

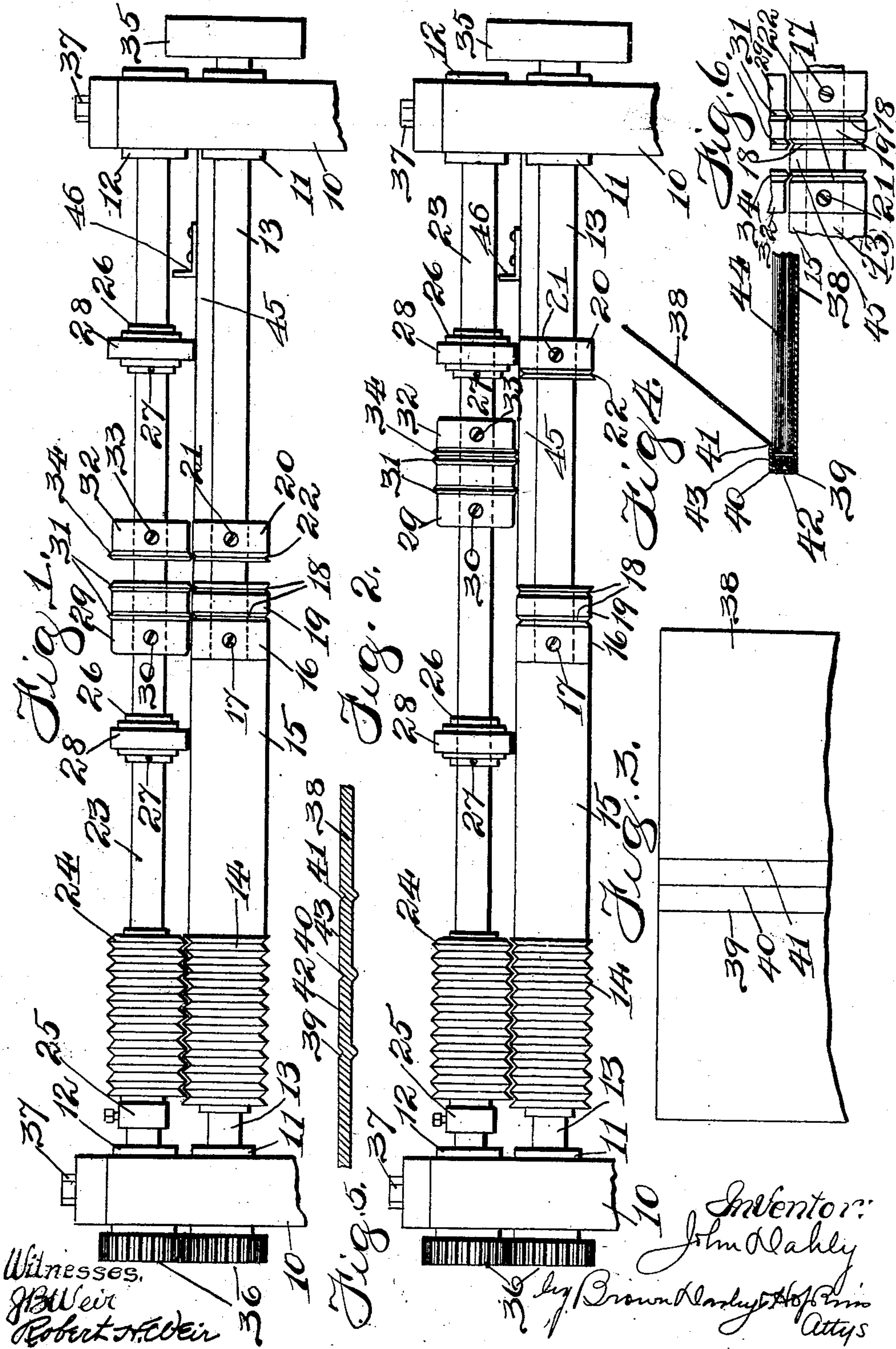
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MACHINE FOR CREASING COVERS FOR BOOKS, MAGAZINES, PAMPHLETS, AND THE LIKE.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR CREASING COVERS FOR BOOKS, MAGAZINES, PAMPHLETS, AND THE LIKE.

No. 910,791.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed April 2, 1906, Serial No. 309,291. Renewed July 6, 1908. Serial No. 442,246.

To all whom it may concern:

Be it known that I, JOHN DAHLY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Machines for Creasing Covers for Books, Magazines, Pamphlets, and the Like, of which the following is a full, clear, and exact specification.

10 This invention relates to improvements in machines for creasing covers for books, and the like, whereby the cover may be rendered more flexible adjacent the binding.

A further object is to provide an improved
15 machine of this character for crimping or creasing the cover for a book or the like, at the points where the cover is bent to form the back, and also along a line some distance from the back, whereby the cover may be
20 opened on a hinge formed remote from the binding, thereby greatly increasing the life of the cover and avoiding the danger of detaching the cover by the opening of the book.

In the application for Letters-Patent filed
25 February 5, 1906, Serial No. 299,574, there is shown and described an improved machine for crimping book leaves, and to construct an improved attachment which may be applied to this machine, whereby the
30 same may be readily and quickly converted from a leaf crimping, to a cover crimping machine, without detaching the parts, is another object of this invention.

A further object is to construct an im-
35 proved machine of this character which will be simple in construction, cheap to manufacture, and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful ob-
40 jects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed, and shown in the accompanying
45 drawing illustrating an exemplification of this invention, and in which—

Figure 1 is a front elevation of a machine constructed in accordance with the principles of this invention; Fig. 2 is a front eleva-
50 tion of the machine with the cover creasing or crimping mechanism placed out of operative position. Fig. 3 is a plan view of a portion of a cover creased or crimped by this improved machine. Fig. 4 is a sectional
55 view of a portion of a book having a creased

cover applied thereto. Fig. 5 is an enlarged detail transverse sectional view of a portion of a cover showing the manner and shape of the crimps or creases formed by this ma-
chine. Fig. 6 is a detail view, showing a 60 modified arrangement of the creasing or crimping rollers.

Referring more particularly to the drawing, and in which the same reference characters designate similar parts in the several
65 views, the numeral 10 designates standards or supports having suitable journal boxes 11—12 adjustably mounted therein.

A shaft 13 is journaled in the boxes 11 and secured to this shaft and adjacent one end 70 thereof is a corrugated sleeve or roll 14, which is held in place by any suitable means. Secured also to the shaft 13 is a roller 15, one end of which is adjacent the end of the sleeve or roller 14, and said roller 15 is of any desired
75 length, preferably of a length to extend substantially half way between the standards 10. A roller 16 is also secured to the shaft 13 and is held against the end of the roller 15 in
80 any suitable manner, preferably by means of a screw 17. This roller 16 is of a diameter equal to the diameter of the roller 15, and is provided with two peripheral grooves 18
85 spaced from each other, to form a bearing surface 19 between the grooves 18. An additional roller 20 is also mounted on the shaft
13, and is adjustably held in position in any suitable manner, such as by means of a screw
21. This roller 20 is of a diameter equal to
90 the diameter of the roller 16, and is provided with a single peripheral groove 22. The grooves 18 and 22 in these rollers may be of
any desired shape, but they are preferably V-shaped with the walls thereof disposed at
95 an angle of 90°. A second shaft 23 parallel with and suitably spaced from the shaft 13, is journaled in the boxes 12. A corrugated sleeve or roll 24, mounted upon the shaft 23,
is adjustably held in position in any suitable manner, such as by means of a sleeve 25, 100
whereby the roll or sleeve 24 may be adjusted longitudinally with relation to the companion sleeve or roll 14, with which it meshes and coöperates.

A plurality of feed rollers 26, adjustably 105 mounted upon the shaft 23, are held in position in any suitable manner, such as by means of screws 27, and said rollers are preferably provided with rubber faces or peripheral rubber rings 28. These rollers are of such a di- 110

ameter that when in proximity to, will bear upon the periphery of the roll 15. Mounted also on the shaft 23, preferably between the feed rollers 26 is a creasing roller 29, which is
 5 secured to the shaft in any suitable manner, such as a screw 30. This roller is provided with spaced peripheral ribs or webs 31, which are adapted to project into and cooperate with the grooves 18 of the roller 16. A sec-
 10 ond creasing roller 32 is adjustably secured to the shaft 23 by any suitable means, such as a screw 33, and said roller is provided with a single peripheral rib or web 34 which is adapted to project into and cooperate with
 15 the groove 22 in the roller 20. The sides of the ribs or webs 31—34 may be disposed at any suitable angle, but preferably at the same angle as the angle of inclination of the grooves 18—22. The body portions of the
 20 rollers 29—32 are adapted to cooperate with the body portions of the rollers 16—20 to form additional feeding means for the material to be creased, as in Fig. 1. These creas-
 25 ings or crimping rollers may be constructed of any suitable material, preferably annealed tool steel.

Secured to one of the shafts 13—20, and preferably on the outside of one of the supports or standards, is a driving pulley 35, and
 30 secured to both of the said shafts are gears 36 which mesh with each other, and by means of which both of these shafts are rotated in unison when the pulley 35 is driven.

The boxes 12 in which the shaft 23 is jour-
 35 naled may be adjusted with relation to the boxes 11, in any well known manner, such as by means of a screw 37, whereby the position of the two shafts 13—23 and the cooperating rollers may be varied to accommodate the
 40 different thickness of material to be operated upon, as will be fully understood. The table 45 is arranged adjacent the rollers and is provided with an adjustable stop or gage 46 for guiding the paper through the roller.

45 With the parts assembled as shown in Fig. 1, the machine is ready to crease or crimp the material for the cover, and the material 38 is passed from the table 45 between the rollers, being guided therethrough by any suitable
 50 guides 46; the shafts 13—23 being adjusted to accommodate the material 38 of the desired thickness. During its passage between the rollers, the peripheral webs or ribs 31—34 of the rollers 29—32 will force the
 55 material adjacent thereto into the grooves 18—22 of the rollers 16—20, thereby crimping or creasing the same, as at 39—40—41 (Fig. 5).

The ribs 31, as well as the grooves 18, are
 60 permanent, respectively, with relation to each other, whereby the width of the space 42 formed between the grooves or creases 39—40 is constant, but the rollers 20 and 32 are adjustable with relation to the rollers 16
 65 and 29, by means of which the space 43

formed between the grooves or creases 40 and 41 may be varied according to the thickness or the number of signatures comprising the book to which the cover is to be applied.

The cover may be applied in any suitable
 70 manner. The signatures 44 are assembled and secured in any manner, and then placed upon the inside of one leaf of the cover with their rear edge adjacent either of the grooves 39 or 40, according to the process of assem-
 75 bling. Glue is then applied to the edge, and the adjacent portion of the top of the signatures and to the space 42 and 43, if desired. The cover is then folded upon the crease or
 80 crimp 39 or 40, so as to cause the portions 42 and 43 to be secured in position. With this arrangement it will be seen that when the book is completed the cover 38 will open
 85 upon the crease or crimp 41, at a point remote from the binding, as shown in Fig. 4, thereby transferring the strain from that
 90 point and obviating the danger of detaching the cover when the book is opened, and by being creased, the surface of the material is not cracked or cut, which will greatly pro-
 95 long the life of the material and the cover. When used for crimping or creasing covers, the material will not come in contact with the corrugated rollers 14 and 24, as it is guided from the end of the machine remote
 100 from the rollers 14 and 24, and is not of sufficient width to extend thereto.

When it is desired to use the machine for the purpose of crimping ledger sheets, similar to the previous application now on file, it
 105 is necessary to throw the rollers 16—20—29—32 out of operation. This is accomplished by first loosening the screws 21—30—33 respectively of the rollers 20—29—32. The shaft 23 is then raised slightly, which is per-
 110 mitted by loosening the adjusting screws 37, so that the ribs or webs on the rollers may be removed from their cooperating grooves, after which the rollers may be moved to the
 115 desired position. The roller 20 is moved to a position directly in line with and is engaged by one of the feed rollers 26, which is preferably located adjacent one end of the shaft 23, and is secured in position, while the rollers
 120 29—32 are secured to the shaft 23 at a position intermediate the rollers 16—20, where they will be out of contact with a cooperating roller, the roller 16 remaining stationary. With this arrangement and with the parts
 125 assembled and adjusted as shown in Fig. 2, the ledger sheets may be fed and crimped in a manner set forth in the pending application, the rollers 26 and 20 cooperating to assist in feeding the leaves through the corru-
 130 gated rollers 14—24. Thus it will be seen that a machine thus constructed and arranged may be readily and quickly converted from one style of machine to another, without detaching or removing any of the parts. In this exemplification of the invention there
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is shown and described a construction of machine comprising one pair of cooperating rollers provided with spaced ribs for producing two grooves, one at each corner of the back, and an additional pair of cooperating creasing rollers for producing a single crease in the top of the cover remote from the binding; but it may be desirable to produce a similar crease or groove in the back, and it is therefore obvious that the desired result may be accomplished by the addition of another set of creasing rollers.

It may sometimes be desired to apply a cover to small pamphlets where there is only one, or a small number of signatures, in which instance there would be no necessity for the parallel creases for the back or thickness of the book, and only a single central crease would be necessary. In order to accomplish this and produce the single crease or groove, a modified arrangement of the creasing or crimping rollers would be necessary, as shown in Fig. 6. In this arrangement the rollers 20—32, having the single cooperating rib and groove would be placed adjacent the roller 15, and the rollers 16—19 having the spaced cooperating ribs and grooves would both be adjustable, out of operative position. That is, the position of the pairs of creasing rollers would be reversed from the position shown in Figs. 1 and 2.

It is to be understood that it is not desired to be limited to the exact details of construction, or the arrangement of the several parts, as numerous changes may be made therein without departing from the spirit of the invention.

What is claimed as new is:—

1. In a machine for creasing covers and the like, the combination of a pair of cooperating creasing rolls between which a sheet of material is adapted to pass, one roller having spaced peripheral grooves, spaced peripheral ribs on the other roller projecting into the grooves and adapted to produce a constant space between the creases formed there-

by in the material, a second pair of cooperating rolls, one of said rollers having a peripheral groove and the other being provided with a cooperating rib for producing a single groove in the material, means whereby the position of the single groove produced by the second set of rollers may be varied with relation to one of the first said grooves, feed rollers, means for adjusting the rollers of one set into an inoperative position, one of the rollers of the inoperative set being adapted to cooperate with one of the feed rollers for feeding the paper into the active set, and means for rotating the rollers.

2. In a machine for creasing covers and the like, the combination of a pair of cooperative creasing rolls between which a sheet of material is adapted to pass, one roller having spaced peripheral grooves, spaced peripheral ribs on the other roller projecting into the grooves and adapted to produce a constant space between the creases formed thereby in the material, a second pair of cooperating rolls, one of said rollers having a peripheral groove and the other being provided with a cooperative rib for producing a single groove in the material, means whereby the position of the single groove produced by the second set of rollers may be varied with relation to one of the first said grooves, feed rollers, an adjustable gage for the paper, means for adjusting the rollers of one set into an inoperative position, one of the rollers of the inoperative set being adapted to cooperate with one of the feed rollers for feeding the paper into the active set, and means for rotating the rollers.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 29th day of March A. D. 1906.

JOHN DAHLY.

Witnesses:

FRANCIS A. HOPKINS,
J. H. JOCHUM, Jr.