

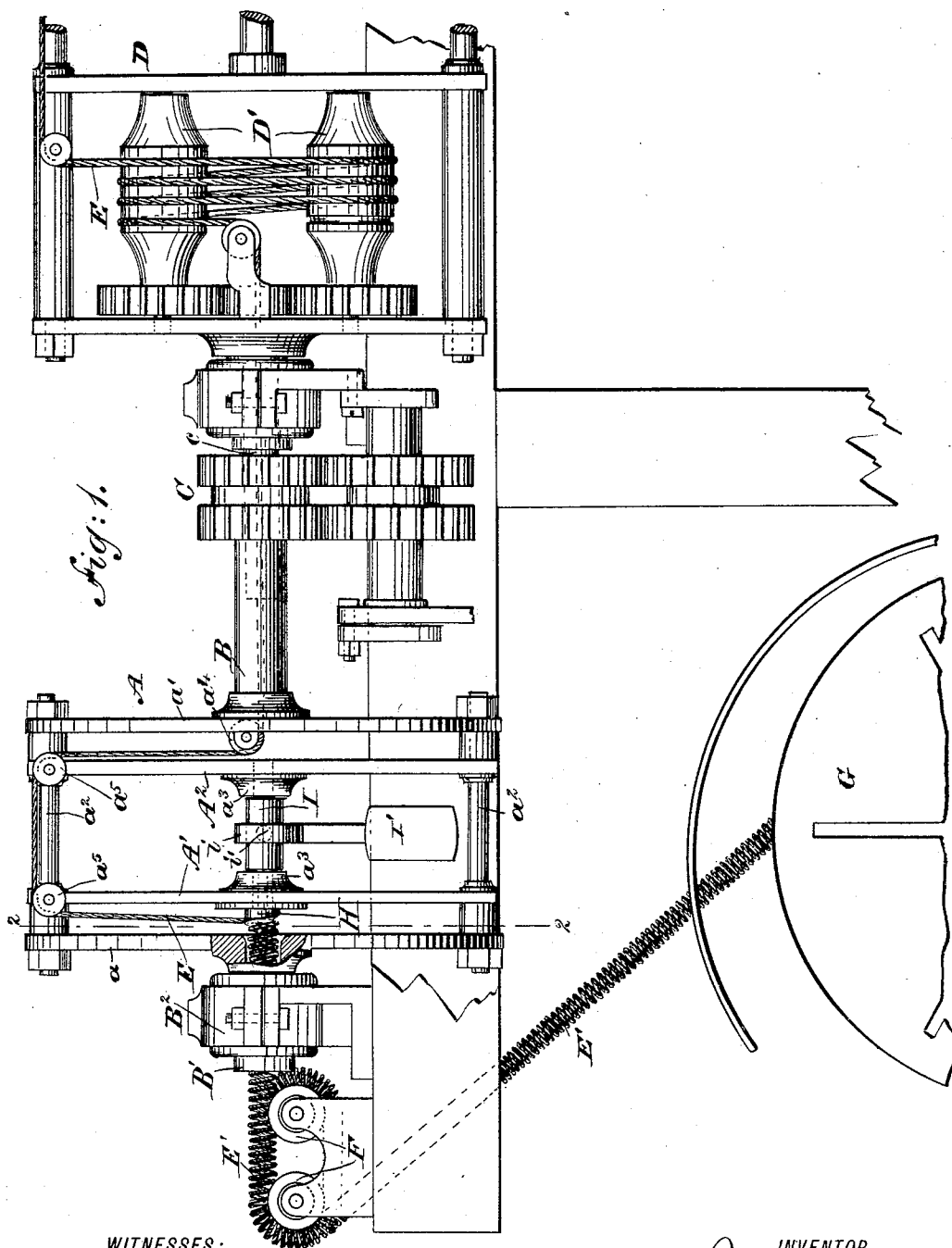
(No Model.)

2 Sheets—Sheet 1.

J. A. MURPHY.
HAIR CURLING MACHINE.

No. 480,605.

Patented Aug. 9, 1892.



WITNESSES:

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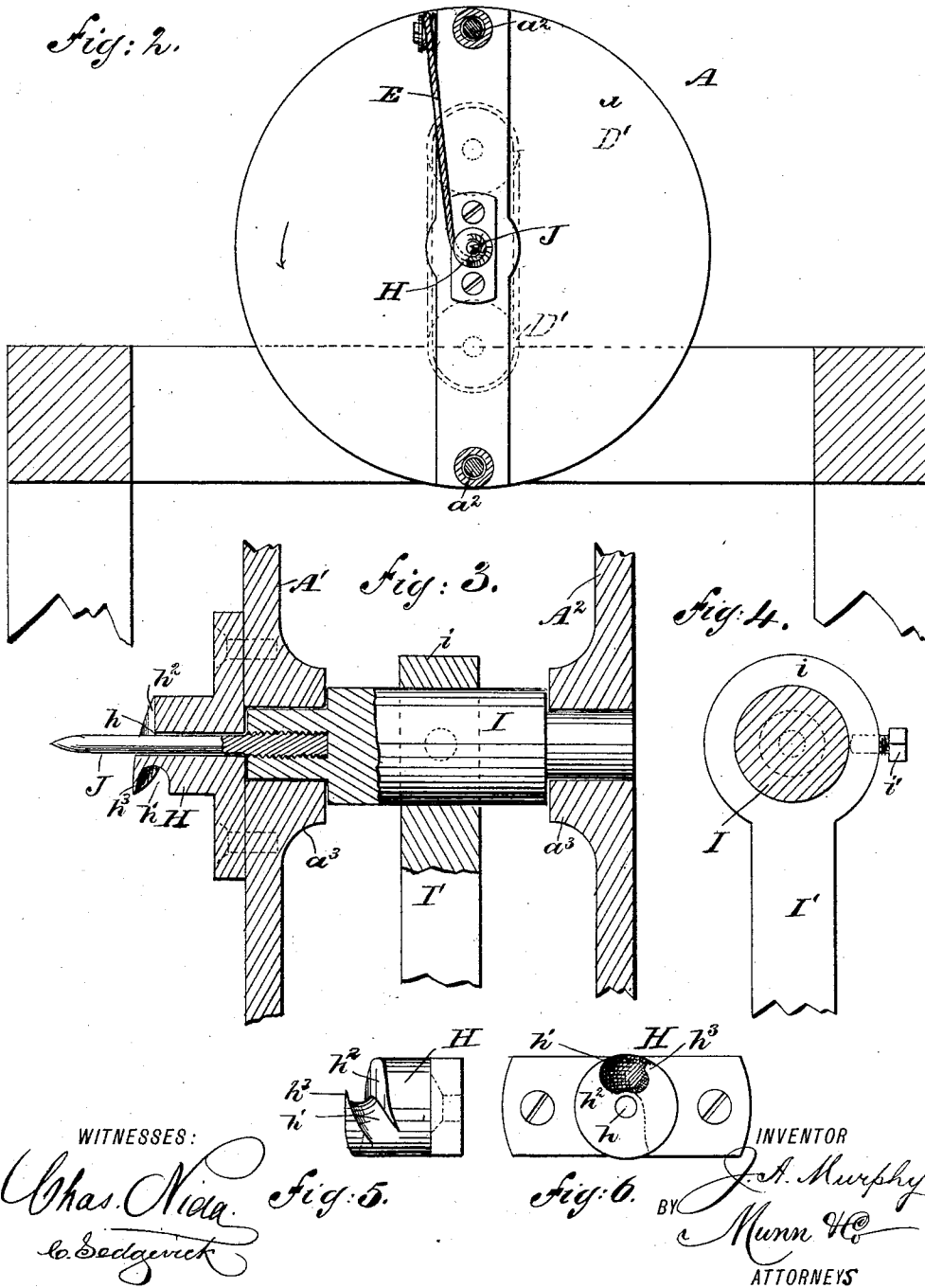
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UNITED STATES PATENT OFFICE.

JUNIUS A. MURPHY, OF NEW ORLEANS, LOUISIANA.

HAIR-CURLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,605, dated August 9, 1892.

Application filed May 14, 1891. Serial No. 392,731. (No model.)

To all whom it may concern:

Be it known that I, JUNIUS A. MURPHY, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and
5 Improved Hair-Curling Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide an efficient means for mechanically curling or
10 kinking hair yarn in the production of curled hair.

The invention consists in the novel construction and combination of parts, as hereinafter described, and defined in the claims.

15 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved
20 hair-curling machine, showing a portion, also, of the flier of a spinning-machine. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a mainly sectional longitudinal elevation of the curling-head. Fig. 4 is a cross-
25 section through the weighted spindle-carrying arbor of the curling-head. Fig. 5 is a side elevation of the curling-head, the spindle being omitted; and Fig. 6 is a front view thereof.

In constructing a machine embodying my
30 invention I provide a flier A, consisting of end disks a a' , united by cross-bars a^2 at the periphery, the flier being connected with suitable driving mechanism. In the arrangement shown one disk a' is connected through the
35 medium of a stud B with the shaft of one of the train of gear-wheels C of the flier D of a spinning-machine. At the opposite side the flier A is provided with a stud-journal B', which has a bearing in the pillow-block B².

40 Beyond the stud-journal B' suitable mechanism is provided for reeling and maintaining tension on the curled yarn E' after leaving the flier A. The tension and reeling mechanism shown comprise the capstan F,
45 around the drums of which the curled yarn is wound, and a reel G, to which the said yarn passes from said capstan.

In the flier A diametrical bars A' A² are provided, connected at their ends to the bars
50 a^2 , that connect the disks a a' , and to the outer face of the bar A' the curling-head

proper H is secured. On the inner faces of the bars A' A² escutcheons a^3 are formed or secured, and in said escutcheons are loosely fitted the ends of the arbor I, on which is a
55 collar i , that is formed on a weighted arm I'. A set-screw i' serves to bind the collar i to the arbor I, whereby when the flier A is rotated the arbor I will be held stationary, permitting
60 said flier to revolve therearound. A spindle J is formed on or is secured to the end of the arbor I and extends through the axial bore h of the curling-head H, whereby the said head will revolve around the said spindle in response to the rotary movement of the flier A.
65 The front of the curling-head H is formed with a groove h' , which extends spirally a short distance inward from the face h^2 . Such face is thereby made in the form of a spiral cam, which at the outer end terminates in the
70 point h^3 , which acts as a pusher to successively push the coils of the spirally-curved yarn from the spindle J, as next explained. The twisted yarn E is received on the capstan D'
75 of the flier D from a bobbin arranged in connection with such flier in the usual manner. From the capstan D' the yarn passes through the shaft c of the gears C, through the stud B and disk a' , and is guided over the idlers a^4 a^5 to the spiral groove h' of the curling-head H.
80 As the yarn passes from the groove h' it is coiled or curled around the spindle J by reason of the rotation of the curling-head around such spindle, and the outer terminal or point
85 h^3 of the cam-face h^2 pushes the curled yarn off the spindle. The yarn E' thus curled passes through the journal B' of the flier A and thence to capstan F and reel G. The yarn is thus curled in an expeditious and efficient
90 manner instead of being curled mainly by hand, as now generally practiced.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a hair-curling machine, the axially-bored cylindrical curling-head H, having its front end formed into a spiral face h^2 and having a cast-off point h^3 at the forward terminal of said spiral face, and a spiral groove h' between the said point h^3 and the spiral face h^2 ,
95 substantially as set forth.

2. The combination, with a flier, of an ax-

ially-bored curling-head mounted centrally within the flier to rotate therewith and terminating in a spiral cam on its outer extremity or face having a point h^3 , and a stationary spindle also supported centrally within the flier and projecting through the curling-head, and the guide-pulleys or idlers mounted on the flier to guide the material to the curling-head, substantially as set forth.

10 3. The combination, with the flier A, having tubular journals B B', of the parallel cross-bars A' A², mounted in the flier and having bearings a^3 a^3 in line with the flier-journals, an arbor mounted in the bearings

15 a^3 , held against rotation and having a spindle J, projecting into the journal B', the ax-

ially-bored curling-head H on the front face of the bar A', concentric with the spindle and terminating in a spiral cam having a point h^3 , and the guide-pulleys a^4 a^5 , mounted on 20 the flier, substantially as set forth.

4. In a machine for curling hair yarn, a flier, an axially-bored curling-head carried thereby and formed with a spiral groove which terminates in a cam-face, and a spin- 25 dle fitting and projecting from the bore of the curling-head, the arbor of the spindle being weighted, substantially as described.

JUNIUS A. MURPHY.

Witnesses:

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