

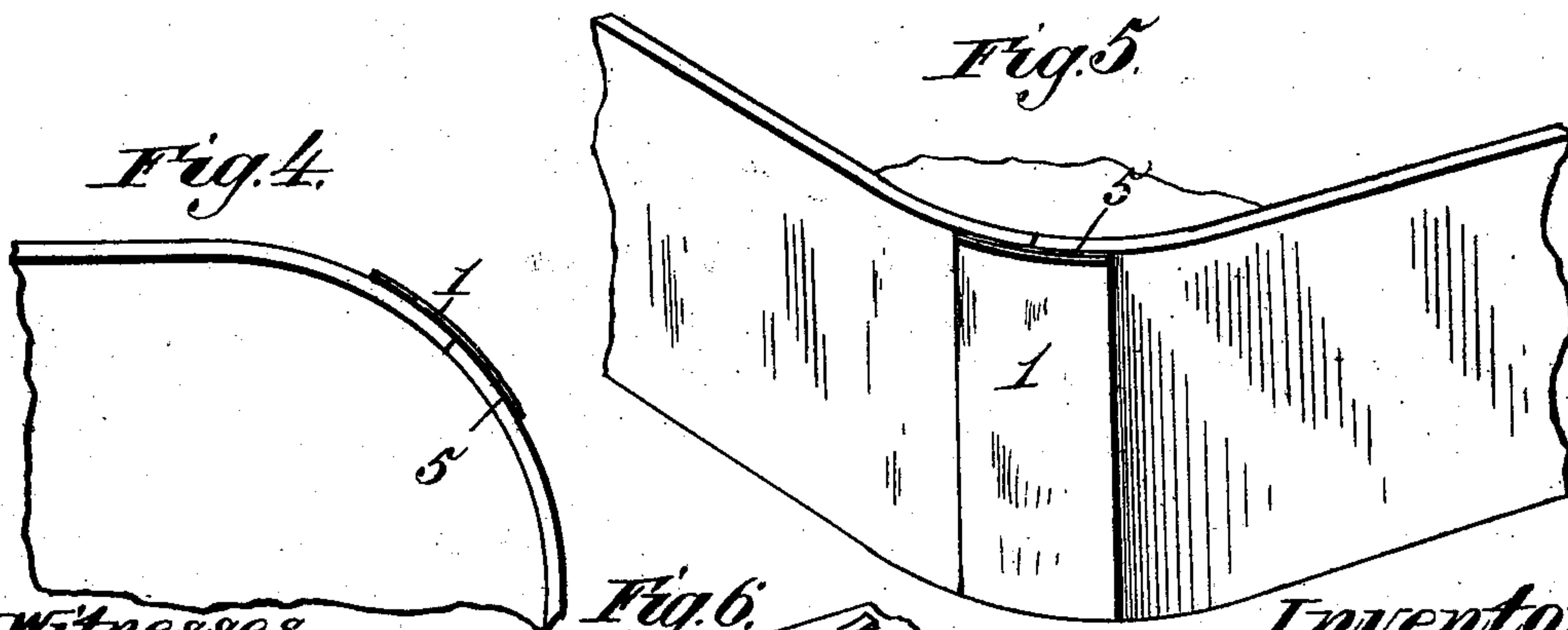
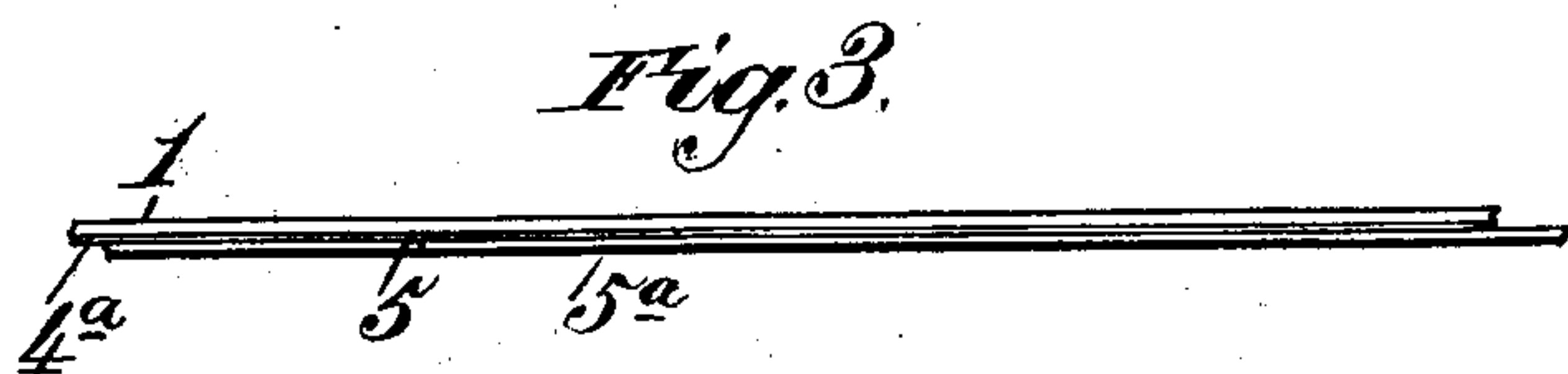
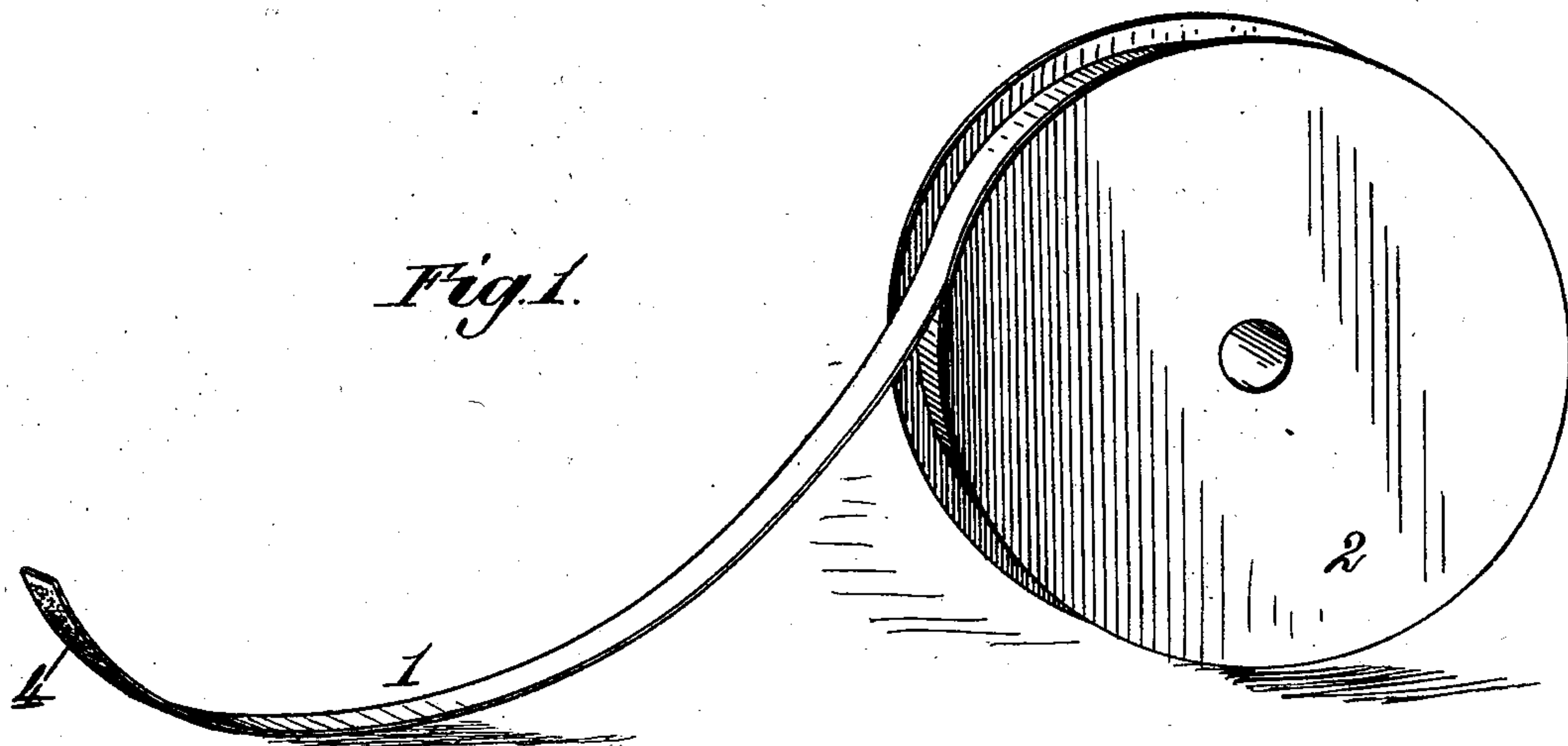
No. 694,436.

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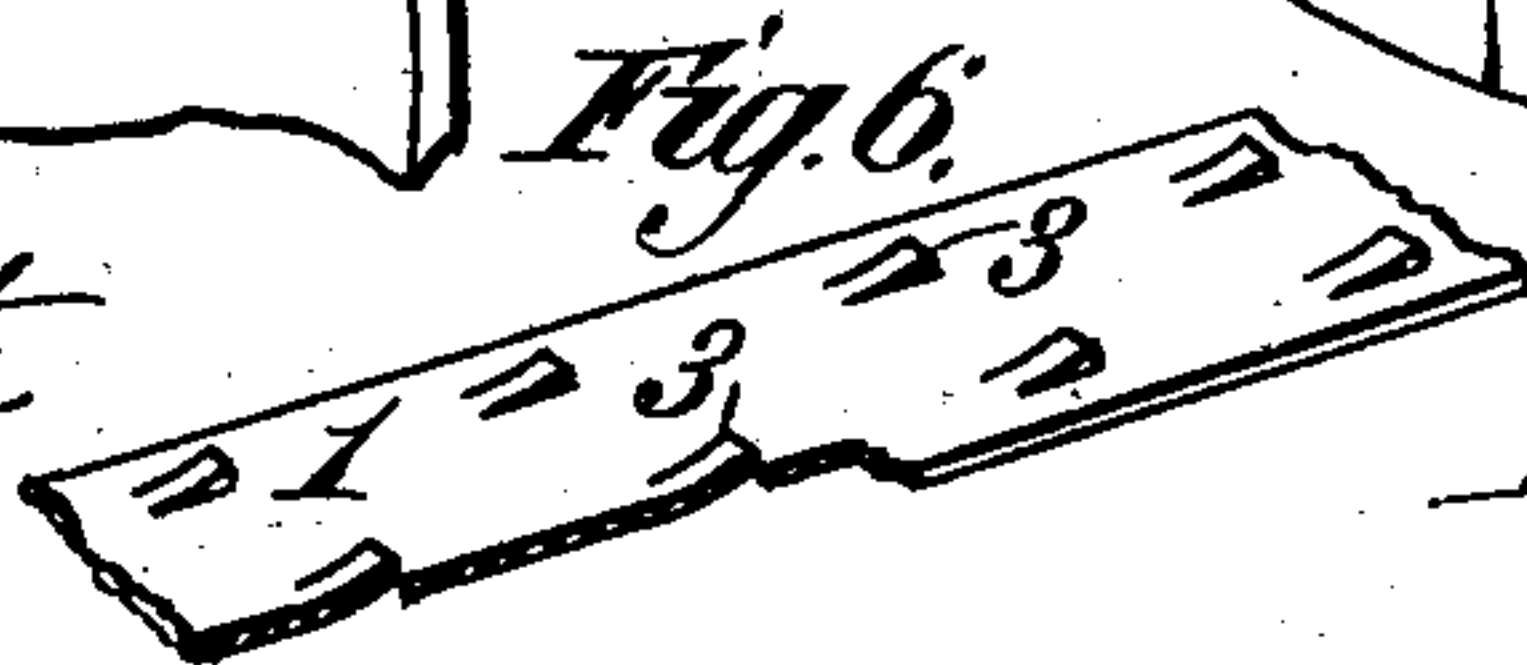
H. B. SMITH.
CORNER STAY FOR PAPER BOXES.

(Application filed June 27, 1900.)

(No Model.)



Witnesses,
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UNITED STATES PATENT OFFICE.

HARRY B. SMITH, OF BROOKLYN, NEW YORK.

CORNER-STAY FOR PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 694,436, dated March 4, 1902.

Application filed June 27, 1900. Serial No. 21,769. (No model.)

To all whom it may concern:

Be it known that I, HARRY B. SMITH, a citizen of the United States, residing at Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Corner-Stays for Paper Boxes, of which the following is a specification.

This invention relates to corner-stays for paper boxes, and has for its object to provide a metallic stay for paper boxes having ornamental corners, said stay being provided on one side with an adhesive coating by means of which the stay is affixed to the box and whereby the usual attaching-prongs employed in connection with metallic corner-stays are dispensed with.

It also has for its object to provide such a stay with a vehicle for carrying the adhesive coating.

It has for a further object to provide such a stay with engaging means for feeding the stay in the machines usually employed for applying the stays to the boxes, and,

Finally, it has for its object to provide a stay of the character described which shall be cheaper, smoother, and better than the stays heretofore commonly employed and which will retain its shape and the shape of the ornamental corners of the box.

To these ends my invention consists in a metallic corner-stay constructed in the manner hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a perspective view of my improved strip partially stripped from its carrying reel or spool. Fig. 2 is a sectional view. Fig. 3 is a similar view of a strip, showing the adhesive-carrying vehicle applied thereto. Figs. 4 and 5 are views of a box-corner, showing a stay attached thereto. Fig. 6 is a perspective view of a strip provided with one form of feeding means.

I will preface the description of my invention by stating that the stay herein shown and described is particularly designed for use in connection with paper boxes having ornamental corners as contradistinguished from boxes having the ordinary square or right-angled corners—that is to say, boxes having

corners of fanciful or ornamental configuration—as shown, for example, in Letters Patent granted to me on the 10th day of October, 1899, No. 634,507.

Heretofore it has been common to employ corner-stays for securing the square or angular corners of paper boxes, consisting of thin sheets or strips of paper pasted or secured by suitable cement or adhesive to the corners of the box; but such stays are entirely unsuitable for boxes having ornamental corners. In the first place such stays lack the requisite strength to hold the corners of such boxes securely, and, secondly, they have not sufficient body to give rigidity to the box-corners and to maintain the ornamental shape of the corners. Metallic stays have also been employed for securing the corners of paper boxes; but it has been usual to provide such stays with prongs or fastening-burs either struck up from the body of the stay or formed thereon by perforating or punching the stay, so as to cause the burs to project from one side thereof. Such metallic stays are objectionable for several reasons. In the first place the prongs or burs when inserted in the paper box weaken the box; secondly, the prongs or burs penetrate to the inner side of the box, presenting an unsightly appearance and detracting from the finished appearance of the box, and if the latter fault be corrected it is necessary to paste or cement a paper lining to the interior of the box, and as this must be done after the box has been completed it not only involves additional expense, but is a tedious operation. Moreover, when the strip is punched or perforated to form the burs said perforations will be visible through the thin paper usually employed for covering the exterior of the box, thus detracting from the finished appearance of the latter.

The principal purpose of the present invention is to provide an improved metallic stay which will possess the requisite rigidity to maintain the shape of the ornamental corners and at the same time will have none of the attendant disadvantages and faults pertaining to the metallic stays now in common use.

Referring to the drawing, the numeral 1 indicates a metallic stay constructed in accordance with my invention and consisting of

a very thin strip of ductile metal, which is adapted to be easily and readily bent into the shape of the ornamental box-corners to which it is to be applied. In practice said stay is preferably made in the form of a continuous strip or ribbon and is wound upon a spool 2, as shown in Fig. 1 of the drawing, to enable it to be fed forward to the box to be stayed by any of the well-known types of corner-staying machines employed for that purpose.

As before stated, the metallic stay-strips in common use are usually perforated and are fed forward to the dies employed for affixing the strips to the box-corners by reciprocating pawls or similar devices, which successively engage the perforations and feed the strip forward to the affixing-dies with a step-by-step movement. In order to permit such pawls to engage and feed forward the strip to the dies or pressure devices, I provide one side of the stay-strip with some suitable engaging means, which may consist of ribs, projections, indentations, holes, or equivalent means and in the present instance are shown as consisting of tongues or lips 3, struck up or stamped out of the body of the strip between its edges and then bent up at an angle to the strip, as shown in Fig. 6. I have shown said tongues or lips formed in pairs arranged side by side, and this arrangement of the tongues or lips is designed for use in connection with a well-known type of machine wherein two reciprocating pawls arranged side by side are employed for engaging the strip and feeding it forward with a step-by-step or intermittent movement. It will be evident, however, that the tongues or lips may be formed singly or that other projections or engaging means may be provided for the pawl or pawls to act on. The opposite side of the stay-strip is coated with an adhesive substance 4 of any suitable or preferred character. When the stay-strip is fed forward over the corner of the box by the corner-staying machine, its adhesive side is moistened by a roller, as is common in such machines, and the die then descends and simultaneously shapes the ornamental corners of the box and also the stay, and the pressure causes the adhesively-coated stay to adhere or be cemented to the box-corners with great tenacity. The metallic stay being formed of very thin and ductile metal is readily and easily bent by the dies into the desired shape, which shape it retains and maintains the ornamental configuration of the box. The pressure applied by the dies to shape the stay and cause it to adhere to the box-corners also presses or flattens down the tongues, lips, or other engaging means, so that the stay presents a perfectly smooth, unbroken, and uninterrupted surface. The metallic stay thus constructed and applied gives great strength and rigidity to the corners of the box and effectually preserves the shape of such orna-

mental corners, and at the same time the body of the box is not penetrated and weakened, as is the case when penetrating prongs or burs are employed for fastening the stay in place. Furthermore, the necessity of lining the box is obviated, and the usual covering of thin calendered paper when applied to the exterior of the box will entirely conceal the stays in such manner that no part of the latter will be visible through the paper covering.

In some instances and with some kinds of metal and adhesive substance difficulty is experienced in causing the adhesive substance to properly adhere to the metallic surface of the stay, and in such instances I provide the stay with an adhesive-carrying agent or vehicle to which the adhesive will readily adhere with great tenacity. For example, reference being made to Fig. 3 of the drawing, a strip of paper 5 may be cemented to the metallic strip with a strong adhesive substance 4^a, that would not be suitable for cementing the strip to the corners of the box, and the paper strip 5 is then coated with the adhesive 5^a, employed for cementing the strip to the box-corners. By such means I provide a composite strip possessing all the rigidity, body, and strength of the metallic stay and at the same time the capability of being quickly and readily cemented to the box-corners and when so applied adhering thereto with great tenacity.

The stay constructed in the manner set forth is adapted to be applied to the box-corners of any of the well-known types of corner-staying machines commonly employed for the purpose.

Having described my invention, what I claim is—

1. As a new article of manufacture, a corner-stay for paper boxes, consisting of a thin strip of ductile metal having on one side thereof a normally dry adhesive, substantially as described.

2. As a new article of manufacture, a corner-stay for paper boxes consisting of a continuous strip of thin, relatively stiff and inelastic metal having affixed to one surface thereof a normally dry adhesive substance capable of becoming sticky when moistened.

3. As a new article of manufacture, a corner-stay for paper boxes, consisting of a thin strip of ductile metal provided on one side with an adhesive-carrying vehicle or agent said vehicle or agent having its outer face coated with an adhesive, substantially as described.

4. As a new article of manufacture, a corner-stay for paper boxes, consisting of a thin strip of ductile metal having cemented to one side thereof a strip of paper coated on its outer side with an adhesive, substantially as described.

5. A corner-stay for paper boxes, comprising a thin strip of metal coated on one side

with an adhesive, and provided on its other side with a plurality of projections, substantially as described.

5 6. A corner-stay for paper boxes comprising a thin strip of metal coated on one side with an adhesive and having a plurality of tongues or lips stamped out of its body and bent up at an angle on the side opposite the adhesive coating, substantially as described
10 and for the purpose specified.

7. A corner-stay for paper boxes compris-

ing a thin strip of metal coated on one side with an adhesive and provided with engaging or feeding means, substantially as described.

In testimony whereof I have hereunto set 15
my hand in presence of two subscribing witnesses.

HARRY B. SMITH.

Witnesses:

C. YOUNG,

A. C. STEIN.