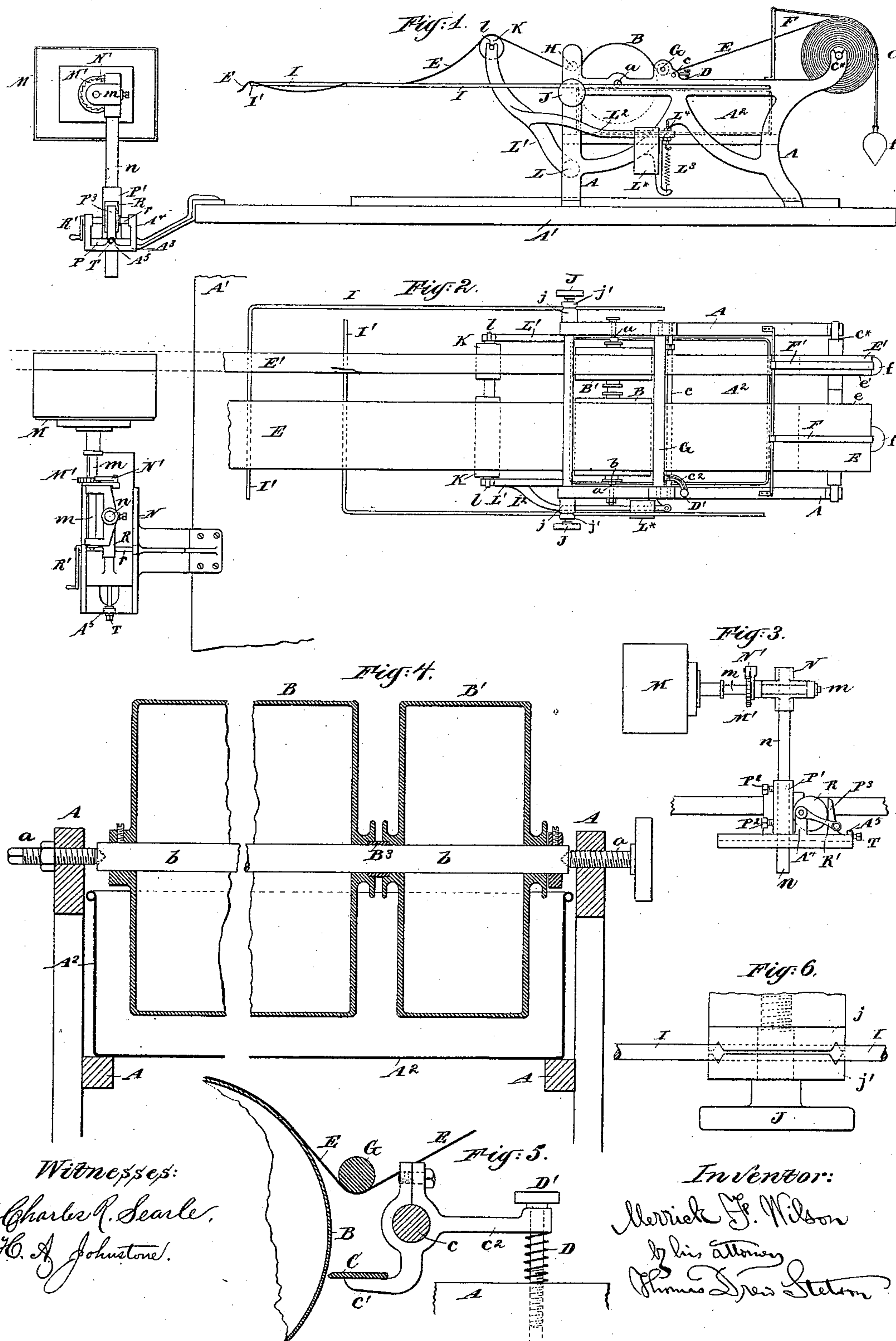


(No Model.)

M. F. WILSON.  
MACHINE FOR COVERING PAPER BOXES.

No. 450,275.

Patented Apr. 14, 1891.





# UNITED STATES PATENT OFFICE.

MERRICK F. WILSON, OF CHICAGO, ILLINOIS.

## MACHINE FOR COVERING PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 450,275, dated April 14, 1891.

Application filed December 22, 1888. Serial No. 294,438. (No model.)

*To all whom it may concern:*

Be it known that I, MERRICK F. WILSON, of Chicago, in the county of Cook and State of Illinois, temporarily residing in New York city, in the State of New York, have invented a certain new and useful Improvement in Machines for Covering Paper Boxes, of which the following is a specification.

I apply the covering, as usual, in the form of continuous strips of paper. I mount two freely and independently rotating pasting cylinders or drums on a single axis and scrape the excess of paste from both with a single conveniently adjustable blade. I provide means, universally adjustable, for supporting the paper as it lies extended after each separation, and also means for taking up the slack produced by the continued movement of the strips of paper forward for a time after a box is covered and the paper is detached, as also the slack produced at intermediate periods by the irregularity of the demand for the strips as the box is rotated on its proper form. I provide conveniently and with little call for skill or care for shifting the box-carrying form to the right and left to the exactly proper extent in treating strips of different widths and lapping them to different extents on boxes of various depths, and I provide efficiently against any backward turning of the box-carrying form and its connections in effecting the covering.

The following is a description of what I consider the best means for carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a general side elevation, and Fig. 2 is a plan view, showing all the novel parts and so much of the ordinary parts as is necessary to indicate their relation thereto. The remaining figures show certain portions detached. Fig. 3 is an elevation at right angles to the view in Fig. 1. Fig. 4 is a vertical section of a portion on a larger scale. It is a transverse section. Fig. 5 is a vertical section of a portion taken longitudinally of the machine. Fig. 6 is on a still larger scale. It is a plan view of a portion.

Similar letters of reference indicate like parts in all the figures where they occur.

A is a fixed frame-work of cast-iron or other suitable material, mounted on a platform A',

which may lie on a work-bench or other support.

A<sup>2</sup> is a tank, of sheet metal or the like, partially filled with paste, which is supplied at intervals. Conically-pointed screws *a a*, inserted through the framing support a freely-turning shaft *b*, on which is tightly fixed a wide paste-drum B and is loosely mounted a narrower paste-drum B'. These cylinders are accurately finished, and, being mounted exactly in line and of the same size, both are treated by a single scraper C, which is fixed on arms *c'* from a slightly-rocking cross-shaft *c*, supported on the frame A. There is a curved arm *c*<sup>2</sup>, fixed on the same shaft *c*, which is subject to the action of spring D, tending to raise the arm *c*<sup>2</sup>, and consequently to draw the scraper away from the paste-drums B B', and of a screw D', which draws the arm *c*<sup>2</sup> downward against the force of the spring and holds the scraper rigidly in place relatively to the paste-drums. The paste-drums B and B' are revolved by the motion of the strips of paper drawn along their upper surfaces, and in doing so are scraped by the device C, adjusted by the screw D', so as to present to the paper only a thinly-coated surface, just sufficient to properly paste the paper and prepare it for its application to the box which rapidly follows.

E is a wide strip and E' a narrow strip of paper of great length, previously prepared in rolls *e* and *e'*, and mounted on a cylindrical rod *c*<sup>\*</sup>, supported in the framing and free to rotate except as they are restrained by the friction of strips F F', carrying pendent weights *f* and *f'* and pressing gently on the paper, as shown.

G and H are transverse rolls of small diameter mounted in the positions represented. The strips of paper are passed under each and over the intermediate drum or cylinder B or B', respectively.

I I' is a stout wire of steel or other strong material, bent in a rigid L shape. Its arm I' lies under the paper strips E E', after their passage over the pasting cylinders or drums, being supported firmly by the shank I being grasped in an adjustable clamp formed by the screw J and grooved cheeks *j j'*. The grooves across these cheeks are each a little smaller than half the shank I, so that when the clamp is closed by turning the screw J



- the shank is firmly pinched and stiffly held. The cheeks  $j j'$ , being round and plane-faced, may be turned to lower or raise the arm  $I'$  to any desired extent, taking care to slacken the screw  $J$  before and to tighten it after the adjustment. I show two such bent wires  $I I'$  and two such universal clamps  $J j j'$ , one on each side of the machine. More may be employed, if desired.
- $K$  is a take-up roller mounted under the strips of paper between the paste-cylinders and the supporting-arms and capable of rising and sinking automatically to take care of the slack of the strips when such occurs. The roller  $K$  is carried in bearings  $l$  in arms  $L'$ , fixed on a freely-rocking shaft  $L$ . Its gravity is nearly balanced by a weight  $L^*$ , carried on an arm  $L^2$ . A spring  $L^3$ , adjustable by a nut  $L^4$  and taking hold of the framing  $A$ , gives a gentle lifting force to the roller  $K$  to take up any slack which may be formed by a too tardy stopping of the delivery of the strips and to give it off again and induce a gradual instead of a sudden start of the paste-cylinders and the paper strips when the consumption of paper is again resumed. The bearings  $l$  are open-topped. The roller can be easily removed for cleaning and replaced.
- $M$  is the box-carrying form. To adapt the machine to make boxes differing in dimensions, there may be an assortment of these forms; or one form may be capable of expansion and contraction, or both the expanding and the changing of the forms may be adopted. It is mounted on a shaft  $m$  with provisions for changing. (Not fully shown.) Such are common. The shaft  $m$  is held with liberty to be revolved in a head  $N$ , which is held on a upright rod  $n$  and carries on one end a pawl  $N'$ , which engages with the teeth of a ratchet-wheel  $M'$ , fixed on  $m$ . The upright rod  $n$  is held at any required height by the aid of pinching-screws  $P^2$  in the upright  $P'$  on a carriage  $P$ , which is capable of sliding in ways  $A^3$ , rigidly attached to the platform  $A'$ . The upright  $P'$  has a true vertical face presented toward an arm or upright  $P^3$ , cast on the same carriage  $P$ . The space between these vertical faces receives an eccentric  $R$ , fixed on a shaft  $r$ , supported in lugs  $A^4$ , fixed on the ways  $A^3$ . A screw  $T$ , tapped through a lug  $A^5$  at the end of the ways  $A^3$ , forms an adjustable stop for the motion of the carriage  $P$ .
- The drums  $B B'$  may be any required distance apart which the exigencies may demand, and the strips of paper may be any distance apart required, yet the strips may be applied upon the box with their edges in contact or overlapping. It is usually desired to apply the strips overlapping, the widest strip properly covered by a thin layer of paste being applied first and a narrower strip of the same or a different color being applied at the edge overlapping upon the wide one to a certain extent. I attain this condition by first sliding the carriage  $P$  to the right, and after applying the broad strip  $E$  and winding it on and pressing it gently and breaking or cutting it and allowing the end thus set free to fall again upon the arms  $I'$  and be taken up, if necessary, by a lifting of the take-up roll  $K$ , I slide the carriage  $P$  to the left and repeat the treatment by winding on the narrow strip  $E'$ , applying it in such position that it is partially superposed or overlapped upon  $E$ . To effect this properly with varying conditions, I adjust the screw  $T$ , so as to limit how far the carriage  $P$  may move in one direction, and then turn the eccentric  $R$  with the required force alternately to urge the carriage  $P$  to the right and left as far as it will go, operating by the hand applied upon the crank  $R'$  or by any other convenient means.
- By partially removing the screws  $a a$  the shaft  $b$  and its connected drums may be quickly taken out of the machine and returned. It is therefore easy to clean this important element of the mechanism. By slackening one of the pinching-screws holding the boss of the wheel or drum  $B$  and the collar outside of the loose drum  $B'$ , I can remove and exchange the drum. By inserting a wider or narrower middle piece  $B^3$ , I can have a corresponding space between the drums. By changing the weights  $f$  and  $f'$ , I can vary the tension on the strips of paper. By slackening the screws  $P^2$ , I can raise or lower the head  $N$ , and consequently the position in which the box-carrying form  $M$  is rotated. By turning the nut  $L^4$ , I can vary the force with which the spring  $L^3$  will act to raise the roller  $K$  and to resist its descent. I can cover boxes of other material than paper, as thin wood. I can wind on strips of other material than paper, as thin muslin. I can use other material than paste, as thin glue.
- I claim as my invention—
1. In a box-covering machine, the two paste-drums turning independently on a common axis, combined with a paste-tank, a box-carrying form, provisions for introducing strips of paper and delivering them in contact with said drums, and an automatically-acting take-up roller between the paste-drums and the form, and over which the pasted strips pass to the form, as set forth.
  2. In a box-covering machine, the carriage  $P$ , with the shaft  $m$ , and box-carrying form  $M$ , mounted thereon, in combination with the ways  $A^3$ , eccentric  $R$ , turning means  $R'$ , and adjustable stop  $T$ , arranged for joint operation relatively to each other and to means for supplying and pasting strips of paper, as herein specified.
- In testimony whereof I have hereunto set my hand, at New York city, this 21st day of December, 1888, in the presence of two subscribing witnesses.
- MERRICK F. WILSON.
- Witnesses:  
THOMAS DREW STETSON,  
CHARLES R. SEARLE.