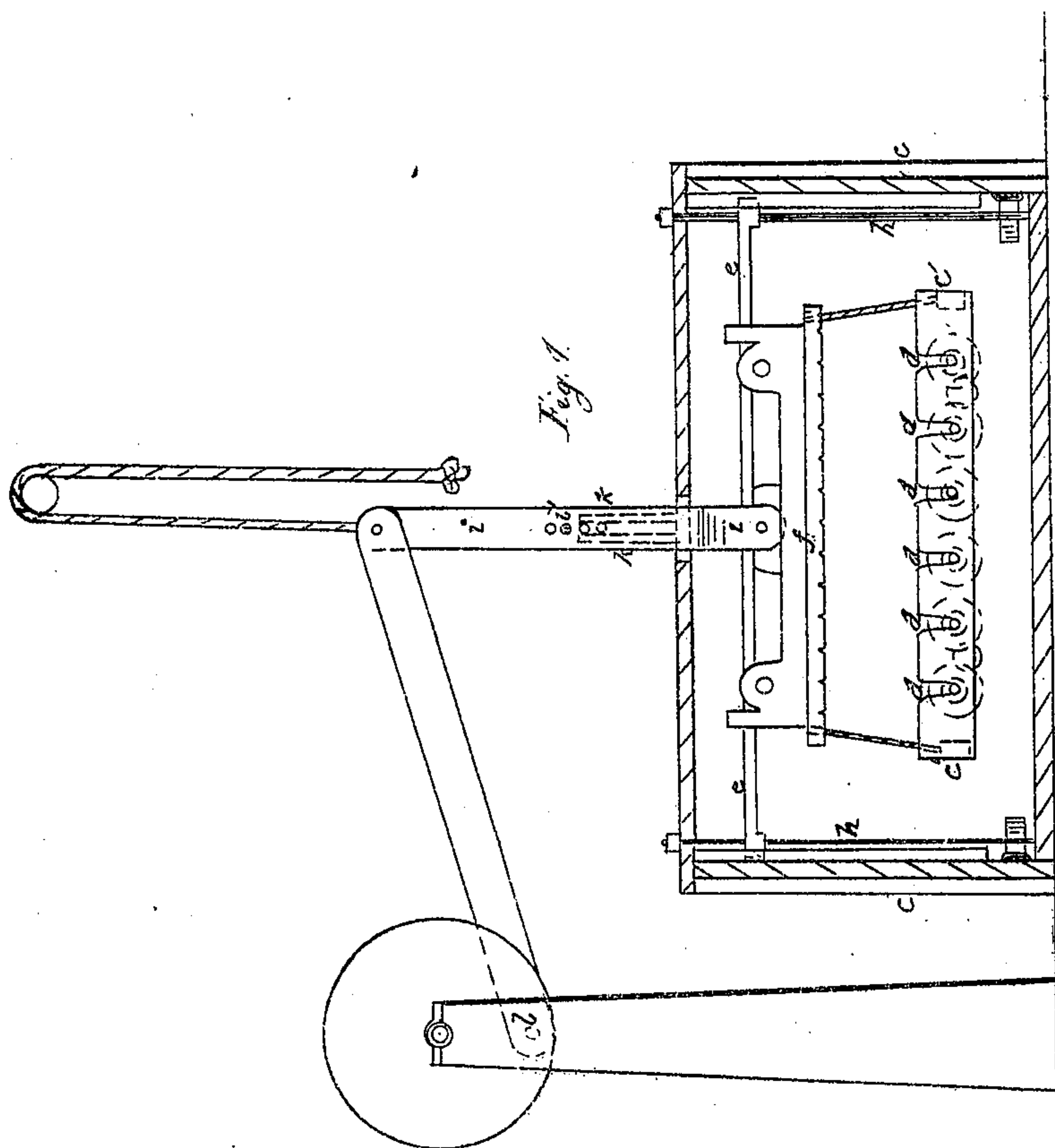


A. Rankin.
Felting Machine.

No. 13,013.

Patented, June 5, 1855



UNITED STATES PATENT OFFICE.

ANDREW RANKIN, OF NEWARK, NEW JERSEY.

MANUFACTURE OF HATS.

Specification of Letters Patent No. 13,013, dated June 5, 1855.

To all whom it may concern:

Be it known that I, ANDREW RANKIN, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful

5 Improvement in Napping and Planking Hat-Bodies; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1, is a side elevation of the napping and sizing apparatus; Fig. 2, is a plan of parts for beating up the nap; Fig. 3, is a perspective view of the steam plank and planking battery.

15 My improvements are for the purpose of facilitating and improving the napping and sizing operation, as heretofore patented by me, and in adding thereto such details as will render the operation sure and perfect.

20 The construction is as follows: The apparatus for the first process consists of what I denominate a steam plank, attached to the battery but this device forms no part of
25 my present application but will constitute a new application for patent which I am about to make. The scalding chest (*c*) is used in the next operation; it may be of any convenient dimensions; in the bottom
30 of which I place a cradle (*c'*), composed of two side and two end pieces; this runs on wheels on the bottom of the scalding chest; in the side pieces are affixed metal bearings for the journals of the rollers (*d*),
35 with which the cradle is filled at proper intervals; around each of these rollers (*d*) two hat bodies are rolled, enveloped in cloths which are attached to the rollers; there are strings attached to the cloths which are
40 wound around the roll, and secured at the end by passing them under a spring affixed to the roller, as shown detached; this affords a convenient and efficient mode of securing the bodies while scalding, and admits their
45 being easily crozed and handled, Fig. 4; the envelopments rest on the bottom of the chest, and are rolled on it as the cradle moves to and fro; above the cradle, and resting on the rolls of hat bodies, a board is
50 placed, lettered (*f*), which I call the hand, its operation being similar to that of the human hand in the ordinary manipulation. At each end of the hand (*f*) there is a projection on the upper side, through which a
55 narrow bar or board (*e*) passes, which I denominate a rider; this rider is made thick

at its ends, through which two vertical iron rods (*h*) pass, that are affixed to the chest, extending from top to bottom; these steady the rider, and cause it to remain parallel 60 with the bottom of the chest while it slides up and down, and by this means the hand is kept level while it is allowed a vibratory motion from end to end of the chest; the hand is moved by an upright lever (*i*), 65 jointed to the center of it, which lever extends up through an opening in the center of the top of the chest, above which a pin passes through the lever at (*i'*) to serve as its fulcrum; this pin is held between four 70 upright guides (*k*) that keep it in place, but allow it to rise and fall to follow the horizontal motion of the hand, and permit it to bear its whole weight upon the rolls of hat bodies; this fulcrum can be shifted to give 75 more or less motion to the hand. The upper end of lever (*i*) is connected by a shackle bar with a wrist on a revolving wheel or crank at (*l*), by which it is vibrated; the action of this hand is to roll the rolls of 80 hat bodies to and fro between it and the bottom of the box, by which sizing and napping is effected. To raise the hats out of the hot water in the scalding chest, I attach the cradle to the hand by four cords, suffi- 85 ciently long not to interfere with the operation of the parts, and then by means of a fall attached to the upper end of the lever (*i*), I raise the whole up above the water, as shown in Fig. 1, in which position 90 the rolls can be easily taken out for crozing or handling in any way required.

Having thus fully described my improvements in hat manufacture, what I claim therein as new, and for which I desire to secure Letters Patent, is— 95

1. The employment of the rider, for controlling the action of the hand, constructed and arranged substantially as above specified; and in combination therewith, the upright lever with movable fulcrum for operating the same. 100

2. I also claim uniting the hand and cradle by cords, whereby the hats are readily raised out of water to be handled, and the 105 cradle is held in place to receive a new set of rollers.

ANDREW RANKIN.

Witnesses:

WM. S. PENDLETON, Jr.,
JACOB HATZEL.