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C. FISHER.

PAPER HOLDER.

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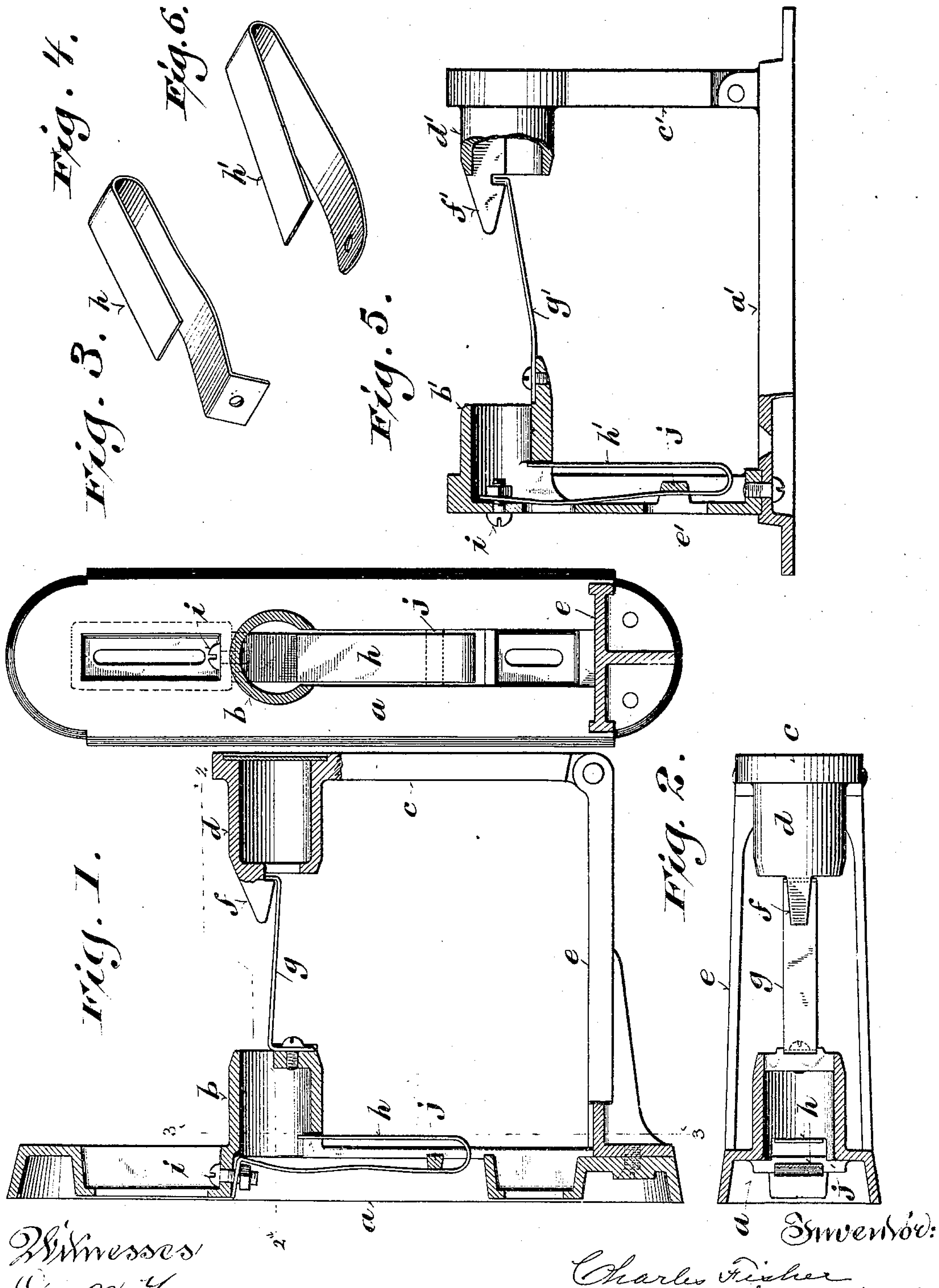

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UNITED STATES PATENT OFFICE.

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PAPER-HOLDER.

SPECIFICATION forming part of Letters Patent No. 792,575, dated June 13, 1905.

Application filed March 18, 1904. Serial No. 198,802.

To all whom it may concern:

Be it known that I, CHARLES FISHER, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Paper-Holders, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates more particularly to tension devices for roll-paper holders. Its main object is to simplify and improve the construction and operation of devices for this purpose.

It consists in certain novel features of construction and in the peculiar arrangement of parts hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a vertical longitudinal section of one form of paper-holder to which my improved tension device is applied. Fig. 2 is a horizontal section of the same on the line 2 2, Fig. 1. Fig. 3 is a vertical section on the line 3 3, Fig. 1. Fig. 4 is a perspective view of the tension-spring detached from the holder. Fig. 5 is a view, partly in horizontal longitudinal section and partly in plan, of a modified form of the fixture; and Fig. 6 is a perspective view of a modification of the tension-spring for the form of holder shown in Fig. 5.

Referring to Figs 1 to 3, inclusive, *a* is a wall-plate formed with a hollow cylindrical stud *b* projecting from its outer face perpendicular thereto and forming a bearing or support for one end of a roll of paper to turn upon. *c* is an arm formed at one end with a hollow cylindrical stud and hinged at the other end to the outer end of an arm or bracket *e*, which is formed with or attached to the plate *a* substantially at right angles thereto. The stud *d* is formed with a beveled hook *f*, adapted to automatically engage with a hooked spring *g*, attached to the outer end of the stud *b* when the arm *c* is turned up into working position, as shown in Fig. 1.

h is a flat tension-spring bent substantially as shown in Fig. 4 and attached at one end, as shown in Fig. 1, by a screw and nut *i*, to the inner upper side of the stud *b*, from which it extends downward in a direction radial to the stud and returns at its free end into a recess in the under side of the stud.

When there is no paper in the holder, the spring bears normally at its free end against the end of the recess in said stud and near its reverse or return bend against a cross-bar *j* on the plate *a*. When a roll of paper is placed in the holder on the studs *b* and *d*, it presses the spring away from its bearings against the stud and cross-bar, so that the face of the spring between its reverse bend and free end will bear against the end of the roll with the greatest force at or near its periphery. The spring exerts sufficient pressure against the roll to prevent the paper from freely unwinding therefrom and to enable a person grasping the free end to readily sever or tear it from the roll.

The reverse bend admits of using a spring of considerable length within a small space, thus affording flexibility as well as a variable pressure against the end of the roll—a very desirable feature in a tension device for a roll-fixture, for as the roll diminishes in size and the free end of the paper approaches the axis on which it turns a greater pull is required to unwind the paper, and hence there should be less resistance to the turning of the roll. Since the free side of the spring *h* bears against the end of the roll at or near its periphery, this bearing-point approaches the free end of the spring as the roll diminishes in size, and consequently less pressure is exerted by the spring against the roll as it becomes smaller.

The perforated end of the spring which is attached to the holder by the screw *i* is bent as shown in Figs. 1 and 4, so as to tend away from its bearing on the frame, and by turning said screw in or out of its nut more or less the tension of the spring and the pressure which it exerts against the roll of paper may be varied.

In the form of holder hereinbefore de-

scribed, as shown in Figs. 1, 2, and 3, the axis of the roll is perpendicular to the wall to which the holder is attached. My improved tension device is, however, applicable to other forms of roll-paper holders or fixtures—as, for example, those in which the axis of the roll is parallel with the wall or surface to which the holder is attached. Referring to Fig. 5, illustrating a fixture of the form last mentioned, a' is a wall-plate provided with arms c' and e', projecting horizontally from its outer face and one of them being hinged thereto. These arms are formed at their outer ends with hollow cylindrical studs b' and d', on which a roll of paper is revolubly held when the hinged arm c' is turned into working position, as shown, and the beveled hook f' on the stud d' is engaged with the hooked spring g' on the opposing stud. The tension-spring h' employed in this form of fixture is substantially the same in shape as that used in the other form, except that it does not have the sharp bend at one end for attaching it to one side of the stud on the wall-plate, but is attached to an end wall of the stud b', being slightly bent near the end to admit of its tension and pressure against the roll being varied by turning the screw i in or out of its nut.

The adjustment and operation of the spring are the same in both forms of the device, the tension or pressure against the roll diminishing as the roll becomes smaller.

Various changes in the minor details of construction and arrangement of the parts of the holder or fixture, particularly of those parts which do not pertain to the tension device, may be made without departing from the principle and intended scope of the invention.

I claim—

1. In a paper-holder the combination of a frame having a recessed stud on which a roll of paper is rotatably held, and a reversely-bent spring attached at one end to the holder adjacent to said stud and projecting at its free end into the recess in the stud in a position radial thereto, the inner end of the recess in said stud forming a bearing to limit the inward movement of the free end of the spring, substantially as described.

2. In a paper-holder the combination of a frame having means for rotatably holding a roll of paper therein and a reversely-bent spring attached at one end to said frame by an adjusting-screw, and adapted to bear on its free side against the end of a roll of paper in said frame at or near the periphery of said roll, said frame having a bearing against which the outer side of said spring rests adjacent to its reverse bend in the absence of a roll of paper, said spring being bent between its fixed end and its reverse bend and tending away from the face of the frame to which it is attached, whereby the tightening of said screw tends to force the reverse bend and friction bearing-face of the spring inwardly toward the roll of paper, substantially as described.

3. In a paper-holder the combination of a frame having means for rotatably holding a roll of paper therein and a reversely-bent spring attached at one end by an adjusting-screw to said frame so as to bear between its reverse bend and free end against the end of a roll of paper with greatest force at or near the periphery of the roll, said spring being bent adjacent to its fixed end and tending away from the face to which it is attached, whereby its tension is varied by tightening or loosening said screw without shifting its bearing against the roll of paper, substantially as described.

4. In a paper-holder the combination of a frame having a recessed stud on which a roll of paper is adapted to be rotatably held, and having a cross-bar at a distance from said stud and a reversely-bent spring attached at one end to said frame adjacent to said stud in a position radial thereto and projecting at its free end into the recess in said stud, said spring bearing at its free end against said stud and between its fixed end and reverse bend against said cross-bar in the absence of a roll of paper, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

CHARLES FISHER.

Witnesses:
H. A. CHRISTENSEN,
CHAS. L. GOSS.