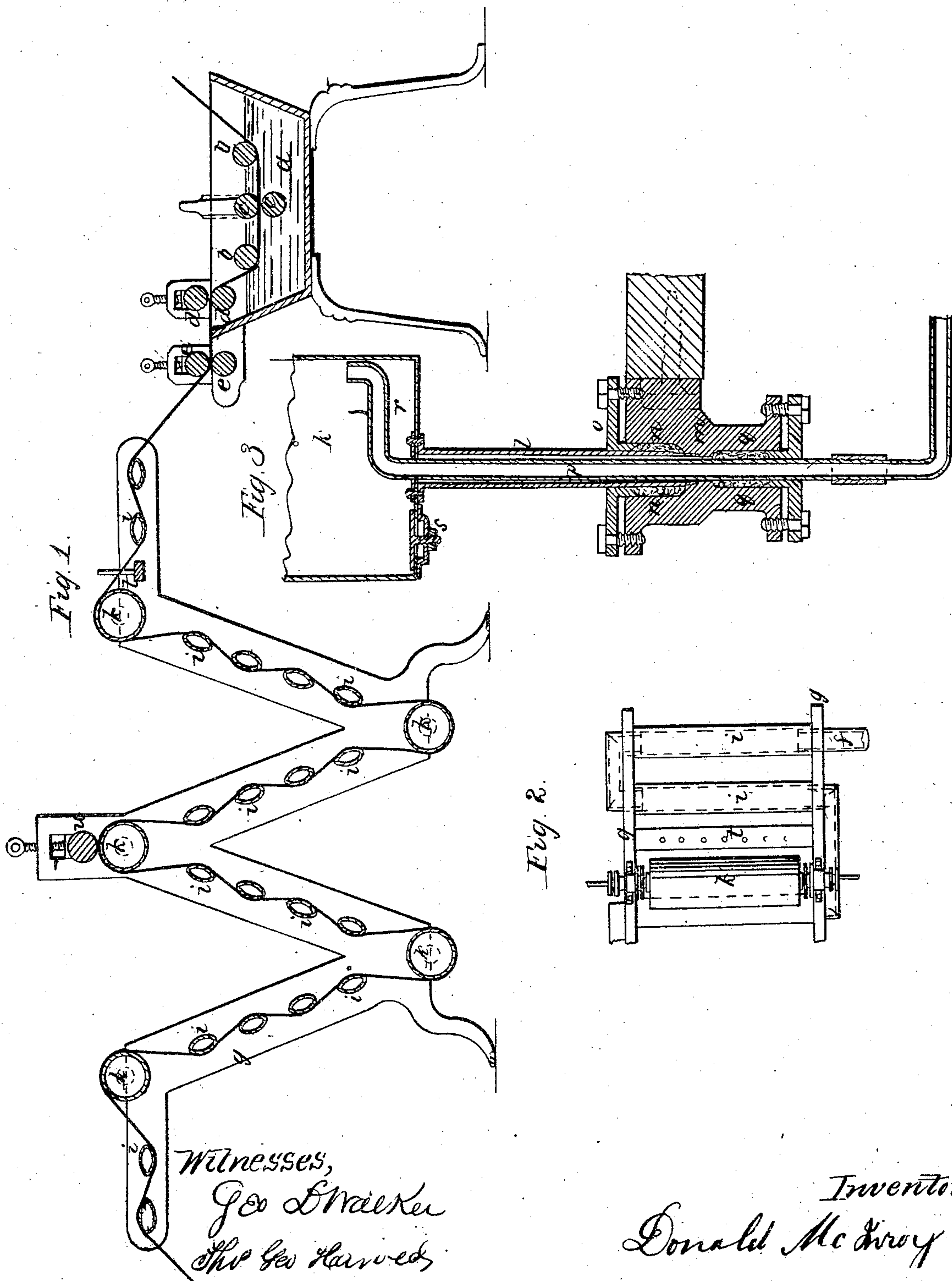


# D. Mc Inroy Drying Skirt Wire, &c.

N<sup>o</sup> 67,328.

Patented Jul. 30, 1867.



Witnesses,  
Geo L Walker  
Thos Geo Harwood

Inventor  
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# United States Patent Office.

DONALD McINROY, OF NEW YORK, N. Y.

Letters Patent No. 67,328, dated July 30, 1867; antedated July 20, 1867.

## IMPROVEMENT IN MACHINE FOR DRYING SIZED OR DYED CORDS, SKIRT-WIRE, WEBBING, &c.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, DONALD McINROY, of the city and State of New York, have invented and made a certain new and useful Improvement in Means for Drying Skirt-Wire, Cords, Webbing, and similar articles; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a longitudinal section of my improved apparatus.

Figure 2 is a plan of a portion of the apparatus, and

Figure 3 is a section longitudinally of the journal of the hollow drying-cylinder in larger size.

Similar marks of reference denote the same parts.

My invention has for its object the drying of cords, webbing, skirt-wire or similar material after it has been sized or dyed; and my invention consists in a series of parallel pipes arranged in slightly inclined ranges, so that the material to be dried passes up and down, being interlaced between the pipes so as to make the apparatus compact, and at the same time present a large amount of heating surface for the fabric to be drawn over; and I employ hollow heated cylinders, around which the fabric passes between one of the ranges of heating pipes and the next, so as to cause the article to be dried to remain in contact with and revolve the drying-cylinder, and at the same time the friction of the fabric is lessened as it passes through the apparatus.

In the drawing, *a* is a vat containing sizing or dye; *b b* are guide-rollers, and *c c* compressing-rollers, to cause the penetration of the sizing or dye into the fabric; *d d* and *e e* are pairs of squeezing-rollers kept towards each other by springs or similar means to press out the surplus moisture from the fabric. The drying-apparatus is composed of a series of pipes or tubes, *i i*, each of which is formed of a flattened or other suitable shape, and smoothed upon the surface with which the material to be dried comes in contact, and these drying-tubes *i i* are connected, as shown in fig. 2, so as to be heated by steam admitted by the pipe or pipes as at *f*, and the water of condensation is to be drawn off in any well-known manner from the lowest parts. The ranges of the drying pipes are to be placed at an inclination, and I have shown them as supported between W-shaped frames *g g*. If the pipes *i i* stand in the same plane, the material to be dried passing alternately on opposite sides, as shown, will have the amount of friction and pressure on each surface, as it is drawn along, that results from the angle made by the fabric passing alternately above and below the said pipes, but if they are in two planes the fabric may be passed almost straight through between the pipes, only touching them slightly on opposite sides. These drying pipes present a large extent of heating surface for the fabric to come into contact with, and at the same time the action is similar to a smoothing-iron to give a gloss to the surface, and evaporation progresses much more rapidly when passing into and out of contact than would be the case if the vapors were confined within the fabric by continued contact with a heated surface. At the angles where the material changes direction in passing from one range of pipes *i* to the next, I employ hollow cylinders *k k*, each one of which is constructed as seen in fig. 3, so as to be heated by steam. The cylinders *k* are each made with a hollow journal at each end, as seen at *l*, and these revolve in boxes *m*, where they are both lubricated and packed by packing introduced at *n*, and kept tight by the follower *o*. A pipe, *p*, is introduced through the box *m* and shaft or journal *l*, and is made tight by gland or packing at *q*. The pipe *p*, at one end of the cylinder *k*, is made with a bend downwards; at *r*, to receive and convey away the water of condensation and keep the cylinder free, and the pipe *p* at the other end simply passes sufficiently into the hollow journal *l* to supply the steam. I provide a hand-hole, *s*, and cover in one end of each of the hollow drying-cylinders *k*, so as to give access to the inside of the cylinder in case of any derangement of the steam or water pipes. The cords, skirt-wire, or other material may be guided in its entrance to the machine by the rack *t*; and a roller, *u*, kept down by an adjustable spring pressure, may be employed at the central cylinder *k* to aid in pressing and consolidating the fabric. In this drying-apparatus several cords, skirt-wires, or similar articles can be drawn through the machine at the same time, and come out dried, smoothed, and finished, and this is done with great rapidity, and the material is free to contract as it dries, whereas in those machines where the material is wound back and forth over cylinders or rollers the contraction in drying sometimes causes a strain that is so great as to injure the machinery.

What I claim, and desire to secure by Letters Patent, is—

1. A series of steam-drying pipes, *i i*, arranged in ranges in the manner specified, in combination with cylinders *k* placed between the ranges of pipes, as and for the purposes set forth.

2. I claim the hand-hole and cover *s*, in combination with the cylinder *k*, journal-box *m*, packings *n* and *q*, and pipe *p*, as and for the purposes set forth.

In witness whereof I have hereunto set my signature this twenty-sixth day of July, A. D. 1866.

DONALD McINROY.

Witnesses: