

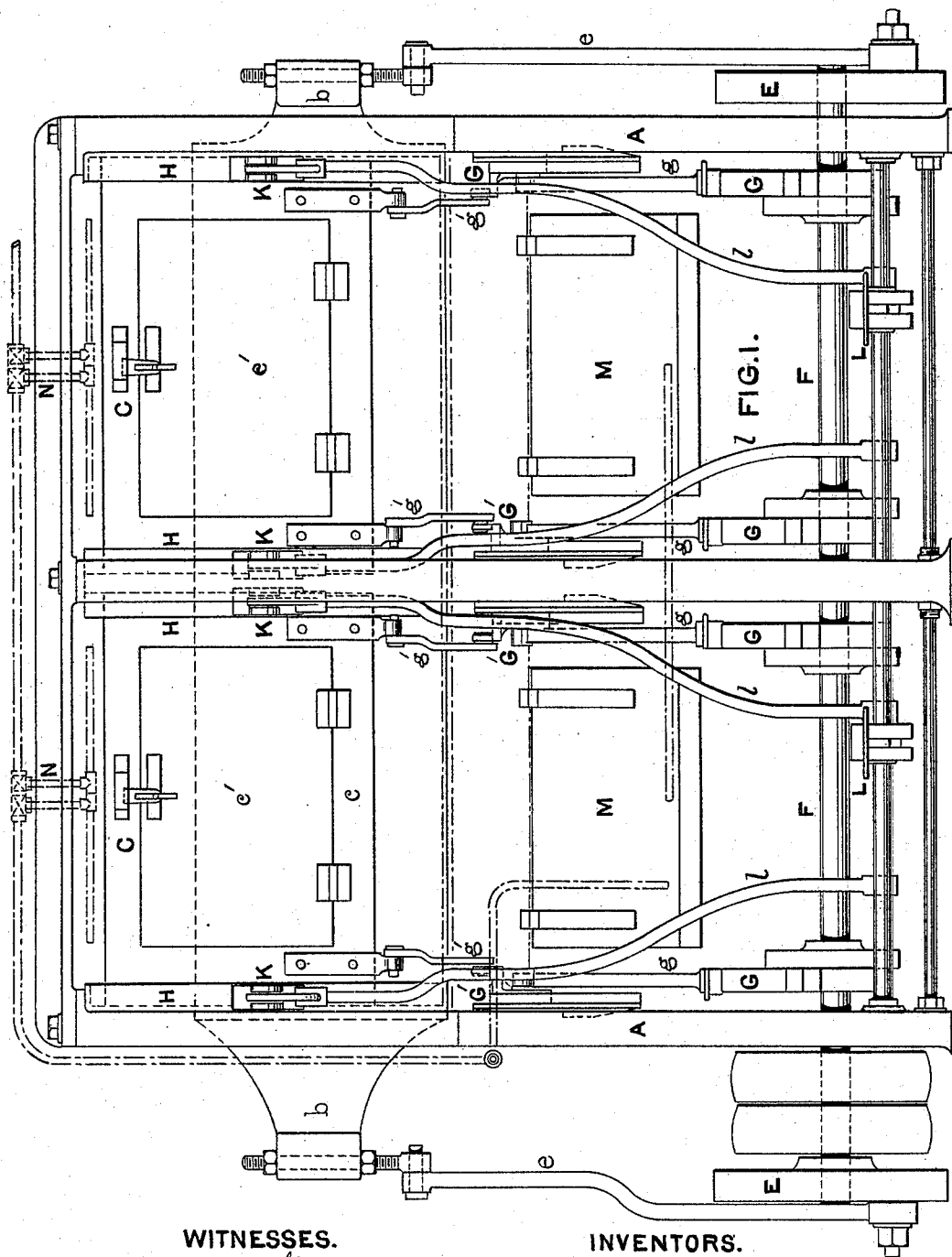
(No Model.)

2 Sheets—Sheet 1.

R. STALKER & G. BATY.
APPARATUS FOR MANUFACTURING FELT HATS.

No. 585,796.

Patented July 6, 1897.



WITNESSES.

Chas. Wendell.
Harry Barnfather.

INVENTORS.

Robert Stalker
George Baty
By Wm. H. Thompson Co.

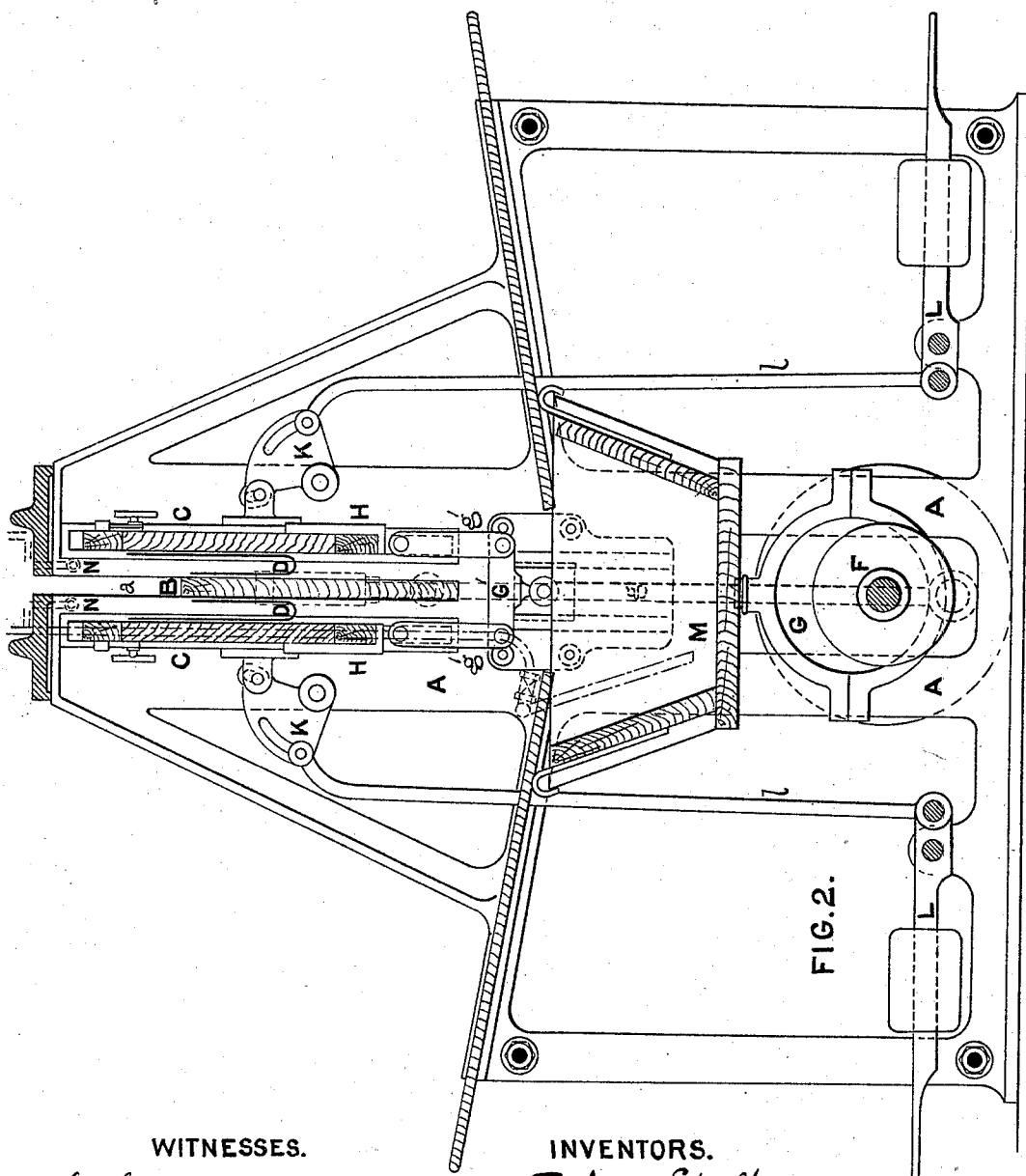
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UNITED STATES PATENT OFFICE.

ROBERT STALKER, OF HEATON NORRIS, AND GEORGE BATY, OF STOCKPORT, ENGLAND, ASSIGNORS OF ONE-THIRD TO ARNOLD TURNER, OF DENTON, ENGLAND.

APPARATUS FOR MANUFACTURING FELT HATS.

SPECIFICATION forming part of Letters Patent No. 585,796, dated July 6, 1897.

Application filed June 26, 1896. Serial No. 597,094. (No model.) Patented in England May 2, 1895, No. 8,718.

To all whom it may concern:

Be it known that we, ROBERT STALKER, a resident of Heaton Norris, in the county of Lancashire, and GEORGE BATY, a resident of Stockport, in the county of Chester, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Apparatus for Manufacturing Felt Hats, (for which we have obtained a patent in Great Britain, No. 8,718, dated May 2, 1895,) of which the following is a specification.

This invention is designed to provide apparatus for "planking" hat-bodies, in which the operation will be carried on or performed as well and efficiently by machine as by hand.

Hitherto in the machines constructed for planking hat-bodies it has been generally customary to work such machines continuously in one direction, with the result that the roll of bodies was gradually tightened or compressed while such remained in the machine, which prevented the fur freely felting together and prevented it being maintained sufficiently moist or wet to allow the operation of felting to be carried on under the most favorable conditions.

The invention consists, essentially, of an apron or cloth or similar device, suspended in the form of a loop in a vertical or approximately upright position, affixed to reciprocating planks or frames or carried by rollers or other means which give to it a reciprocating movement, whereby the hat-bodies are moved backward and forward and rolled and unrolled during the operation of felting. It will be fully described with reference to the accompanying drawings.

Figure 1 is a front elevation; Fig. 2, a transverse sectional elevation.

Between upright end frames A a main or central reciprocating plank B is mounted to move up and down in slides. At one or both, preferably at both, sides of the reciprocating plank B is placed a second reciprocating plank C, which moves simultaneously with the plank B, but in the reverse direction.

Between the reciprocating plank B and each of the reciprocating planks C we place an apron or cloth D or a number of strips of rub-

ber or other material in the form of a depending loop capable of holding suspended in the loop between the planks a roll of hat-bodies. Each of these aprons D is attached by one edge to the side of the plank B and by the other edge to the side of one of the planks C.

The central plank B extends the whole width of the machine and slides up and down any required distance between slides *a* in the frame A. It is operated by cranks E on the crank-shaft F, being connected thereto by the connecting-rods *e* and brackets *b*, affixed to the ends of the plank.

The side planks C are made of approximately the length of a roll of hats, one, two, or more, preferably two, as illustrated, extending across the machine. Each of these side planks C is made with an outer frame *c*, to which is hinged a door or flap *c'*, capable of opening outward, and to the upper edge of such door *c'* is attached the edge of the looped apron D, so that when the door is opened or drawn forward access can be had to the interior of the looped apron for the purpose of inserting or withdrawing the roll of hat-bodies.

The side planks C are mounted in pairs, one at either side of the central plank B, and are moved up and down parallel thereto by the eccentrics G, to which they are connected by the connecting-rods *g* and links *g'*. On the end of each connecting-rod is a cross-head G', to which the links *g'* are pivoted.

The planks C slide up and down in adjustable slides H, which are moved to and from the central plank B by the pivoted bell-crank lever K, the weighted lever L, and connecting-rod *l*, so that the distance between the planks is adjustable to receive a roll of hat-bodies of any desired thickness and to impart any desired pressure thereto. The weighted lever L also serves as a foot-lever or pedal, whereby the operator can add additional pressure and withdraw the pressure by lowering it or raising it by the foot.

The looped apron D may be made of a sheet of cloth, rubber, or other fabric or flexible material or may be made of a number of strips of such material placed side by side.

Below the reciprocating planks B and C and

looped apron D is placed a trough or kettle M to contain boiling water or other liquor, into which the hat-bodies may from time to time be dipped, and above the planks are placed perforated pipes N, whereby a supply of water or other liquor can be applied to the roll of hat-bodies while under operation to maintain the desired degree of moisture. The water or liquor is supplied to the perforated pipes N from the troughs or kettle M, being raised by a small pump-injector or other appliance.

In operation the two surfaces of the apron D, between which the roll of hat-bodies is placed, are moved to and fro in opposite directions and rotate the roll of hat-bodies first in one direction and then in the reverse direction, thus obtaining as nearly as practicable the same movement and the same elastic pressure as in hand-planking, and the movement and action are such that if the hat-bodies are rolled up loose before putting them into the machine they will be loose when they are taken out again, the same also where thin felt is required and they are rolled up tight they will be tight when they are withdrawn.

What we claim as our invention, and desire to protect by Letters Patent, is—

1. A machine for planking hat-bodies constructed with looped aprons a central reciprocating plank to which one edge of the looped aprons is affixed two side planks capable of being moved to and from the central plank and provided with hinged doors or flaps to which the other edge of the looped aprons is attached cranks or eccentrics for operating the planks and a trough or kettle for contain-

ing hot water or liquor substantially as described.

2. In a machine for planking hat-bodies the combination with the central reciprocating plank B the rotating cranks E by which the plank is reciprocated and apron D connected thereto and to the side plank C of the side planks C the eccentric G by which the planks C are reciprocated the connecting-rods *g* the cross-head G' and the links *g'* which connect the cross-head with the cranks.

3. In a machine for planking hat-bodies the combination of the vertical central reciprocating plank B the two reciprocating side planks C the looped aprons D suspended in a loop between the planks C and the plank B the cranks E and eccentrics G for actuating the reciprocating planks the connecting-rods *e* and brackets *b* for connecting the central plank with the cranks E the connecting-rods *g* cross-head G' and links *g'* for connecting the side planks with the eccentrics G, the adjustable slides H in which the side planks C move up and down the tank M placed below the tanks to contain hot liquor and the pipes N for distributing the liquor over the aprons substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 13th day of June, 1896.

ROBERT STALKER.
GEORGE BATY.

Witnesses:

I. OWDEN O'BRIEN,
CHAS. OVENDALE.