

C. Neumann.
Hoop Skirt Mach.

N^o 25,163.

Patented Aug. 16. 1859.

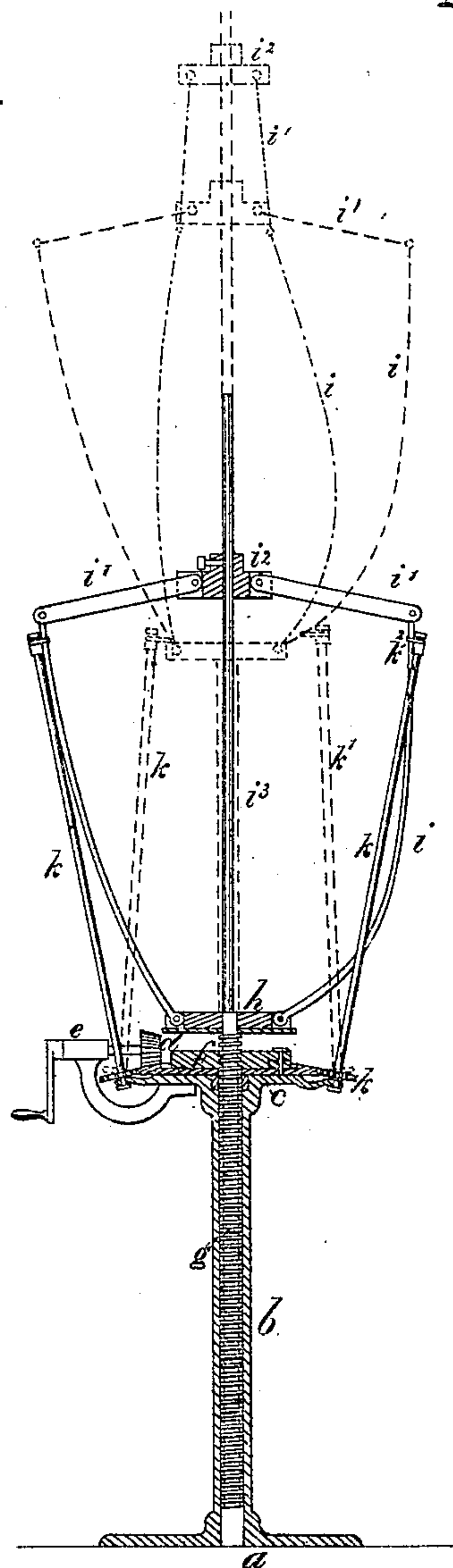


Fig. 1.

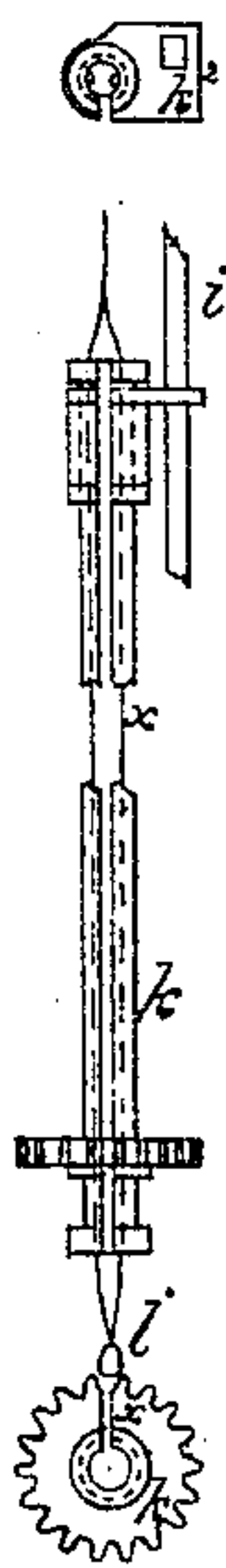


Fig. 3.

Fig. 2.

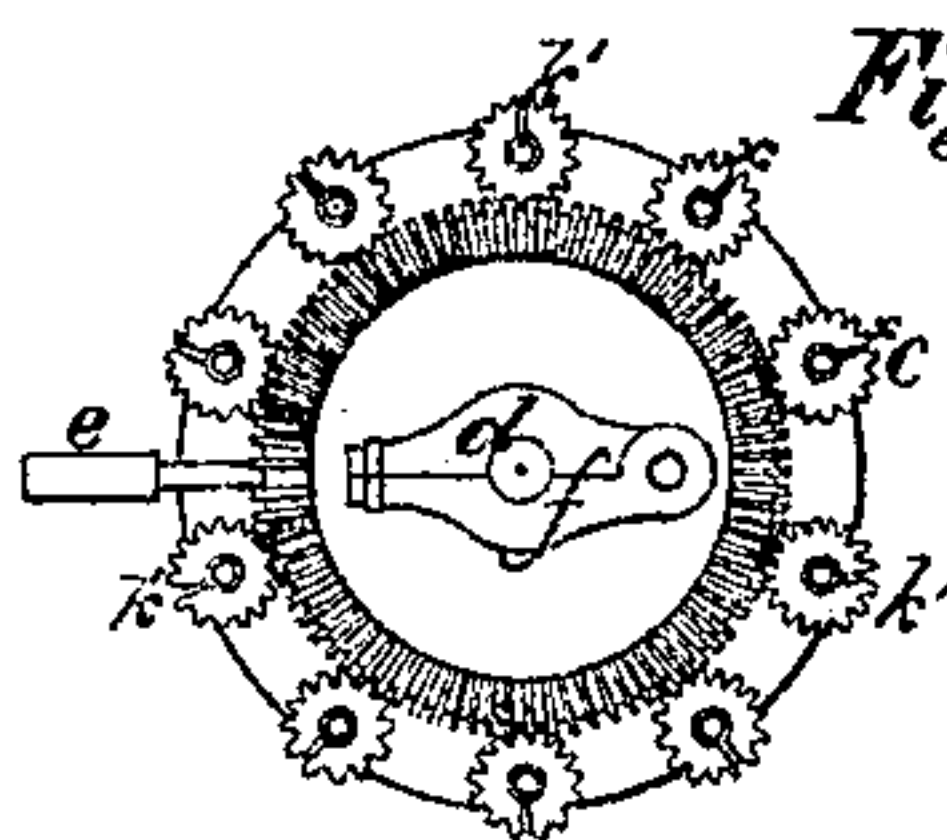
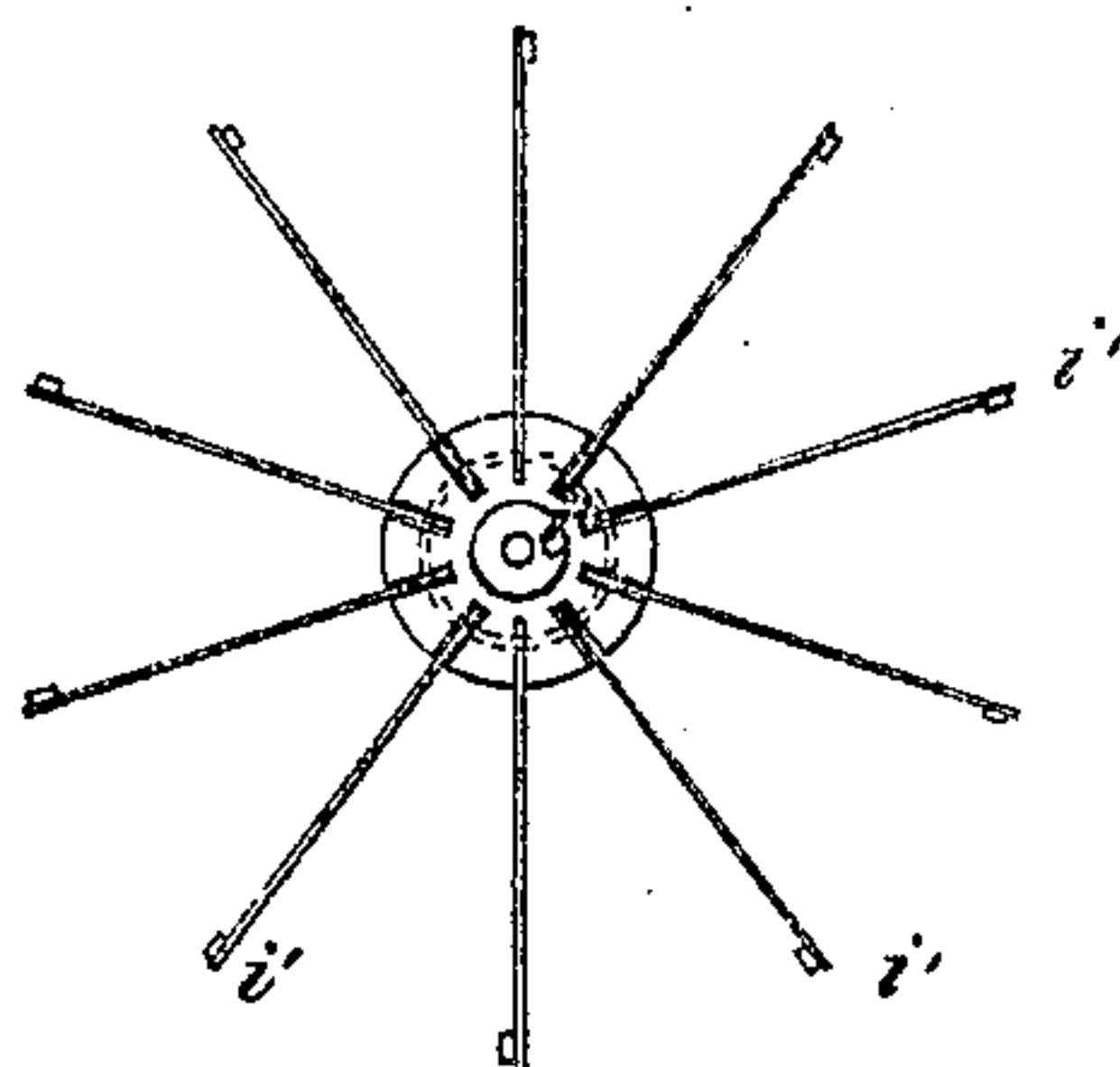


Fig. 4.

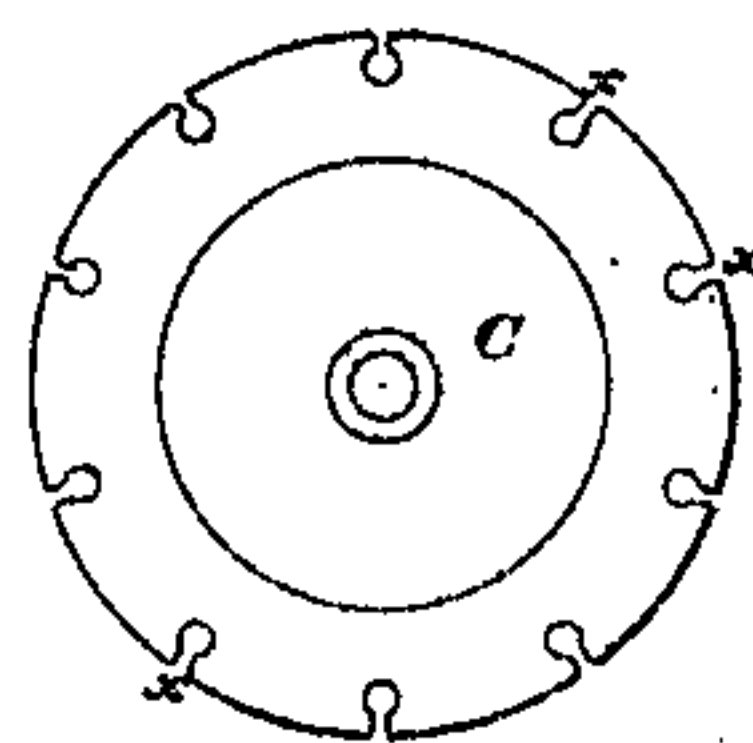


Fig. 5.

Witnesses,
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UNITED STATES PATENT OFFICE.

CAESAR NEUMANN, OF NEW YORK, N. Y., ASSIGNOR TO ABRAHAM PRINCE, OF BOSTON, MASSACHUSETTS.

MACHINE FOR MAKING HOOPED SKIRTS.

Specification forming part of Letters Patent No. 25,163, dated August 16, 1859; Reissued March 19, 1861, No. 1,155.

To all whom it may concern:

Be it known that I, CAESAR NEUMANN, of the city, county, and State of New York, have invented a new and useful Machine for
5 Manufacturing Hoop-Skirts; and I do hereby declare and ascertain my said invention as follows, referring to the accompanying drawing, in which—

Figure 1, is a vertical section; Fig. 2, is
10 radial rods i' . Fig. 3, section of shaft k , enlarged, Fig. 4 plan of gearing, Fig. 5 plan of plate c .

My invention is for manufacturing the skirt by machinery; the mode that I have
15 devised for constructing the skirt enabling me to employ machinery therein.

A variety of modifications of frame work and other parts of the machine and its mode of operation may be varied, as will be evi-
20 dent in perusing the description, without departing from the principal features required; but I will describe and illustrate the form I have considered best, which will clearly show the type of the invention.

I construct a stand with a base a , and single upright b , for the purpose of conveniently working all around the skirt. The upright standard b , is a hollow tube, and it bears on its top a circular flat plate c , above
30 which and close to the said plate c , there is a bevel wheel d , that is turned by a pinion e , driven by a hand-crank or otherwise. The wheel d , is concentric with the plate c , and its hub is hollow, as clearly seen in Fig.
35 1; the exterior being projected downward into a recess in plate c , by which it is steadied while turning. Upon this bevel wheel d , I attach a divided nut f , that is made to embrace and fit a screw g , which
40 passes perpendicularly down through the center of the bevel wheel and hollow standard b . By turning this bevel wheel and nut, the screw is raised for purposes to be hereafter described.

On the top of the screw there is a small circular plate h into the edges of which are jointed a sufficient number of curved rods i , as will hereafter appear. These rods are curved to the outline of the skirt to be made,
50 and their upper ends are jointed to radial rods i' , that extend out from a hub i^2 , to which they are also jointed as clearly appears in Fig. 1 and Fig. 2. The hub fits to

a perpendicular rod i^3 , projecting up from plate h , when fixed as in Fig. 1. The curved
5 rods i , and radial arms i' determine the size of the skirt to be made—which may be larger or smaller, by the position fixed for hub i^2 .

Around the edge of the plate c , affixed to
6 the main standard b , there are the lower bearings of a series of rods or long shafts k , as many in number as there are curved rods i . These shafts may be hollow as shown in the enlarged sectional Fig. 3, or they may
6 be solid rods. At the lower end of each, there is a pinion k' , affixed, which gears into spur gearing cut on the edge of bevel wheel d , by which means the whole series of rods are revolved. This is shown in plan in Fig. 7
4. (It is obvious that a band, instead of gearing, could be used, but is not so certain or exact.)

When the screw is down in the position seen in Fig. 1, the shafts k , extend nearly to
7 the top of the curved guide rods i , and at their upper ends there is a little guide plate k^2 , (seen in plan at the top of Fig. 3). This has a hole through it that fits the guide rod i , that is made to slide up through it by the
8 elevating screw g . This guide plate serves as a bearing for the upper end of the shaft k , to turn in, and guides it to the shape of the skirt to be made.

At or near the junction of each of the
8 curved guides i with the radial rods i' , there is a hook or its equivalent, in which the loop or blight of a cord is caught and it is then brought into the center of rotation of the shaft k , there being a slot through its side
9 from top to bottom for the purpose, and also through its bearings, as seen at $x x x$ in Figs. 3, 4, 5, at the bottom. This cord which is double its whole length, is tied together and a small weight l is tied to it as seen in
9 Fig. 3, where the red line represents the cord; at the top the cord is separated either by two hoops, by a center piece on each side of which the two strands lie, as seen in the figure, or by any other convenient means. 1

The operation of manufacturing a skirt upon this machine is as follows: A double cord is attached to each guide-rod-hook and passed down along each of shafts k , there being as many cords as shafts, or as the
1 manufacturer desires to put in the skirt, and

instead of one double cord, two or more may be inserted; the number of guide rods will determine their distance apart the suspending cords are to be. When the cords are inserted and the parts in the position seen in Fig. 1 a hoop is inserted into the bight of all the cords running horizontally entirely around, the diameter of the skirt being determined by the spread of the guide rods i , by the extension rods i' , so that any size may be made on the same machine. The pinion e and wheel d , being then turned, cause the shafts k , and their pinions to revolve, and thus twist the two strands of the cord together below the hoop and thus inclose and fasten it at the same time. The nut turns around the screw g , and elevates the guide rods, &c. carrying up the hoop with it. When a sufficient length of twist is made for the distance between the hoops, a second hoop is inserted, and the twisting and elevation proceed until all the hoops are inserted. For a full sized hoop skirt this would bring the form up to the position shown by red line in Fig. 1, the shafts at the same time being drawn inward, to the smallest size of the skirt: (Also indicated by red lines.) The hub i^2 is then released from the center, rod i^3 , slid up and the guide-rods collapsed, (as indicated by blue lines) and the skirt is removed. The divided nut f is open and the screw and guide rods with their appendages fall to the position as at the

commencement, ready to make a second skirt.

In this machine the skirt is made upside down, but the guides may be reversed. So instead of hollow shafts i , they may be made solid; and so instead of the shafts, a plate with radial slots in it may contain the twisting apparatus through which the curved guides are made to rise. But these and numerous other changes are but mere incidental changes to suit the requirements of the workers; and are but mechanical varieties in no way changing the principles of the machine.

Having thus fully described my machine for making hoop skirts, what I claim therein as new and for which I desire to secure Letters Patent, is—

1. The combination of a series of twisting apparatus with guide rods for the purpose of forming a hoop skirt substantially in the manner and for the purposes set forth.

2. I also claim in combination with the twisting apparatus, the elevating screw and its appendages, and the mode of operating the same, as described.

3. I also claim collapsing the guides to form different sized skirts, and to deliver the same as specified.

CAESAR NEUMANN.

Witnesses:

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