J. D. BLOOD & G. TOPPING.

Corn Broom Machine.

No. 166,065. Patented July 27, 1875.

Fig 1

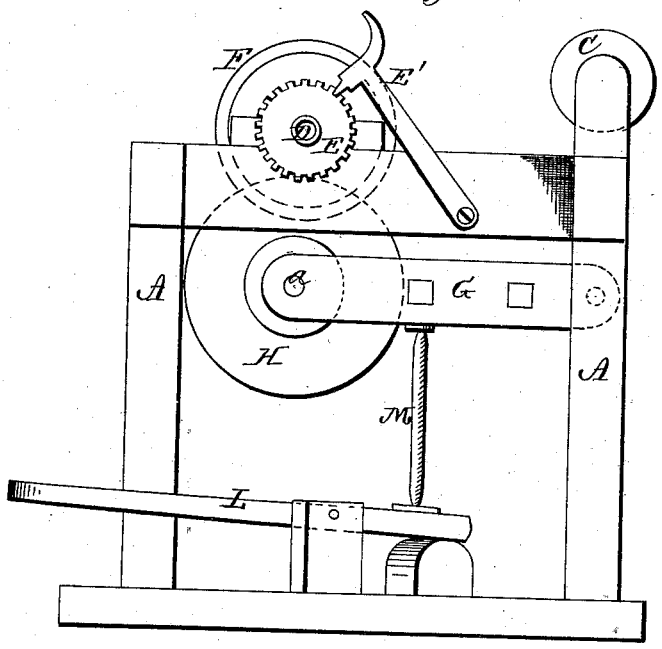


Fig 3

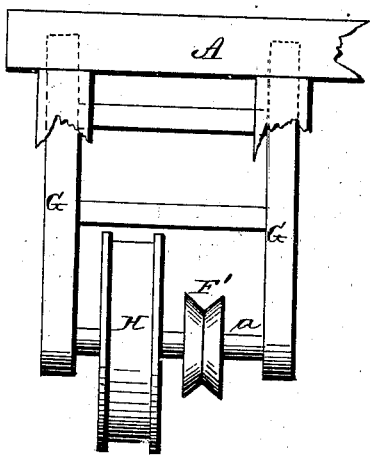


Fig 2

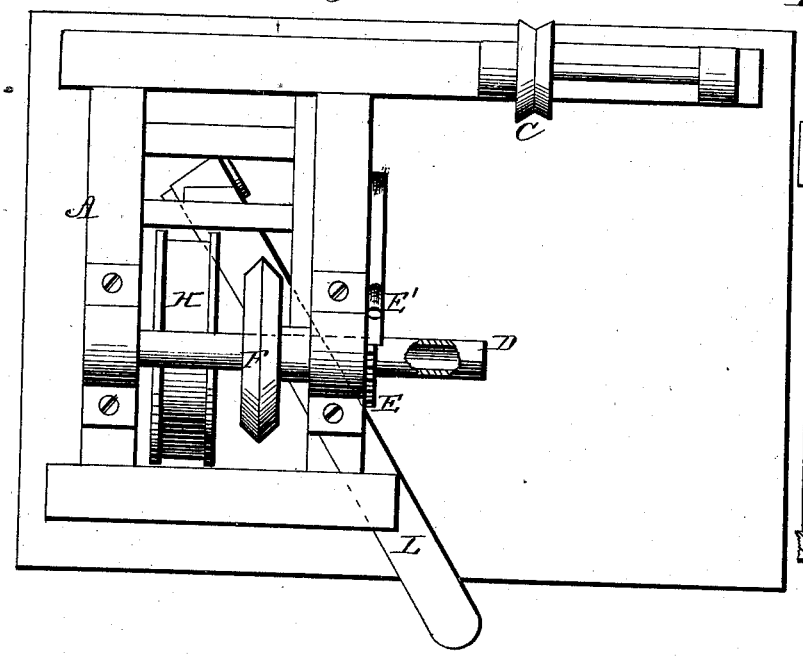
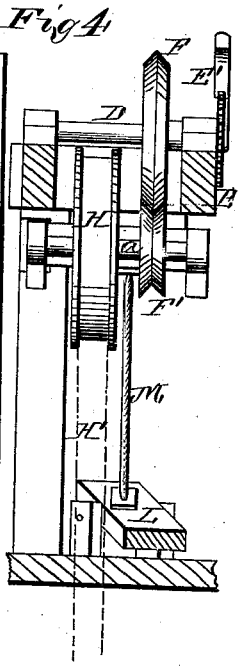


Fig 4



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN D. BLOOD AND GEORGE TOPPING, OF AMSTERDAM, NEW YORK, ASSIGNORS TO JOHN D. BLOOD, HENRY HERRICK, AND GEORGE TOPPING, OF SAME PLACE.

IMPROVEMENT IN CORN-BROOM MACHINES.

Specification forming part of Letters Patent No. **166,065**, dated July 27, 1875; application filed May 19, 1875.

To all whom it may concern:

Be it known that we, JOHN D. BLOOD and GEORGE TOPPING, of Amsterdam, in the county of Montgomery and in the State of New York, have invented certain new and useful Improvements in Broom-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to machines employed for winding the broom with wire or cord; and it consists in the combination, with a hollow mandrel, ratchet-wheel, and dog, of two friction-wheels, a band-wheel, a vibrating frame, and a treadle with connecting-rod, all arranged in such a manner that the said friction-wheels or their equivalents will be capable of revolving the hollow mandrel, and the treadle and pivoted wheel-frame be capable of throwing the said wheels out of contact, to instantly stop the revolving of the mandrel and hold the winding tight, or to permit a contact of the said wheels at the will of the operator. The object of our invention is to effect a steady winding of the broom with a uniform degree of tension, and allowing the operator to employ both hands for manipulation of the corn-brush, and guidance of the wire or cord employed for binding in its proper spiral direction on the neck of the broom.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation of our machine. Fig. 2 is a plan view of the same. Figs. 3 and 4 are views of detailed parts thereof.

A represents any suitable frame-work. C is the pulley carrying the cord or wire from the tension-drum. D is the hollow mandrel for receiving the handle of the broom. E is the rack-wheel secured to the mandrel D, and provided with a dog, E′. These parts may be constructed in any of the known and usual ways, and need no description. Secured to the mandrel D is a friction-wheel, F, which is to give motion to the mandrel when the said wheel is revolved. G is a frame made in any suitable form, and pivoted to any proper timber or part of the frame, and carries the shaft *a*, working in proper bearings, made in or secured to the frame G. On the shaft *a* is secured the friction-wheel F′, working with the wheel F, and the band-pulley H, operated by the band H′ from a suitable driving-wheel. L is a treadle-lever, having its rear end properly pivoted to the floor or equivalent stationary piece, and its front end projecting forward and from beneath the machine, as shown. M is a draw-rod, connected with the treadle L below, and with the pivoted frame G, carrying the wheel F′. When the treadle is pressed down the rod M will throw the end of the frame G carrying the wheel F′ up, and thereby tighten the band H′ on its pulley H, and also cause the friction-wheel F′ to contact with the wheel F, to cause it to revolve, and thereby turn the mandrel it is secured to.

The several parts of the machine operate as follows: The handle of the broom to be made is inserted in the hollow mandrel D, and secured in the usual manner. The wire or cord *x* is brought, in the usual manner, from its coil or spool around the tension-drum and over the carrying-pulley C, thence to the end of the handle projecting from the mandrel, where it is secured. The operator will then select the necessary quantity of the corn-brush to circle the handle, and holding the same around will pull down the treadle and spin on the cord or wire. He will then select the necessary amount to form one of the shoulder layers, and insert it between the wire and the handle, and give to the treadle L a pressure down with his foot for a brief moment, when the mandrel will be revolved during the time the treadle is down, and the wire be spun over the said shoulder layer. A second shoulder layer is then laid on the opposite side of the handle, and the lever is pressed down for a time sufficient to cause one or more revolutions for the spinning on of two or three coils of the wire or cord. He then will select the

necessary brush for the first cover layer, and bind the same down to the handle by spinning on the wire or cord as the treadle is pressed down, relieving the treadle of pressure only when it is desirable to place the brush properly beneath the wire. When the whole cover is laid the treadle will be pressed down for a time sufficient to revolve the mandrel for spinning on one or two coils. In laying all the subsequent cover layers the operator will operate in substantially the same manner with the treadle to throw the wheel F′ in contact with the wheel F for spinning on the wire or cord, or to release the same for the stoppage of the revolution of the mandrel, the dog E′ operating with the ratchet-wheel E, to retain the mandrel and the handle within set, that the tension of the wire or cord may be maintained. The several hurl layers of brush are then laid on, the operator operating with the treadle in the times he is required to spin on the wire or cord, and releasing the treadle when any stoppages are required. The neck of the broom is then finished, which requires of the operator only his simply pressing down the treadle to throw the moving wheel F′ in contact with the transfer-wheel F, and cause the mandrel with the broom to revolve, and his guiding the wire or cord being spun to cause the same to lay in proper coils for durability and finish.

It is readily seen that while the friction-wheels F and F′ are preferable on account of the small degree of movement of the transfer-wheel necessary to make or break the contact of the said wheels for revolving or stopping the motion of the mandrel, yet band-pulleys with a band-tightener, or gear-wheels with friction or other clutch, might also be used in connection with the lever and draw-rod to secure any irregular intermittent revolving motion of the mandrel, subject to the will and control of the operator.

The advantages secured by the improvements in this invention, aside from ease to the operator and increased speed in spinning on the wire or cord, is that the operator is free to employ either or both hands for handling and manipulating the brush to be operated with, and guiding the wire as it is being spun, while the wire or cord, as it is spun or coiled, will be brought more uniformly, both in direction and tightness, around the stock of the brush and the neck of the broom, so as to enable the operator to not only give to his work a neat appearance, but greater solidity, to the parts bound by the coiling of the cord or wire.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a broom-winding machine, the combination, with the hollow mandrel D and ratchet-wheel E, with its dog E′, of the friction-wheels F and F′, band-wheel H, vibrating frame G, treadle L, and rod M, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 13th day of May, 1875.

JOHN D. BLOOD. [L. S.]
GEORGE TOPPING. [L. S.]

Witnesses:
ZERAH S. WESTBROOK,
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