May 27, 1930. J. F. O'CONNOR 1,760,714

IMPRINT TESTING DEVICE

Filed Dec. 27, 1927

Fig. 1.

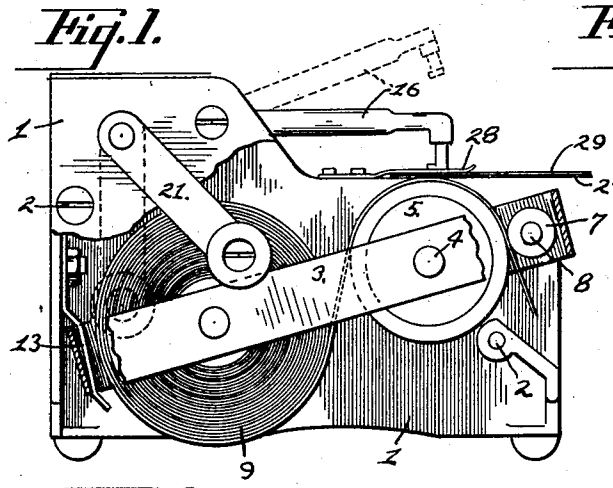


Fig. 2.

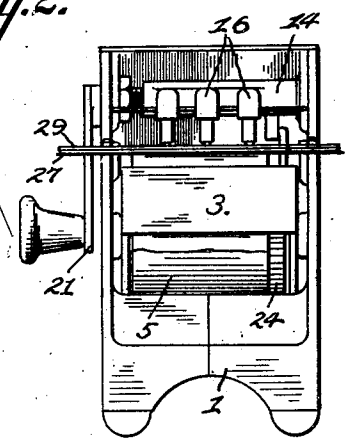


Fig. 3.

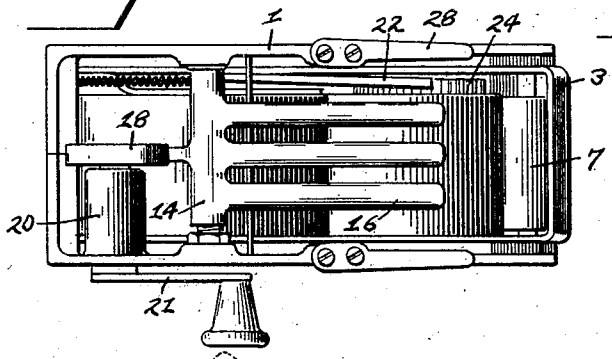


Fig. 5.

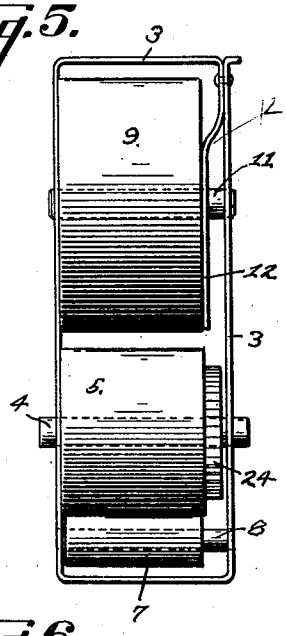


Fig. 4.

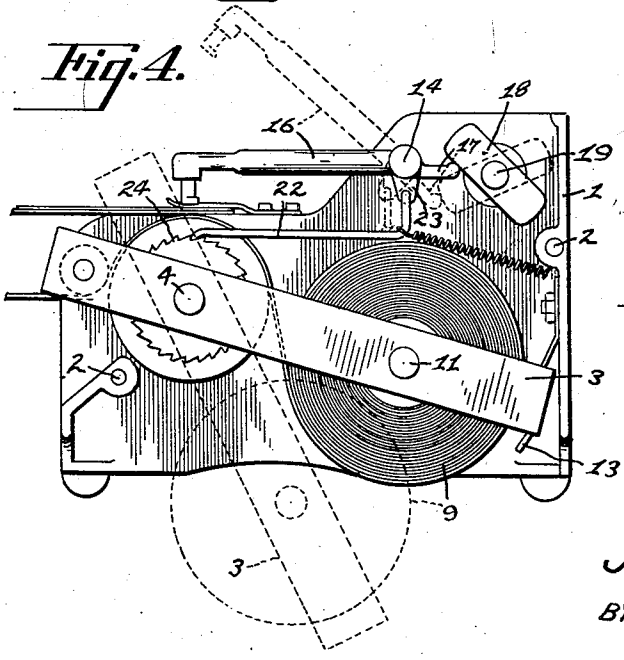
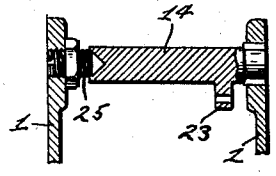


Fig. 6.



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UNITED STATES PATENT OFFICE

JEROME F. O'CONNOR, OF SAN FRANCISCO, CALIFORNIA

IMPRINT-TESTING DEVICE

Application filed December 27, 1927. Serial No. 242,878.

My invention relates to improvements in imprint testing devices for testing carbon paper, typing ribbons, and the like, wherein an impressing member is actuated to strike a succession of impressions upon a strip of paper automatically advanced between each impression to determine the number of impressions that may be obtained from the material being tested.

The primary object of my invention is to provide an improved testing device for carbon papers and imprinting ribbons.

Another object is to provide an improved device of the character described which will accurately simulate real service conditions and produce a true test of the number of impressions obtainable from any particular carbon paper or typing ribbon.

A further object is to provide an improved device of extremely light and compact form and which may be easily and rapidly operated.

Another object is to provide an improved device which will facilitate the inserting and replacing of rolls of paper.

A still further object is to provide an improved construction which can be manufactured economically and which will be highly efficient in operation.

I accomplish these and other objects by means of the improved device disclosed in the drawings forming a part of the present application wherein like characters of reference are used to designate similar parts throughout the specification and drawings, and in which—

Fig. 1 is a right side elevation of my improved imprint testing device, the near side of the housing being partially broken away;

Fig. 2 is a front elevation of the device as shown in Fig. 1;

Fig. 3 is a plan view of the device;

Fig. 4 is a left side elevation of the device, the near side of the housing being removed;

Fig. 5 is a plan view of the platen frame assembly; and

Fig. 6 is a broken sectional detail showing the manner in which the impressing member is pivotally mounted within the housing.

Referring to the drawings, the numeral 1 is used to designate in general a housing formed in two longitudinally matching sections arranged to be assembled and secured together by suitable screws 2.

A platen frame 3 is mounted within the housing 1, said frame being pivotally movable upon the journals 4 of a platen roll 5 mounted within the frame. The journals 4 extend through the sides of the frame and are journaled within the sides of the housing 1 to rotatably support the platen within the housing and form a pivot for the frame 3. A friction roll 7 is mounted within the frame in proximate relation to the front of the platen roll 5, said roll being mounted by means of a shaft 8 rotatably engaged by the side portions of the frame 3.

A roll of paper 9 is mounted within the back portion of the frame 3 by means of a shaft 11 loosely engaged by the side portions of the frame. The free end of the paper roll is threaded over the platen roll 5 and between said platen roll and the friction roll 7. An inwardly disposed extension 12 formed integrally with the frame 3 is arranged to exert a slight spring pressure against the side of the roll 9 to normally prevent the unwinding of the roll. A spring clip 13 is arranged to engage and normally hold the frame 3 in operative position.

An impressing member 14 is pivotally mounted within the upper portion of the housing 1, said member being provided with a plurality of type bars 16 extending forwardly to a position directly over the platen roll 5. Downwardly disposed extensions having type letters or other suitable characters formed upon the lower ends thereof are carried upon the outer ends of the bars 16. An extension 17 is formed upon the member 14 to be engaged by a cam 18 mounted upon a shaft 19 journaled in a bearing 20 formed within one side of the housing 1. A crank handle 21 is secured upon an outwardly extending end of the shaft 19 whereby said shaft and the cam 18 may be rapidly rotated.

A pawl 22 is connected to an extension 23 formed upon the member 14 and arranged to extend into operative engagement with a

ratchet 24 secured upon the platen roll 5. A spring 26 is connected between the pawl 22 and extension 23 and the back of the housing 1.

The frame 3 is formed from a strip metal bent to form a substantially rectangular frame, the rolls 5 and 7 being assembled into the frame and permanently retained between the side portions thereof. The ends of the journals 4 are received within bearing portions formed in the side members of the frame, thereby retaining the platen roll and frame within the housing when the housing members are assembled and secured in matching relation. The shaft 11 is removable from the frame 3. A roll of paper 9 is placed in the rearward portion of the frame upon the shaft 11, the length of the shaft being such that, when the frame 3 is moved into normal operative position within the housing, the ends of the shaft 11 will be engaged by the side walls of the housing to retain the shaft in operative position upon the frame. The member 14 is removably mounted by means of a threaded pivot member 25 mounted within a side member of the housing.

In operation, the paper from the roll 9 is threaded over the platen roll 5 and downwardly between said roll 5 and the friction roll 7. An imprinting web 27 such as a piece of carbon paper, or ribbon, is placed against the upper surface of the platen roll 5 and the paper extending thereover as shown in Figs. 1 and 2 of the drawings, the upper surface of said roll being arranged in the plane of the forward portions of the side walls of the housing 1 as shown. Clips 28 are mounted upon the upper edges of the side walls of the housing to engage and retain the imprinting web 27. The crank handle 21 is now rotated, thereby causing the cam 18 to engage and depress the extension 17 and causing the type bars 16 to be swung upwardly as indicated in dotted lines in Figs. 1 and 4 of the drawings. As the cam clears the extension 17, the spring 26, against the tension of which the impressing member 14 has been moved, causes the type bars 16 to be swung back and strike an impression through the web 27 against the paper 9 and platen roll 5. The tension of the spring 26 is such that the impression struck by the type bars 16 is substantially the same as the impression normally struck by the type bar of an ordinary typewriter and said bars 16 are preferably provided with type characters of the same face as used upon typewriters so as to produce an equivalent impression.

As the member 14 is turned to swing the bars 16 upwardly away from the platen, the pawl 22 is advanced by the extension 23 to engage the ratchet 24 and thereby turn the platen sufficiently to advance the paper 9 an amount substantially equal to the ordinary typewriter spacing. As the bars 16 are moved down to strike an impression the pawl is moved back to engage the next tooth of the ratchet when the bars are raised for the next impression.

The cam 18 is provided with two diametrically opposite lifting portions so that for each rotation of the shaft 19 and cam 18, the type bars 16 will be actuated to make two impressions. By making a few turns of the handle 21, a succession of impressions will be made in regular spaced relation along the paper strip through the portions of the imprinting web 27 contacted by the type bar characters, the strip of paper 9 being moved under the web 27 and fed outwardly through the front of the housing, said strip being torn off along the forward edge of the frame 3 after the test is completed. In this manner the maximum number of impressions which can be produced by the imprinting web may be accurately determined as the test will permit the actual number of legible impressions to be counted.

In testing carbon papers, a sheet of suitable paper 29 is placed over the carbon paper 27 to obtain the same conditions that prevail in actual use. In testing typewriter ribbons and the like, this sheet 29 is omitted.

When a roll of paper 9 has been exhausted, the frame 3 is moved out of engagement with the clip 13 and swung to the position indicated in dotted lines in Fig. 4. The shaft 11 may now be removed and a fresh roll of paper inserted and threaded over the platen.

While I have illustrated and described what I regard as the preferred embodiment of my invention, the device is, of course, subject to modification in numerous details without departing from the spirit of my invention. I therefore do not wish to restrict myself to the specific details disclosed, but desire to avail myself of all modifications which may fall within the scope of the appended claims.

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

1. A testing device comprising a housing; a platen rotatably mounted within the housing; a frame mounted within the housing; a roll of paper mounted upon the frame and threaded over the platen, said frame being arranged to be moved outwardly from the housing to permit replacement of the roll; an imprinting member pivotally mounted within the housing and arranged to strike against the platen and paper to impress marks upon said paper through an imprinting web held thereagainst for testing; and means for actuating the impressing member to make a succession of impressions.

2. A testing device comprising a housing; a platen rotatably mounted within the housing; a frame mounted within the housing; a roll of paper mounted upon the frame and

threaded over the platen, said frame being arranged to be moved outwardly from the housing to permit replacement of the roll; an imprinting member pivotally mounted within the housing and arranged to strike against the platen and paper to impress marks upon said paper through an imprinting web held thereagainst for testing; and means for actuating the impressing member to make a succession of impressions; and means actuated in connection with the impressing member for automatically advancing the paper over the platen after each impression.

3. A testing device comprising a housing; a frame; a platen having journals pivotally engaging the frame and journaled in the housing; a roll of paper mounted upon the frame and threaded over the platen, said frame being arranged to be swung outwardly upon the platen journals to permit replacement of the roll; an imprinting member pivotally mounted within the housing and arranged to strike against the platen and paper to impress marks upon said paper through an imprinting web held thereagainst for testing; and means for actuating the impressing member to make a succession of impressions.

4. A testing device comprising a housing; a frame; a platen having journals pivotally engaging the frame and journaled in the housing; a roll of paper mounted upon the frame and threaded over the platen, said frame being arranged to be swung outwardly upon the platen journals to permit replacement of the roll; an imprinting member pivotally mounted within the housing and arranged to strike against the platen and paper to impress marks upon said paper through an imprinting web held thereagainst for testing; means for actuating the impressing member to make a succession of impressions; and means actuated in connection with the impressing member for automatically advancing the paper over the platen after each impression.

5. A testing device comprising a housing; a frame; a platen having journals pivotally engaging the frame and journaled in the housing; a roll of paper mounted upon the frame and threaded over the platen, said frame being arranged to be swung outwardly upon the platen journals to permit replacement of the roll; an imprinting member pivotally mounted within the housing and arranged to strike against the platen and paper to impress marks upon said paper through an imprinting web held thereagainst for testing; and means for actuating the impressing member to make a succession of impressions; a ratchet secured upon one end of the platen; and a pawl connected to the impressing member and actuated thereby for automatically turning the platen to advance the paper after each impression.

6. A testing device comprising a housing; a rectangular frame mounted within the housing; a platen mounted within the frame, said platen being provided with journals extending through the frame to form a pivot therefor and journaled within the sides of the housing; a friction roller mounted within the frame in proximate relation to the platen; a roll of paper mounted within the frame and threaded over the platen and between said platen and the friction roll, said frame being arranged to be swung outwardly upon its pivot to permit replacement of the roll; means for striking a succession of impressions upon the paper through an imprinting web held against said paper and the platen; and means for advancing the paper over the platen after each impression.

7. A testing device comprising a housing; a rectangular frame mounted within the housing; a platen mounted within the frame, said platen being provided with journals extending through the frame to form a pivot therefor and journaled within the sides of the housing; a roll of paper mounted within the frame and threaded over the platen, said frame being arranged to be swung outwardly upon its pivot to permit replacement of the roll; means for normally holding the frame in operative position within the housing; means for striking a succession of impressions upon the paper through an imprinting web held against said paper and the platen; and means for advancing the paper over the platen after each impression.

8. A testing device comprising a housing; a rectangular frame mounted within the housing; a platen mounted within the frame, said platen being provided with journals extending through the frame to form a pivot therefor and journaled within the sides of the housing; a roll of paper mounted within the frame and threaded over the platen, said frame being arranged to be swung outwardly upon its pivot to permit replacement of the roll; means for normally holding the frame in operative position within the housing; means for striking a succession of impressions upon the paper through an imprinting web held against said paper and the platen; means for advancing the paper over the platen after each impression; and means carried by the frame and frictionally engaging the roll of paper to normally prevent the unwinding of said roll.

9. A testing device comprising a housing; a rectangular frame mounted within the housing; a platen mounted within the frame, said platen being provided with journals extending through the frame to form a pivot therefor and journaled within the sides of the housing; a roll of paper mounted within the frame and threaded over the platen, said frame being arranged to be swung outwardly upon its pivot to permit replacement of the

roll; means for normally holding the frame in operative position within the housing; an impressing member mounted within the housing and arranged to strike upon the platen; a cam mounted within the housing and arranged to engage the impressing member; and means for rotating the cam to actuate the impressing member to strike a succession of impressions upon the paper through an imprinting web held against said paper and the platen.

10. A testing device comprising a housing; a rectangular frame mounted within the housing; a platen mounted within the frame, said platen being provided with journals extending through the frame to form a pivot therefor and journaled within the sides of the housing; a roll of paper mounted within the frame and threaded over the platen, said frame being arranged to be swung outwardly upon its pivot to permit replacement of the roll; means for normally holding the frame in operative position within the housing; an impressing member mounted within the housing and arranged to strike upon the platen; a cam mounted within the housing and arranged to engage the impressing member; means for rotating the cam to actuate the impressing member to strike a succession of impressions upon the paper through an imprinting web held against said paper and the platen; and means for advancing the paper over the platen after each impression.

In witness whereof, I hereunto set my signature.

JEROME F. O'CONNOR.