

G. YULE.
Hat-Flanging Machine.

No. 219,561.

Patented Sept. 9, 1879.

Fig. 1.

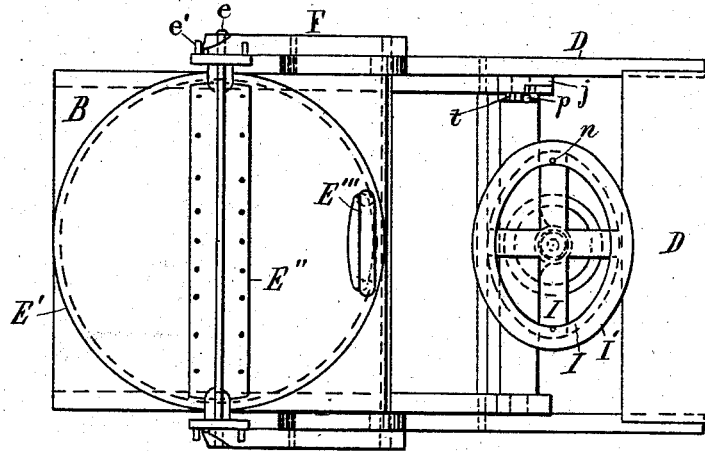
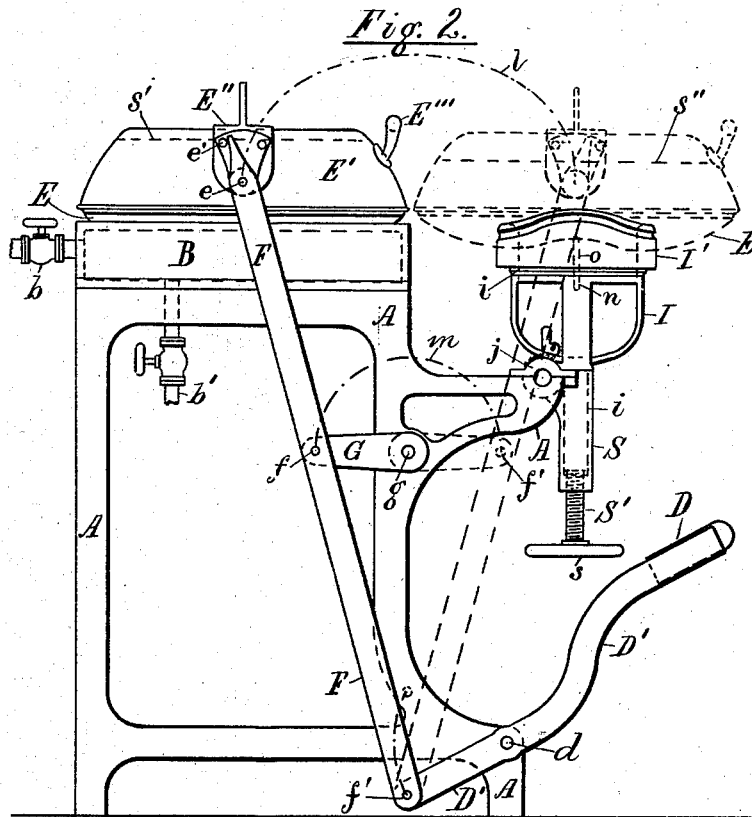


Fig. 2.



Attest.

Wm L. Bush
Wm L. Breach

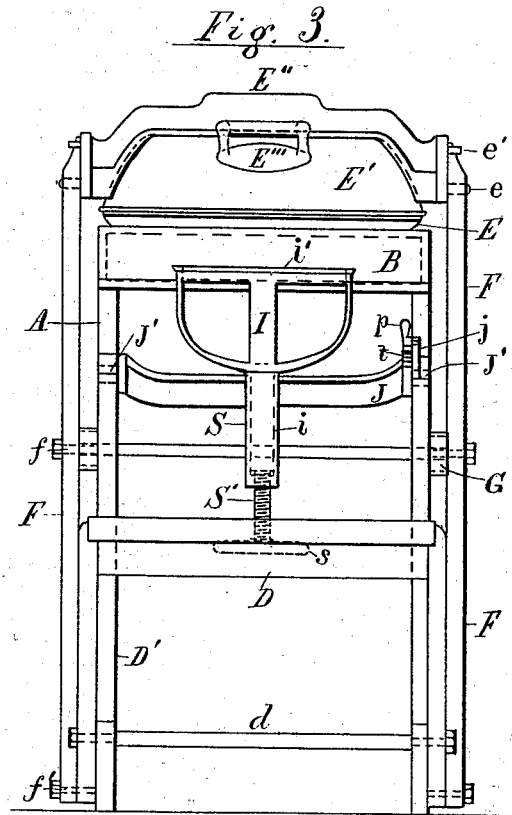
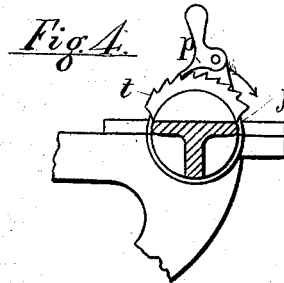
Inventor.

George Yule, per
Thos. S. Coane, Atty.

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Witness

Wm. L. Breck.
Wm. L. Breck

Inventor

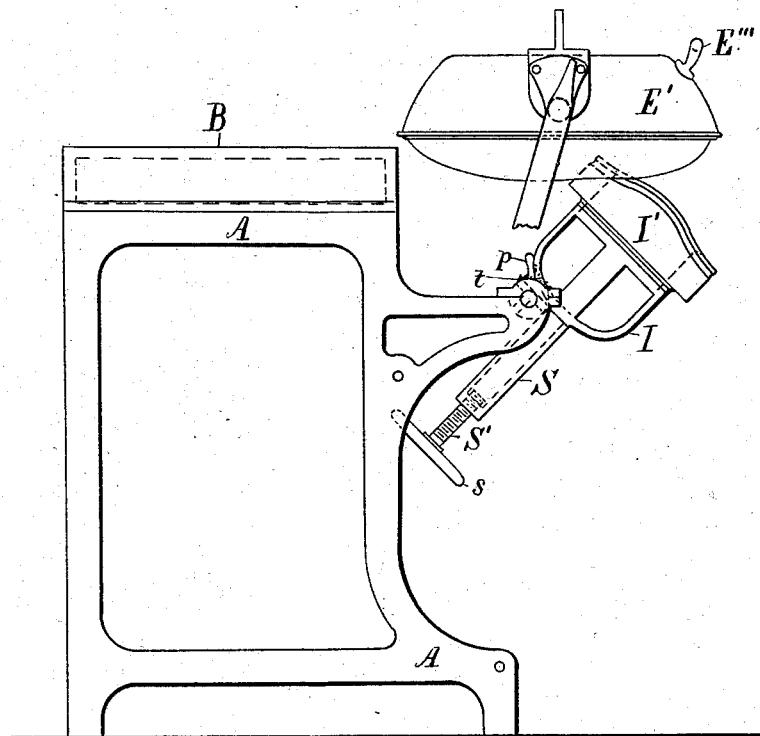
George Yule, per
Thos. J. Crane, Atty.

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Fig. 5.



Attest.

Wm L. Fish.

Wm L. Breach

Inventor.

George Yule, per

Thos. S. Crane, Atty.

UNITED STATES PATENT OFFICE.

GEORGE YULE, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN HAT-FLANGING MACHINES.

Specification forming part of Letters Patent No. **219,561**, dated September 9, 1879; application filed May 15, 1879.

To all whom it may concern:

Be it known that I, GEORGE YULE, of Newark, in the county of Essex, State of New Jersey, have invented a new and useful Improvement in Hat-Flanging Machines, of which the following is a specification.

My invention relates to an improvement in hat-flanging machines; and consists in a novel mode of supporting and carrying a press-bag for pressing hat-brims, and in the combination of the same with a hot-table and pressing-flange, and with operative mechanism for transferring the press-bag from the table to the flange and back again to the table, to be reheated for repeated use.

It also consists in an improved metallic filling for such press-bags.

The press-bags in ordinary use consist of an inverted tin pan provided with its usual handles to move the same, and having a piece of cloth or canvas drawn loosely over its mouth and secured by a string or wire outside of the bead at the edge of the pan. Being filled with sand they are then applied to a hot metallic surface and absorb the heat needful to operate upon the hat-brim. The latter being then laid upon a flange of the proper shape, the hot sand-bag is pressed upon it, and the brim is thus forced into the shape of the flange, so far as the bag is able to adapt itself to the curvatures of the flange.

In the case of curled brims, a sand-bag applied by hand is quite unable to reach all parts of the rolled brim, which have therefore hitherto been pressed into shape by hand afterward.

When operated by hand, the weight of the sand-bag, although not as great as is desired to press effectively, is limited by the strength of the operator, who is also restricted by the weight from applying the bag freely to the various sides and curves of the flange.

My invention obviates this difficulty by suspending the sand-bag upon moving mechanism, and providing suitable adjustments for the hat-flange, so that it may be presented upon any side to the pressure of the bag and all parts of the hat-brim be shaped equally well.

By the adoption of such means for moving and operating the press-bag I am enabled to increase its size and weight to any desired ex-

tent, and to employ for the interior filling materials much more suitable than sand for receiving and conducting the heat to the hat-brim.

For this purpose I employ metals reduced to filings, chips, or grains of any suitable size, iron being preferable on account of its cheapness, and not being liable to rust by reason of the heat to which it is constantly exposed.

Having thus described the improvement I have effected in the press-bag itself, I will now describe the means for supporting the hat-flange and applying the press-bags to it.

Figure 1 of the drawings is a plan of my improved machine; Fig. 2, a side elevation of the same; Fig. 3, a front elevation; Fig. 4, a detached view of the adjusting-pawl and ratchet at the trunnion J; and Fig. 5, a detached view of the flange and its standard inclined to receive the pressure of the bag upon its edge.

A A are the side frames of the machine, adapted to support at their rear the hot-table B, at the front the pressing-flange C, at about the same height as the hot-table, and conveniently arranged for the use of the operator, and at the base in front the treadle D, for use in transferring the press-bag E from the table to the pattern-flange I'.

The hot-table B consists of a hollow metallic box provided with a steam-inlet pipe, and a waste-pipe, for maintaining a suitable temperature, and the press-bag rests at intervals upon its hot surface to receive the desired amount of heat.

The bag is attached by its margin to an inverted metallic pan or vessel, E', which is secured by its upper side to a bridge-piece, E'', provided at each end with pivots e, upon which the pan is suspended, so that it may be readily tipped to any desired angle, the loose body of the bag projecting from the mouth of the inverted pan and retaining the filling, somewhat in the shape shown in the dotted lines at the right-hand side of Fig. 2, over the flange I'. The top of the filling is indicated by the letters s' and s'' in the two views of the pan E' in Fig. 2. These pivots are carried by the upper ends of two transfer-rods, F, which are arranged in a nearly vertical position by the sides of the frames A A,

and are connected at their lower ends to the treadle-levers D' , and by their middle to the radius bars or cranks G by pins or bolts f .

The fulcrum d of the treadle D is located so that the lower ends of the rods F are midway between the hot-table and the flange I' , and the centers g of the cranks G are directly over the ends f of the rods F , and arranged so that the cranks stand in a horizontal position when the outer end or foot-plate of the treadle is elevated, as shown in Fig. 2. The effect of depressing the outer end of the treadle is, therefore, to lift the rods F by their lower ends, and, their middles being jointed to the radius-bars G , the tops of the levers carrying the press-bag in the pan E' are carried in the arched curve (shown in dotted lines l in Fig. 2) from the center line of the hot-table to the center line of the pressing-flange, or vice versa.

The object of this mechanism being the ready transfer of the press-bag between the points specified, it is easily seen that the operator is enabled to make this transfer by the use of the foot alone pressing upon the treadle, the connection of the rods F with the radius-bars G serving to carry the bag forward as it is lifted upward by the treadle in the path shown in dotted lines, as the momentum of the bag when it reaches the top of the curve carries it onward, so that it is deposited upon the flange I' by the operator merely relieving the treadle of the pressure first applied.

The devices for supporting the hat to be flanged consists of a cage or standard, I , carrying the pressing-flange I' upon its upper rim, i , and mounted upon the middle of a cross-bar, J , which is hung at its ends by trunnions J' in bearings j in the frames $A A$. A pawl is attached to one of the bearings j , and operates upon ratchet-teeth t , formed upon one end of the bar J , to prevent the tipping of the flange and cage I toward the operator, while the teeth t also afford any adjustment that may be desired in that direction. The middle of the bar J is provided with a downwardly-projecting socket, S , the bottom of which is provided with a screw, S' , fitted with a handle or wheel, s .

The upright cage I is formed with a stem, i , at its bottom, which fits into the socket S , and may be turned freely around in the socket and adjusted vertically by the screw S' .

Pins n are provided in the top rim of the cage I and holes o in the lower side of the flange I' , which thus fits upon the top of the cage, and is prevented from slipping off, the hat-crown extending downward through the rim i' of cage I , and the brim of the hat resting upon the flange I' and assuming the shape of the flange when it receives the pressure of the hot bag.

While in transit from the hot-table to the hat-flange the pan E' is kept from swinging or rocking unduly by pins e' , secured on the ends of the bridge E'' a short distance above the pivots e , and, the upper ends of rods F being

extended upward to fit between the pins, the pan can only tip on its pivots the amount determined by the distance between the pins e' .

In place of the bridge E'' a plate may be secured to the pan E' , or the same be made of metal with a strong bottom, to which ears may be attached for suspending the pan from the levers F instead of rotating it on pins, as at e . If hung on supports above its center of gravity no pins would be needed, as at e' , to keep it from tipping; but it would be less easily inclined when desired by the operator.

By raising the pawl p the flange I' can be inclined at any desired angle, as shown in Fig. 5, and this adjustment, in connection with that afforded by the socket S and screw S' , enables the operator to turn the flange around to present any part of the brim or flange to the pressure of the bag.

A clamp may be used on the trunnion J' , if preferred to the pawl and ratchet teeth, and a set-screw or clamp-socket may also be substituted for the screw S' to sustain the flange I' at the desired height.

I have also used in place of the radius-bars G a pair of inclined guides to direct the movement of the pin f as the rods F were raised by the treadle, one guide serving to carry the pin and rod forward when the bag was raised from its position upon the table B , and the other deflecting the pin backward when raised from the forward position.

In fact the dotted circle m (shown at the pins $f f'$ in Fig. 2) would be the best form of guide to deflect the rods F in the desired manner. Both guides and radius-bars may be dispensed with, and the pan E' pushed or pulled in the desired direction by the handle E''' , attached to its front, for the purpose of adjusting it upon the flange I' .

I do not therefore deem the special devices shown for carrying out my invention as essential features of the same, the essential feature being the combination of the hot-table, press-bag, and standard for the flange I' in one machine, for the purpose set forth; but, as it is a great advantage to have the hands of the operator entirely at liberty to turn the flange around and expose all parts of the hat-brim to the pressure of the hot press-bag, I have described in detail my devices for effecting that object, and claim the same, as follows:

1. The combination of the hot-table and flange I' , supported upon suitable framing, with the press-bag E and operative mechanism for transferring the bag to the table or the flange, at the pleasure of the operator.

2. The combination of the frame A , supporting the hot-table B , and provided with bearings j for rotating the support of the flange I' , with a treadle and mechanism connected thereto for transferring a press-bag from the table to the flange, and vice versa.

3. The mechanism for transferring the press-bag, consisting of the treadle D , levers D' , rods F , and radius-bars G , combined and operated substantially as herein set forth.

4. The combination of the flange I' with a standard and with the bar J, rotating in bearings in the frame A, substantially as set forth.

5. The combination of the flange I', with its standard, having stem i, and the rotating bar J, provided with socket S, to receive and support the standard at the desired height.

6. The combination of the pan or vessel E' with the bag or covering E and the metallic filling herein described.

7. The combination of the vessel containing sand or other suitable filling, and provided with a yielding covering for transferring heat

and pressure to the hat-brims, with a supporting plate or bar provided with pins or ears for tipping the vessel as well as for carrying it to and fro between a hot-table and pressing-flange, substantially as herein set forth.

In testimony that I claim the foregoing I have hereto set my hand this 12th day of May, 1879, in the presence of two witnesses.

GEORGE YULE.

Witnesses:

E. P. ROBERTS,
T. S. CRANE.