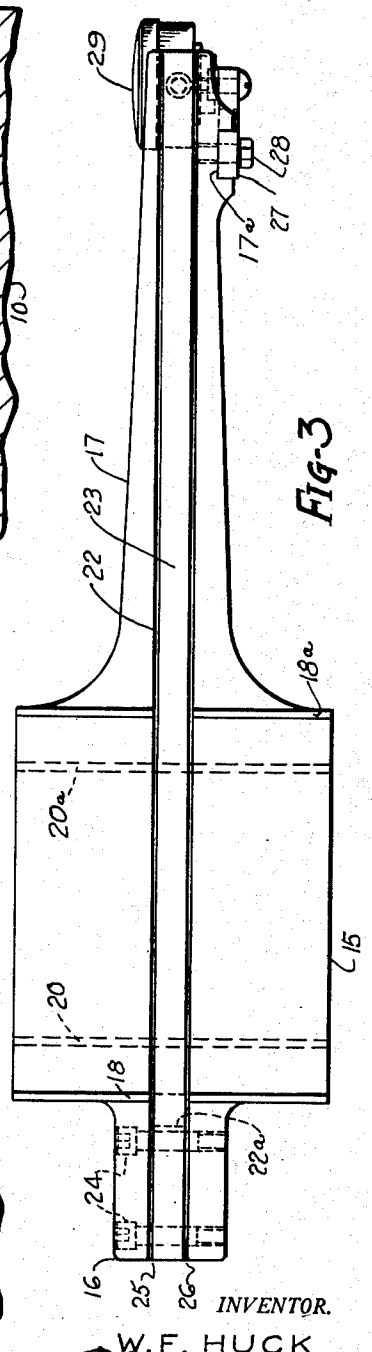


FIG-3

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PRESSURE-INDICATING DEVICE FOR PRINTING PRESSES

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3 Claims. (Cl. 73—141)

This invention relates in general to means for measuring the pressure applied by a printing cylinder to a printing plate while passing thereover, and with a view to determining the effect of different pressures in producing printed impressions.

An object of the invention is to provide pressure-indicating means that may be instantly applied to the flat bed of a printing-press and effective to show the pressure progressively applied to a printing plate during the printing operation, and the effect of such pressure upon the character of the printing impressions produced.

Another object of the invention is the provision of a pressure-indicating device, embodying a comparatively simplified design and construction, and suitable for use with substantially all types of flat bed presses and effective to denote pressures encountered in normal use.

A further object is to provide a device having means to afford a magnified indication of any pressure, however slight, exerted by a printing cylinder against a flat printing plate during the printing operation.

Other objects and advantages residing in the design, construction and arrangement of parts will appear as the description proceeds and will be best understood when taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of an embodiment of the invention as operatively applied to a printing press and showing the engagement of the device by a printing cylinder;

Fig. 2 is a view similar to Figure 1, but with the printing cylinder in precontacting position; and

Fig. 3 is a bottom view of the device, as seen in the direction of the arrows 3—3 of Fig. 2.

In the printing art, it is of importance to determine the degree of pressure applied to a printing plate, since the pressure in conjunction with the ink supply are instrumental in regulating the clarity of the printed impression. Means for determining the pressure should preferably be portable, rugged in construction, readily applied to the printing press and denote all normal operating pressures produced during the printing process.

Referring now to the drawings, the numeral **10** designates the flat bed of a printing press of conventional construction, and **11** a coacting printing cylinder having the usual sheet or paper grippers, as at **12**, adapted for retaining a sheet of material **13** on the cylinder during the printing operation.

The pressure-recording device or instrument of the present invention, designated generally at **14**, comprises a body portion **15** of substantial rectangular configuration and having a rear extension **16** at one end, formed integrally therewith; and an elongated extension **17** at its forward end. The rectangular body portion **15** is provided with a pair of marginal, downwardly-projecting flanges **18**, **18***a* which serve as supporting elements and aid in positioning it on the bed **10** of the printing press.

The top of the body portion **15** is formed with a pair of oppositely-disposed, upwardly-projecting flanges, as at **20**, **20***a*; these flanges serving to locate therebetween a thin printing plate **21** upon the upper surface of the body portion. An elongated channel or groove **22** extends continuously through the entire length of the instrument from the extremity of the left hand extension **16** to the outer extremity of the right hand extension **17**. This groove **22**, formed on the underside of the instrument, has a depth in excess of one-half the thickness of the body portion **15** and of the right hand extension **17**, but extends through the full thickness of the left hand extension **16** from about the point **22***a* in Figures 1, 2 and 3.

An elongated member in the form of a lever or tongue **23**, arranged in the slot **22**, has a contour as indicated in Fig. 2 and a thickness about half the depth of slot **22** on the right hand end; and is enlarged towards the left until at the point **22***a* it attains the full thickness of the extension **16** to which it is rigidly fastened by screw bolts **24** and evenly spaced therein by spacer elements **25**, **26**.

A bracket **27** fastened to a recessed portion **17***a* of the extension **17** by screw **28**, serves as a support for a dial-type indicator, designated generally at **29**. The indicator **29** has a stem **30** extending downwardly through an opening **31** in the top of the extension **17** and thence into operative, biased contact with the upper surface of the tongue **23** at the point **32**.

Inspection and comparison of Figures 1 and 2 will aid in making clear the operation of the device.

When, as shown in Figure 2, the cylinder **11** is not in contact with the printing plate **21** positioned on the body portion **15**, the extensions **16** and **17** will lie in the position depicted; but when the printing plate **21** is engaged by the cylinder **11** with pressure, the body portion **15** will be slightly bowed or deflected downwardly, while the extensions **16** and **17** will deflect oppositely or in an upward direction to a magnified degree, as shown in Figure 1. At the same time, the right hand end of the tongue **23**, being rigidly fastened to the left-hand extension **16**, will swing downwardly and thus permit the indicator stem **30** in biased engagement therewith, to move downwardly while the body portion of the indicator **29** moves upwardly with extension **17**. This will be accompanied by an indication on the dial of the indicator that will measure or denote the combined motions of both the tongue **23** and the extension **17**.

The length of the right hand extension **17** and the correspondingly long lever **23**, it will be observed, combine to greatly amplify slight downward deflections of the body portion **15**, so that small pressures or variations thereof, imposed by the cylinder **11** on the printing plate **21** may be easily and conveniently observed on the dial of the indicator **29**.

It will be further noted that as the cylinder **11** moves from left to right, as viewed in Figs. 1 and 2, the printing plate **21** will be progressively engaged and deflected, the deflection gradually increasing to a maximum as the cylinder reaches the center of the printing plate, and then decreasing to a minimum as the cylinder is about to pass beyond the plate from which point the pressure is zero.

The character of the printing impressions produced by the plate **21** on the sheet of paper **13** on the cylinder will denote to the operator whether the pressure is to be increased or decreased in order to achieve the excellence of printing desired.

It is to be understood that the invention is susceptible to some modification and change without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

What I claim is:

1. A pressure-indicating device of the kind described and for use with printing presses, said device having a deflectible body portion constructed and adapted to support a printing plate in an operative position with respect to the bed of the printing press, a pair of flanges projecting downwardly from said body portion and serving as its support upon the bed of the printing press, said flanges being arranged in spaced relation transversely across opposite ends of the body portion, said body portion also having a pair of oppositely-directed extensions, groove means stretching longitudinally through said body portion and extensions, an elongated member arranged in said groove means, said elongated member having one terminal portion rigidly secured to one of the extensions and having another terminal portion movable relatively to the other of the extensions, a pressure-indicating apparatus fastened to an outer portion of said other of the

extensions, said pressure-indicating apparatus having an operating element projecting therefrom and engaging an adjacent end of said elongated member, said element being actuated by relative movement of the adjacent end of the elongated member with respect to the portion of the extension whereon the pressure-indicating apparatus is fastened and when pressure is applied to a printing plate on said body portion.

2. A pressure-indicating device of the kind described and for use with printing presses, said device having a body portion constructed and adapted to support a printing plate in an operative position with respect to the bed of the printing press, a pair of flanges projecting downwardly from said body portion and serving as its support upon the bed of the press, said flanges being arranged in spaced relation transversely across opposite ends of the body portion, said body portion also having a pair of oppositely-directed extensions, groove means stretching longitudinally through said body portion and extensions, an elongated member arranged in said groove means, said elongated member having one terminal portion movable relatively to one of the extensions and having another terminal portion rigidly secured to the other of the extensions, a bracket secured to the said one of the extensions, a pressure-indicating apparatus fastened to said bracket, and an operating element projecting downwardly from said apparatus and engaging an adjacent end of the elongated member; whereby pressure applied to a printing plate on the body portion will deflect said body portion and consequently cause the end of the extension whereon the pressure-indicating apparatus is fastened to move relatively to the adjacent end of the elongated member that is in contact with the operating element.

3. A pressure-indicating device of the kind described and for use with printing presses, said device having a deflectible body portion, a pair of flanges projecting upwardly from the body portion and effective to operatively locate a printing plate thereon, a second pair of flanges arranged in spaced relation transversely across and projecting downwardly from opposite ends of the body portion, said second pair of flanges serving to support the device on the bed of a printing press, a pair of oppositely-directed extensions formed integrally with the body portion, groove means stretching longitudinally through the body portion and the extensions, said groove means having a greater depth in one extension than in the other extension, an elongated member arranged within the groove means and rigidly attached at one end to the extension having the greater depth, and a pressure indicating apparatus connected to the other extension of less depth, said apparatus having an operating element projecting therefrom and engaging an adjacent end of the elongated member, said element being actuated by relative movement of the said adjacent end with respect to the elongated member and when pressure is applied to a printing plate on said body portion.

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