

(No Model.)

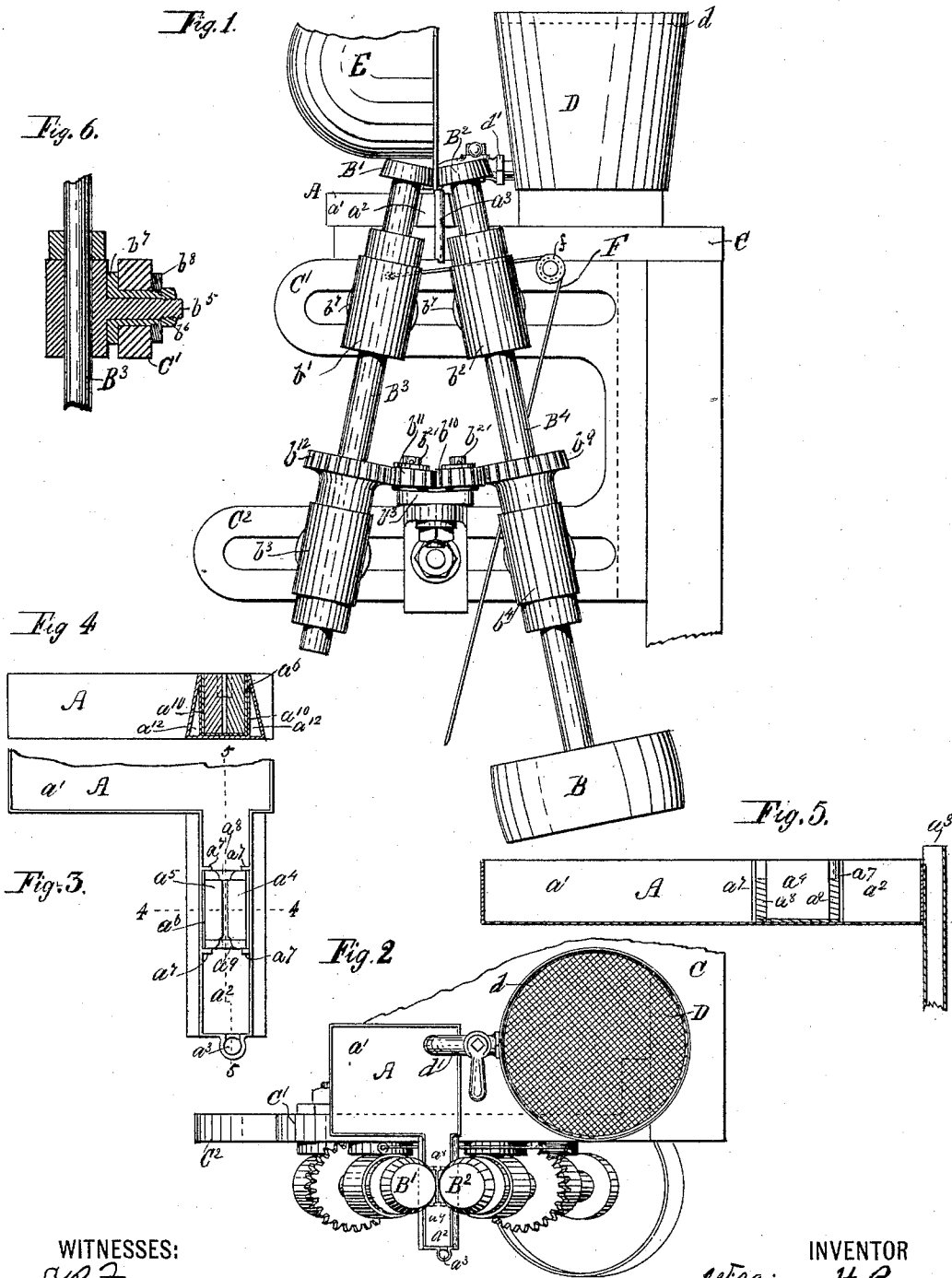
W. H. BARNUM.
MACHINE FOR STIFFENING HATS.

No. 476,860.

Patented June 14, 1892.

Fig. 1.

Fig. 6.



WITNESSES:

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MACHINE FOR STIFFENING HATS.

SPECIFICATION forming part of Letters Patent No. 476,860, dated June 14, 1892.

Application filed December 18, 1891. Serial No. 415,448. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HILL BARNUM, of Danbury, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Machines for Stiffening Hats, of which the following is a specification.

This machine is particularly adapted to applying stiffening to the edge portion of a hat-brim.

I will describe a machine embodying my improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying my improvement. Fig. 2 is a plan or top view of the machine with a portion of the table broken away. Fig. 3 is a plan view, on a larger scale, of a portion of a distributing-tank comprised in the machine. Fig. 4 is a vertical section taken at the plane of the dotted line 4 4, Fig. 3. Fig. 5 is a vertical section taken at the plane of the dotted line 5 5, Fig. 3. Fig. 6 is a vertical section of a journal-box.

Similar letters of reference designate corresponding parts in all the figures.

A designates a distributing-tank containing stiffening material, into which a hat-brim is caused to travel.

B' B² designate rollers by which the hat-brim is moved.

The distributing-tank A is mounted upon a table C, which may be supported in any suitable manner. On the table C is also mounted a reservoir D, containing stiffening material. In the upper part of this reservoir is a sieve *d*, through which the stiffening material may be strained when introduced into the reservoir. In the lower portion this reservoir is furnished with a faucet *d'*, by means of which the stiffening material may be caused to flow in any desired quantity from the reservoir in the distributing-tank. The faucet will be kept open to such a degree as to maintain the stiffening material in the distributing-tank at the desired level.

It will be seen that the distributing-tank has a large portion or body *a'* and a narrow portion *a²* extending therefrom. This narrow portion extends between shafts upon

which the rollers B' B² are mounted. The outer extremity of the narrow portion *a²* is provided with an outlet *a³*, from which the surplus stiffening material will be discharged. This outlet, as shown, consists of a tube fastened to the end of the distributing-tank and having an opening near the top of the said tank.

In the narrow part of the distributing-tank *a²* are two pieces of sponge or like material *a⁴* *a⁵*, between which the edge portion of a hat-brim may pass. These pieces of sponge or other material may be held in place in any suitable manner—as, for instance, in a trough-shaped piece *a⁶* of sheet metal between lugs *a⁷*, extending inwardly from the sides of the narrow portion *a²* of the distributing-tank. Within the ends of this trough-shaped piece *a⁶* are blocks of wood or other suitable material *a⁸* *a⁹*, which are also held in place by the lugs *a⁷*. These blocks are shown as having central openings in their upper edges to permit of the passage of the edge portion of a hat-brim through them. They also serve to gage the depth to which the hat-brim shall descend into the distributing-tank. The pieces of sponge or analogous material regulate the amount of stiffening material which is applied to the hat-brim.

The main side walls of the narrow portion *a²* of the distributing-tank diverge downwardly. Inside of them are vertical walls *a¹⁰* at the point where the trough-shaped piece *a⁶* is inserted. These inner vertical walls form a suitable holder for the trough-shaped piece. The space between them and the outer walls constitute passages *a¹²*, along which the stiffening material may flow past the pieces of sponge or other material, so as to reach both ends of the latter.

The rollers B' B² are mounted on shafts B³ B⁴, supported in journal-boxes *b' b² b³ b⁴*, arranged so that the shafts will converge toward their roller-engaging ends. The rollers B' B² are slightly conical. The journal-boxes *b' b² b³ b⁴* are supported by arms C' C², here shown as extending from one of the supports of the table C.

The shaft B⁴ is not intended to have any oscillating motion. Hence its journal-boxes

may after suitable adjustment be clamped to the arms C' C². The shaft B³ is, however, intended to oscillate so that its roller B' may move toward and from the roller B² during the operation of the machine. Owing to this the lower journal-box b³ of the shaft B³ will be fixed against movement lengthwise of the arm C²; but the upper journal-box b' for this shaft B³ will be made capable of moving lengthwise of the arm C'.

The means for securing the several journal-boxes to the arms C' C² may be the same. Suitable means are illustrated by Fig. 6, where it will be seen that each journal-box has a cylindric shank b⁵, having a screw-thread upon its outer end for the reception of a nut b⁶, and that such shank passes through a sleeve b⁷, which is capable of passing through a slot in an arm C' or C², has a head at one end, and at the other a screw-thread, with which is engaged a nut b⁸. Obviously by clamping the nut b⁶ upon the shank b⁵ of any journal-box the shank of such journal-box will be clamped, so as to be incapable of rotation within its sleeve b⁷, and it is equally clear that if the nut b⁸ of the sleeve belonging to any journal-box is tightened to clamp such sleeve to the arm C' or C², whereby it is supported, such journal-box will be incapable of moving lengthwise of the supporting-arm.

The nuts b⁶ b⁸ belonging to the journal-boxes b² b⁴ wherein the shaft B¹ is journaled, will be clamped in the manner described, so as to hold these journal-boxes rigidly.

The nut b⁸ belonging to the journal-box b³, wherein the shaft B³ is journaled, will be clamped so as to preclude any movement of such journal-box lengthwise of the arm C²; but the nut b⁶ belonging to this journal-box will be left loose enough to permit of the oscillation of the journal-box.

The nuts b⁶ b⁸ belonging to the journal-box b', wherein the upper portion of the shaft B³ is journaled, are left loose, so that this journal-box b' may not only oscillate, but may move lengthwise of the arm C'.

The journal-box b' has attached to it one end of a strap or like device F, which passes around a guide-pulley f, mounted upon the arm C' and extends to a treadle. The attendant of the machine may therefore adjust the roller B' toward the roller B² by shifting the treadle.

The shaft B¹ may be driven by a belt applied to a pulley B, affixed to said shaft. Ro-

tary motion may be transmitted from this shaft by a gear-wheel b⁹, affixed thereto, through gear-wheels b¹⁰ b¹¹ to a gear-wheel b¹², affixed to the shaft B³. The gear-wheels b¹⁰ b¹¹ are mounted upon a stud b²¹, affixed to a plate b¹³, supported by the arm C². This plate is shown as being capable of being clamped in different positions to said arm. Two gear-wheels b¹⁰ b¹¹ are employed, so as to secure motion of the shaft B² in proper direction relatively to the shaft B⁴.

E designates a portion of a hat having its brim extended into the narrow portion of the distributing-tank A between the pieces of sponge or analogous material a⁴ a⁵ and passed between the rollers B' B².

It will be seen that the edge portion of a hat-brim may be passed between pieces of sponge or like substance saturated with stiffening material and engaged by the rollers B' B², close to the crown of the hat, so as to be fed or moved along.

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

1. In a machine for stiffening hats, the combination, with a distributing-tank for stiffening material constructed to receive a hat-brim of a pair of rollers adjacent an opening of the tank for engaging a hat-brim and moving it through the stiffening material in said tank, substantially as specified.

2. In a machine for stiffening hats, the combination of a reservoir for stiffening material, a distributing-tank receiving stiffening material from said reservoir and constructed to receive a hat-brim, and rollers adjacent an opening of the tank for engaging a hat-brim and moving it through the stiffening material in the tank, substantially as specified.

3. In a machine for stiffening hats, the combination, with a distributing-tank for stiffening material constructed to receive a hat-brim, of pieces of sponge in said tank for depositing stiffening material on the hat-brim, and rollers adjacent an opening of the tank for moving a hat-brim through said sponge, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HILL BARNUM.

Witnesses:

ELI T. HOYT,
FRANK N. LEACH.