

A. Simpson
Cloth Folder.

No. 98,308.

Patented Dec. 28. 1869.

Fig. 2.

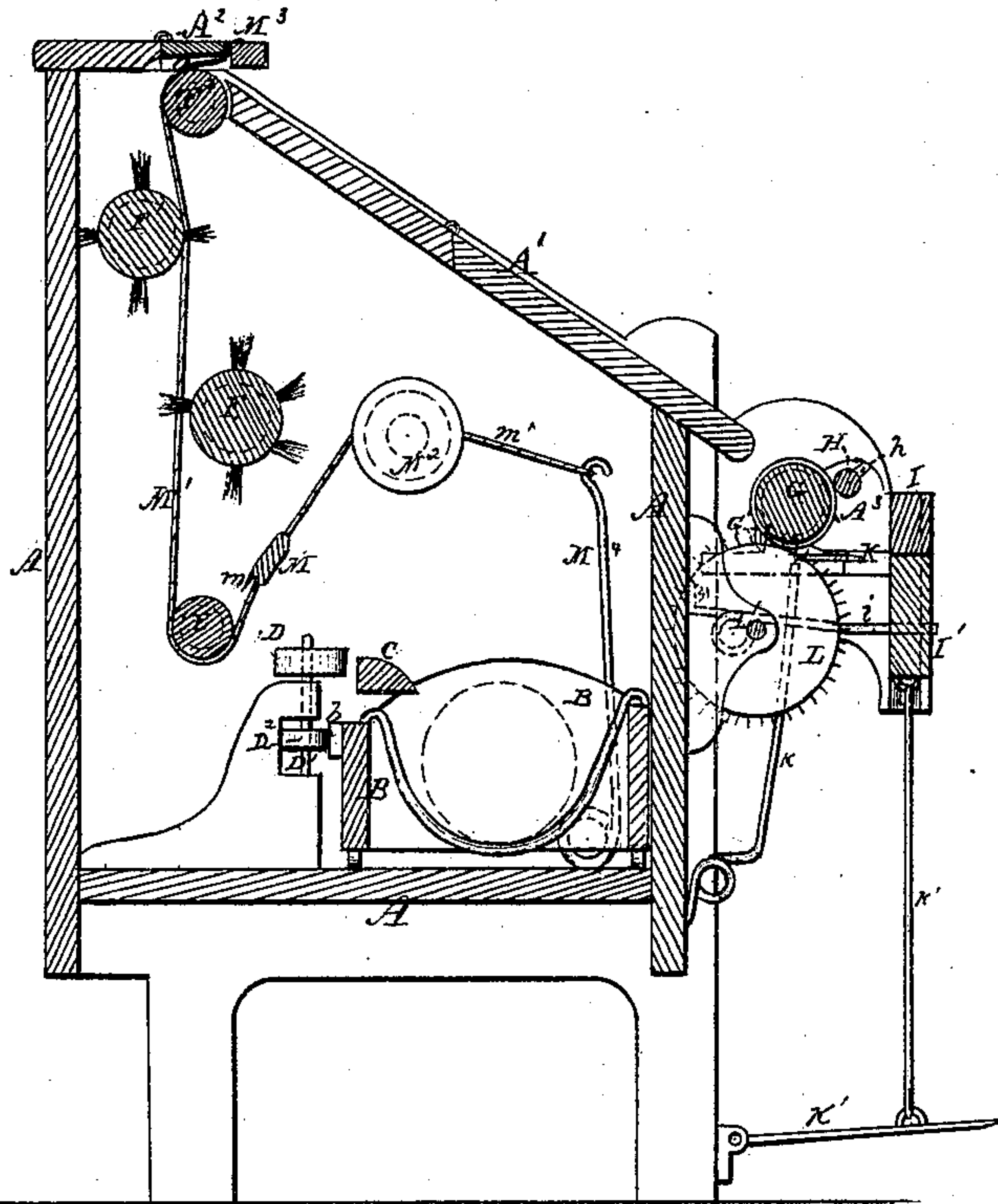


Fig. 1.

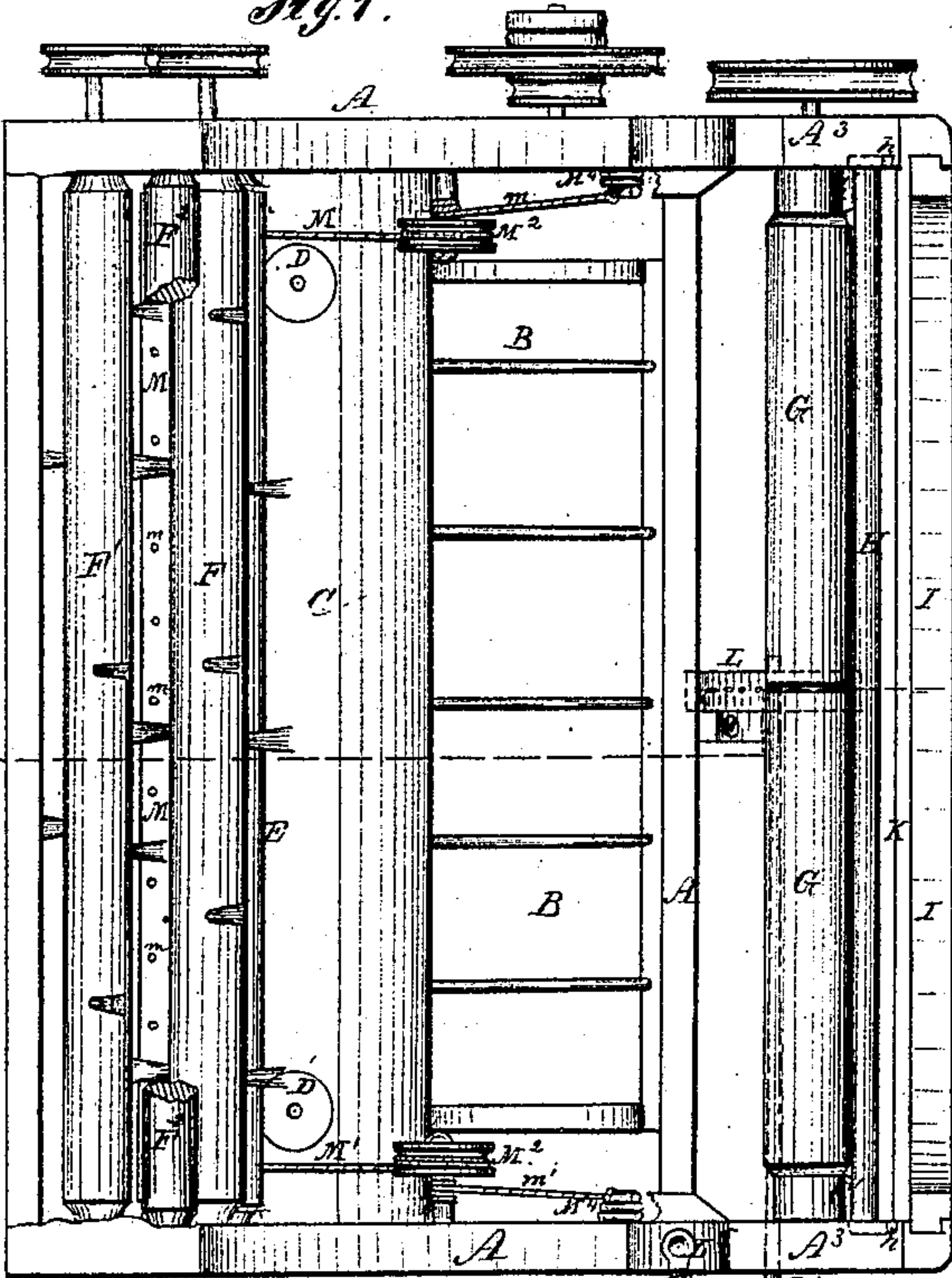
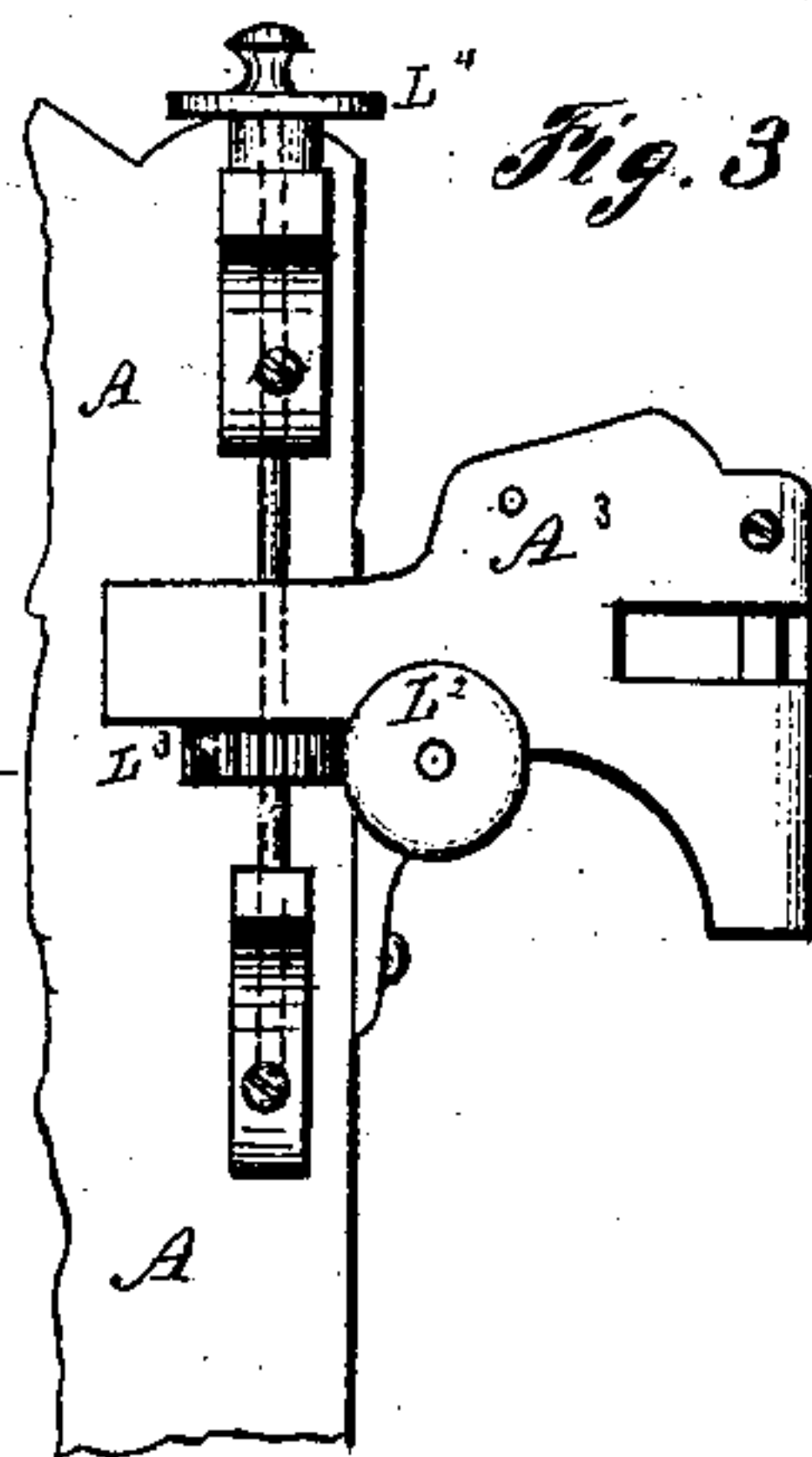


Fig. 3.



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AUGUSTUS SIMPSON, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO
WOONSOCKET IRON FOUNDRY, OF SAME PLACE.

Letters Patent No. 98,308, dated December 28, 1869.

MACHINE FOR FOLDING CLOTH.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, AUGUSTUS SIMPSON, of Woonsocket, in the county of Providence, and in the State of Rhode Island, have invented a new and useful Improvement in Cloth-Folding and Trimming Machines; and I 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 part of this specification, in which—

Figure 1 represents a plan view of the machine, the top of the case being removed to show the interior machinery.

Figure 2 represents a vertical transverse section, on line *x x* of fig. 1.

Figure 3 is an end view of a portion of the machine, showing the devices for registering the number of yards of cloth folded.

The same letters are used in all the figures to designate identical parts.

My invention relates to a machine for dressing, folding, and measuring cloth, as it comes from the loom; and

My improvements consist in the combination and arrangement of sundry parts thereof, as will more fully appear from the following specification and claims.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, in the drawings, represents a desk-like case, which may be made of wood, and is to be mounted upon legs to raise it to a convenient height from the floor.

The sloping top consists, in part, of a hinged lid, A¹, closing an opening through which the roll of cloth is passed into the case, and access may be had to the interior machinery.

The sloping portion of the top is divided from the narrow horizontal strip, at the rear, by a slot, *a*, and to the front edge of this strip a narrow flap, A², is hinged, partly covering said slot when turned down, as shown.

In the interior front portion of this case, a carriage, B, is arranged for the reception of the cloth which it is intended to fold. It may be constructed, as clearly shown in figs. 1 and 2, having a series of curved rods stretched across it, upon which the cloth is supported, so that on unrolling the same, the least possible resistance may be offered. The length of the carriage is somewhat less than that of the case, so that it can play endwise therein, which movement is facilitated by placing it upon rollers, as shown.

C represents the stretcher arranged above the carriage, and extending horizontally from end to end of the case, to which it is firmly secured. Its transverse section is, in form, like the sector of a circle, over the

curved side of which the cloth is drawn for the purpose of smoothing and somewhat stretching the same.

D D represent two friction-rollers, arranged upon the upper ends of two vertical spindles D' D', which have their bearings in the bottom of the case A, and suitable standards secured thereon, in rear of the carriage. These rollers are equidistant from the centre line of the case, and the distance between their peripheries, at the points where they are nearest to each other, is about equal to the width of the cloth to be folded, which, as it is drawn over the stretcher, passes between such rollers, so that its edges come in contact therewith for the purpose of guiding it, so that it may be folded evenly; for if, at any time, the roll of cloth should leave its central position between these rollers, one or the other of them will press against the edge of the cloth and cause the carriage in which the cloth lies to move endwise until the cloth is again in the proper position.

Small friction-rollers, D² D², are placed upon the vertical spindles D¹, which come in contact with ways V, on the rear side of the carriage, near the top thereof, to hold it in proper position, and cause it to move parallel to the rolls and brushes.

E is a horizontal guide-roll, located in rear of the friction-rollers D, and journaled in the ends of the case, so that its under surface is in nearly the same horizontal plane with the friction-rollers D, and its rear surface vertically under and between the revolving brushes F F¹.

The cloth, after passing under the guide-roll E, is drawn up between these brushes, to be thoroughly cleaned, such brushes being made to revolve at a rapid rate in opposite directions.

F² is another horizontal roll, journaled in the ends of the case, and located above the brushes in the slot *a*, and so that the cloth, on passing over it, is drawn down over the sloping top of the case, where it can be inspected by the operator.

G represents a roll, journaled in brackets or supports A³ A³, secured to the ends of the case A, at the front thereof. One journal of this roll projects through one of the brackets, and upon this overhung portion a pulley is secured, by which it is revolved, the pulley receiving its motion from any convenient motor.

The cloth is passed downward from the outer edge of the lid A¹, and passed under the roll G, and then upward over a smaller roll, H, which is in front of, and in close proximity to the roll G, as shown.

The journals of the roll H have their bearings in sloping slots, *h*, in the brackets, so that such roll will always press the cloth into contact with the roll G.

The forward ends of the brackets A³ are united by a bar, I, which forms the upper stationary jaw of the clamp between which the cloth is folded.

I' represents the movable jaw, the ends of which

slide in vertical guides in the brackets A³, it being supported upon springs *i i*, which tend to always thrust it upward and bring it in contact with the stationary upper jaw.

K represents what I term the knife, located under the rolls G and H, and extending horizontally from one bracket to the other, where it is placed in guides, wherein it may slide horizontally back and forward.

Springs *k k*, attached, at one end, to the case, and, at the other, to the ends of the knife, hold it in the rear end of the guides when not operated upon.

The upper surface of the knife is to be about in the same plane with the under surface of the stationary jaw I, or the least below it.

Near each end of the knife, a projection is formed or secured upon its upper surface, which shall be engaged, on each revolution of the roller G, by cams G' G', secured upon the journals of such roll, so as to force the knife forward and cause it to enter a short distance between the jaws of the clamp. The cloth hanging down between the front edge of the knife and the clamp, will thus be pushed, by the knife, into the clamp, and a fold formed on each revolution of the roll G.

The knife is returned to its normal position by the springs *k k*, immediately on its being released from the cams.

On continuing the rotation of the roll G, more cloth will be let down in front of the knife, which is again thrust forward, and another fold clamped between the jaws, the fold already formed remaining in such clamp, held there during the formation of all the succeeding folds, by the action of the springs *i i* upon the movable jaw.

When an entire piece of cloth has been folded, it is taken out of the clamp, the operator bearing down with his foot upon the treadle K', which, being connected by a rod, *k'*, to the movable jaw I, will draw this down, and thus the folded cloth be released from the clamp.

L represents a disk, the circumference of which is equal to exactly one yard. It is arranged upon the end of a horizontal shaft, L¹, having its bearings in boxes secured to the front side of the case A, along which it extends to just beyond one of its ends. The periphery of this disk or wheel is so close to the periphery of the roll G, that the cloth, passing between them, shall cause the disk to rotate.

To insure the constant rotation of such disk, it may have short projecting pins in its periphery, which shall take hold of the cloth as it passes over them. In this case, a groove is made around the roll G, opposite such disk.

Upon the outer end of the shaft L¹, a worm, L², is formed, which engages and drives a worm-wheel, L³,

upon a vertical spindle, pivoted in steps upon the end of the case A.

Upon the upper end of such spindle, a dial-plate, L⁴, is fastened, revolving under a stationary pointer, L⁵, and having figures marked upon its upper surface, which indicate the number of yards of cloth folded, as they come under the pointer.

To remove the difficulty there would be in passing the ends of the cloth, on first starting the operation, up between the brushes and through the slot in the top of the case by hand, I have provided a slat, M, having pins *m* in its rear edge, upon which to fasten the end of the cloth.

This slat is operated by cords M¹ M¹, one end of which is secured to pulleys M² M², upon which a portion is wound.

Their other ends are passed under the roll E, up between the brushes, and through the slot over the roll F², where they are fastened to a bar, M³.

The pulleys M² revolve upon studs fastened in the ends of the case, and are connected, by cords *m' m'*, to springs M⁴ M⁴, as shown.

The end of the cloth having been attached to the slat M, the machine is started, which causes the brushes to be revolved.

The cloth is then drawn up by pulling the cords M¹ outward, by means of the bar M³, until such slat is drawn through the slot *a*, when the cloth may be taken hold of by the hand and disengaged from the slat, which is immediately returned into the case by the action of the springs M⁴, which cause the pulleys M² to wind up the cords M¹.

Instead of springs, weights may be employed for operating the slat M, the knife K, and the movable jaw I.

Having thus described my invention,

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

1. The knife K, jaws I and I', in combination with the rolls G and H, brushes F and F', friction-rollers D D, stretcher O, and carriage B, all arranged and operating substantially as and for the purposes set forth.

2. The wheel or disk L, in combination with the roll G, knife K, and jaws I and I', all constructed and operating substantially as described.

3. The combination of the pulleys M², slat M, cords M¹, cords *m*, and springs M⁴, substantially as and for the purpose set forth.

The above specification signed by me, this 4th day of March, 1869.

Witnesses:

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