

(No Model.)

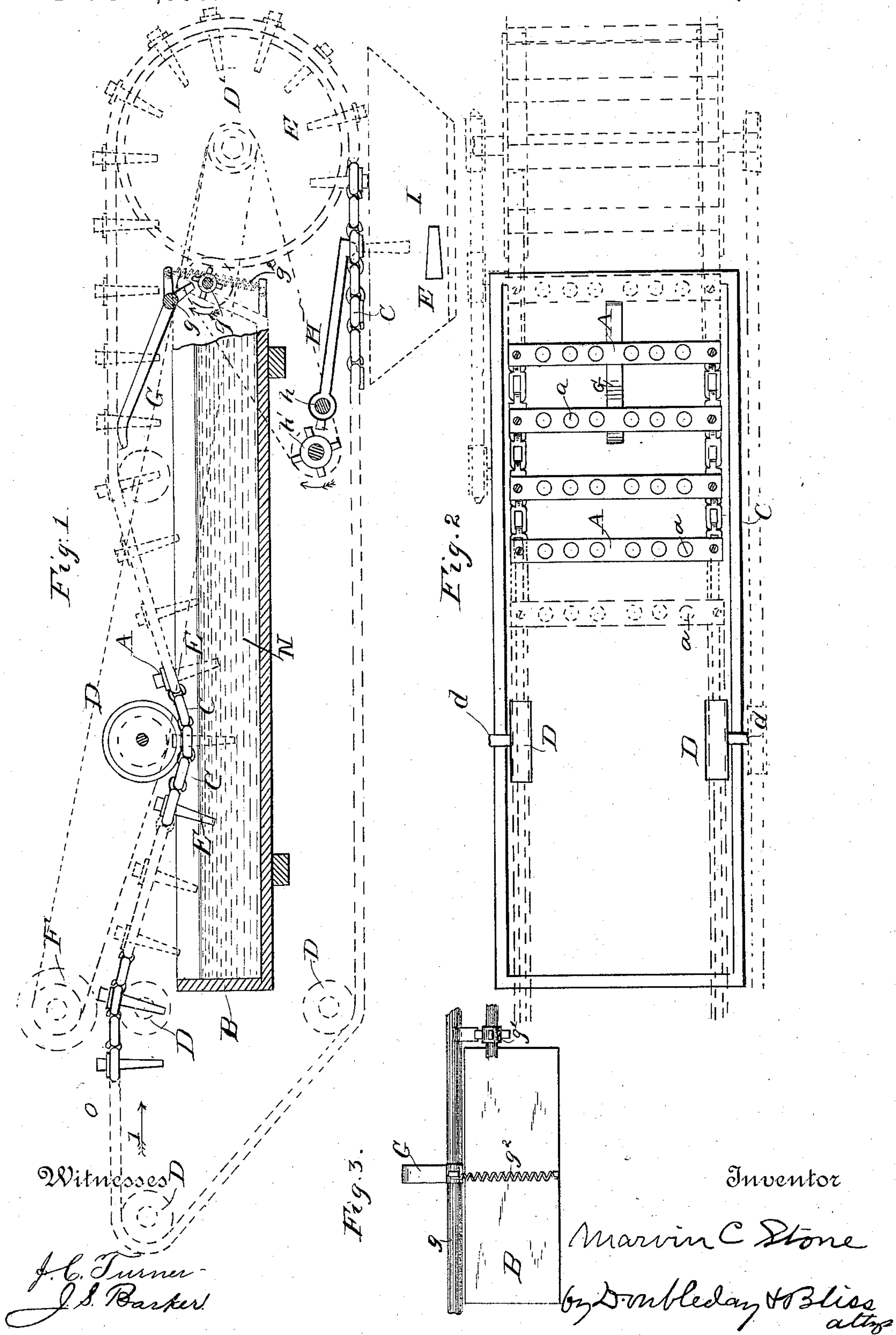
2 Sheets—Sheet 1.

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HOLDER AND GAGE FOR PAPER CONES WHILE WATERPROOFING THEM.

No. 371,990.

Patented Oct. 25, 1887.



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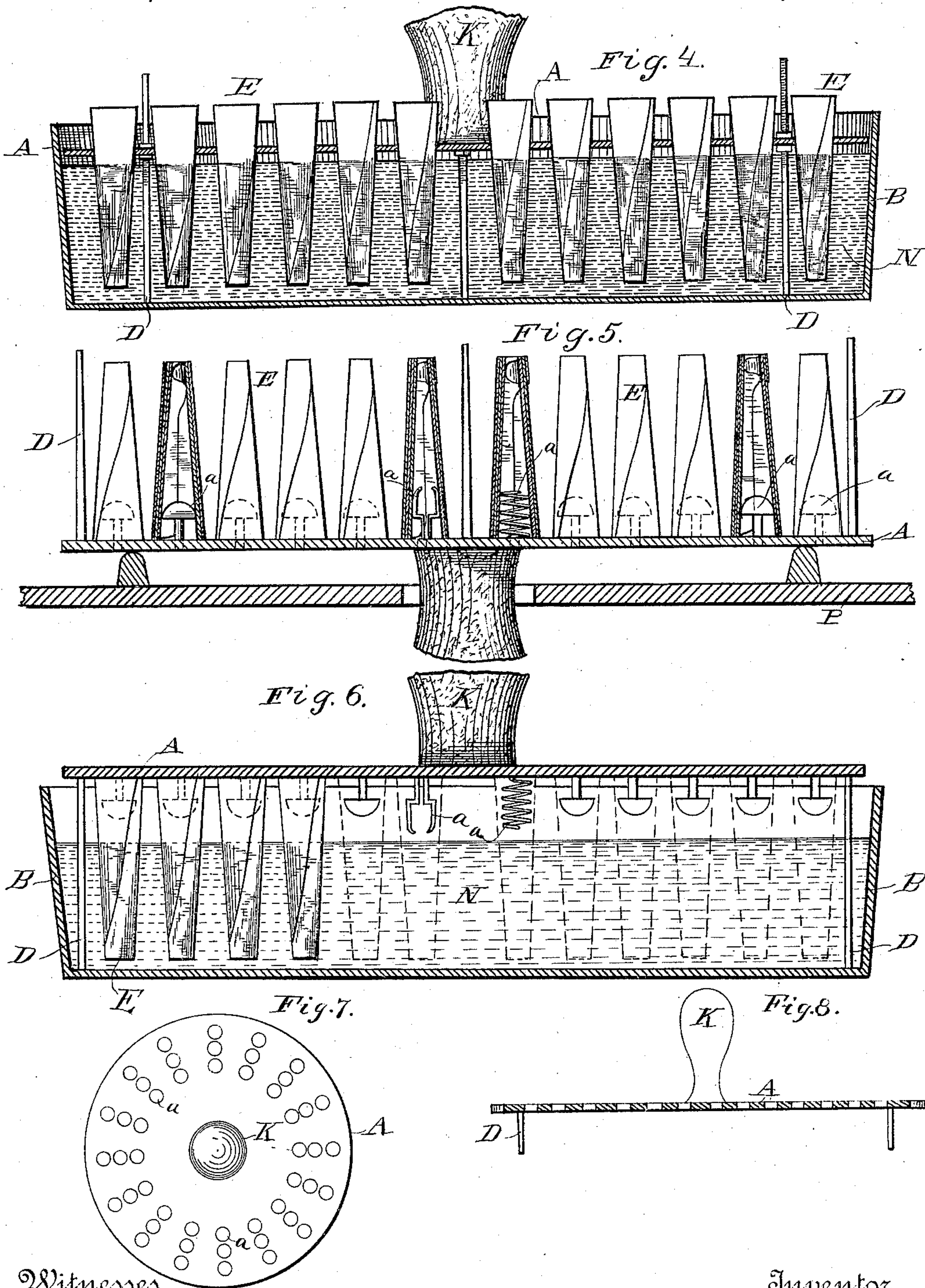
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Witnesses
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UNITED STATES PATENT OFFICE.

MARVIN C. STONE, OF WASHINGTON, DISTRICT OF COLUMBIA.

HOLDER AND GAGE FOR PAPER CONES WHILE WATERPROOFING THEM.

SPECIFICATION forming part of Letters Patent No. 371,990, dated October 25, 1887.

Application filed May 20, 1886. Serial No. 202,829. (No model.)

To all whom it may concern:

Be it known that I, MARVIN C. STONE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Holders and Gages for Paper Cones while Waterproofing Them, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to devices and a method by which I can rapidly subject paper cones to the action of a material for hardening or otherwise affecting them, and by which I can gage them accurately, so as to have them all treated alike, and can effectually remove from them the surplus material, so as to have their surfaces, both inside and out, smooth and finished.

Figure 1 is a side view of a mechanism adapted to attain the objects at which I aim. Fig. 2 is a top view of a part thereof. Fig. 3 shows some of the details in end view. Figs. 4, 5, 6, 7, and 8 show modified forms of the devices, they being especially adapted for hand operation.

In the drawings, A represents a holder adapted to receive and support the paper cones E. The latter are conical or frusto-conical in shape, they being made by wrapping paper in folds or layers, as shown in section in Fig. 5; but these features of their construction have been made the subject-matter of other applications, and do not relate, essentially, to the present one.

In the devices shown in Fig. 1 the holders A are provided with apertures *a*, of such diameter that the cones E can pass through them to a limited distance only, the upper ends of the cones engaging with the walls or edges of the apertures *a*, which edges, in this construction, act as supports for them. The holders A are here shown as being supported by chains C, which travel on wheels D D', whereby the chains and the holders A are propelled, and are guided down toward and up and away from a vat or vessel, B, wherein is placed the paraffine or other materials, to the action of which the cones are to be subjected. This material or composition of materials is heated by any

suitable means, so as to be kept in a liquid condition.

The paper cones E are inserted at O, Fig. 1, into the apertures *a*, the holders A traveling in the direction of arrow 1. The cones can be pressed down by hand, or a presser-roller, as at F, can be applied, so as to insure that all of the cones shall be held uniformly. It will be seen that the parts which carry and guide them are so constructed and related that the cones are all gaged alike and pass down into the material at N to a uniform distance, so that after the treatment is completed the cones are all similar in appearance. This is in contradistinction to the method ordinarily employed in treating such articles, in which they are entirely immersed or submerged in the material in the vat. An important matter in treating these paper cones is the removing of the unnecessary wax or paraffine which adheres to them as they leave the vat. Under some conditions the lower ends of some of the cones will be entirely filled or considerably obstructed, and in very many cases lumps or globules are left adhering to the surface.

One of the important features of this invention is to provide a mode of rapidly removing the surplus material, so that all of the cones shall be smoothly and uniformly coated and shall be free from obstruction in the interior. This is done by imparting to the holders A, successively, sharp blows or jerks while the material is still more or less liquid and before it hardens.

G represents a lever or shaker adapted to impart blows or quick upward movements to the holders A as they rise out of the vat. It can be operated in any suitable way—as, for instance, by a cam-wheel, *g'*, arranged to rock the lever-shaft *g*, and a spring, *g''*, which returns the lever. After being thus cleaned and made smooth by this jerking or shaking action the cones E are retained in the holders A a sufficient time to allow them to cool, whereupon the holders are inverted and the cones are then knocked out, blows or shakes being imparted, if necessary. At H there is a knocker on shaft *h*, intermittently raised by a cam-wheel, *h'*, the knocker being adapted

to hit each of the holders A as it moves along, it thereby dislodging the cones E into a receptacle at I.

In Fig. 4 I have shown, in connection with a vat, B, a holder and gage, A, adapted to be operated by hand, but in such way as to permit the following of the same method as that above described. The holder here is a circular plate carrying a handle, K, by which it can be easily manipulated. Legs or supports D can be combined with the holder, and they can be so constructed as to have it adjustable, as shown.

In operation the holder is first supported upon a table and is charged with the cones, and it is afterward inserted into the vat, as shown in Fig. 4. After the cones have been immersed a proper time the holder or gage is withdrawn, and is subjected to blows or jerks to attain the ends above set forth.

It is not necessary to use perforations in the holder A in order to properly gage the cones, as they may be secured to it in any efficient manner. Thus in Fig. 5 both pins and springs are shown, which I use interchangeably under some circumstances for this purpose. When employed, the holder A is first inverted upon a table, P, as in Fig. 5, and is charged with cones E, after which it is turned over and inserted into the vat, as in Fig. 6, the pins or springs serving to hold and gage the cones when in the inverted position.

In all of the forms of the holder or gage shown it will be seen that it consists of a body-part, A, having means for supporting the cones separately from each other in similar positions relatively to the holder, so that they can be uniformly immersed over similar distances.

I am aware of Patents Nos. 148,409 and 229,366, for devices employed in electroplating and galvanizing and do not claim anything therein disclosed; but my invention differs radically from anything therein found, both in regard to its mode of operation and the results attained in the carrying of it out. In both those earlier inventions the articles to be treated are to be coated with metal or plated throughout their entire extent of surface. Consequently the depth of their immersion in the liquid is immaterial, except that it is essential in order to operate successfully, that the screws or bolts should be entirely covered by the material. On the contrary, it is indispensable in paraffining my paper cones that some provision shall exist by which a portion of each cone shall be kept from contact with the paraffine; that, in fact, only a portion of each cone, and that the smaller end, shall be inserted in the liquid. It is further very important, in the working of my invention, that some provision shall be made whereby the operator can quickly and accurately gage the depth of immersion of each and every cone. This result I attain by so relating the sizes of the holes or of the pins or springs to the sizes and forms of the paper cones and to the gag-

ing devices that the required depth of immersion shall be secured with great uniformity. Under some circumstances, however, I may dispense with the gages. For instance, when using the construction shown in Figs. 1, 4, 7, and 8, the carriers or holders may be so manipulated that their lower surfaces shall be moved into close proximity through the upper surface of the melted paraffine, the depth to which the cones are immersed being governed in such case by the sizes of the holes in the carrier, which will determine the depth or distance to which the cones will project below its lower surface into the liquid. Another important difference between my invention and those which have preceded it is this: In none of the prior ones was there any provision for such frictional contact between the carriers or holders and the articles to be plated that they could be shaken or jarred somewhat violently after immersion without separation, it being apparent from a casual examination of those patents that the screws, bolts, or other articles were suspended loosely by their heads, whereas in working my invention each cone is held firmly in position by reason of the engagement of its tapering sides with either the springs, the pins, or the walls of the holes of the carrier or holder, the points of engagement being intermediate of the ends of the cones.

What I claim is—

1. The combination, with the cones E, of a holder engaging with the tapering sides of the cones at points intermediate of their ends and adapted to support said cones by frictional contact, substantially as set forth.

2. The combination, with the cones E E, of a holder provided with openings adapted to engage with the outer surfaces of the cones at points intermediate of their ends, whereby the cones are supported by frictional contact with the holder, their ends projecting on opposite sides thereof, substantially as set forth.

3. The herein-described improvement in the art of paraffining paper cones, it consisting in attaching a number of the cones separately from each other to a common holder, securing them in place by means of a frictional contact of the holder against the walls of the cones, arranging the smaller ends of the cones in the same plane, then inserting them all simultaneously into the paraffine, whereby the extent of paraffining can be gaged while the holder is supported in a horizontal position, the larger ends being withheld from contact with the material, substantially as set forth.

4. The herein-described improvement in the art of paraffining paper cones, it consisting in attaching the cones separately from each other to a holder, securing each cone in place by means of a frictional contact of the holder against the wall of the cone at points distant from the ends of the cone, then inserting the small end of the cone into the paraffine and causing the latter to rise relatively both inside and outside of the said small end to a predetermined point, the larger ends being with-

held from contact with the material, substantially as set forth.

5 5. A holder or gage for supporting paper cones while being subjected to a paraffine or similar treatment, it having a body part, A, a handle, K, and legs or supports D, adapted to regulate the distance from the paraffine to which the part A can come, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

MARVIN C. STONE.

Witnesses:

M. A. BALLINGER,
H. H. BLISS.