(No Model.) 2 Sheets—Sheet 1.

H. G. JOHNSON.

CLOTH FINISHING MACHINE.

No. 504,219. Patented Aug. 29, 1893.

Fig. 1.

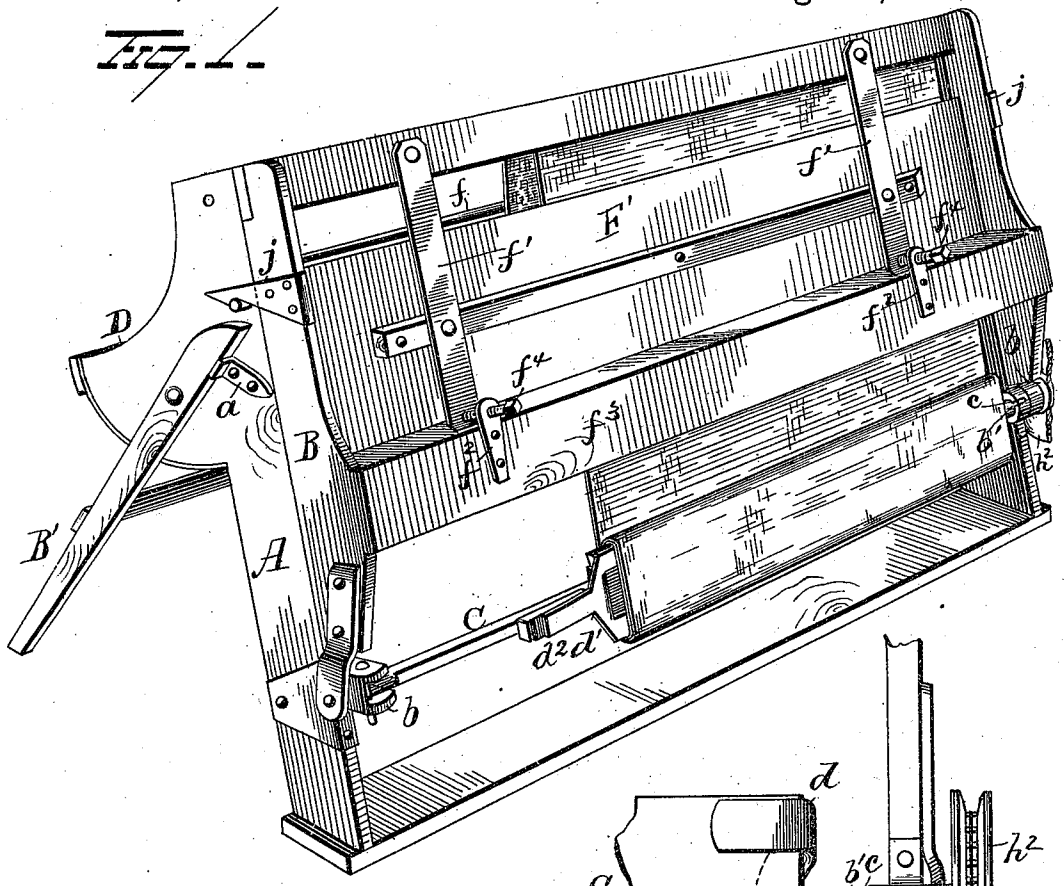

Fig. 3.

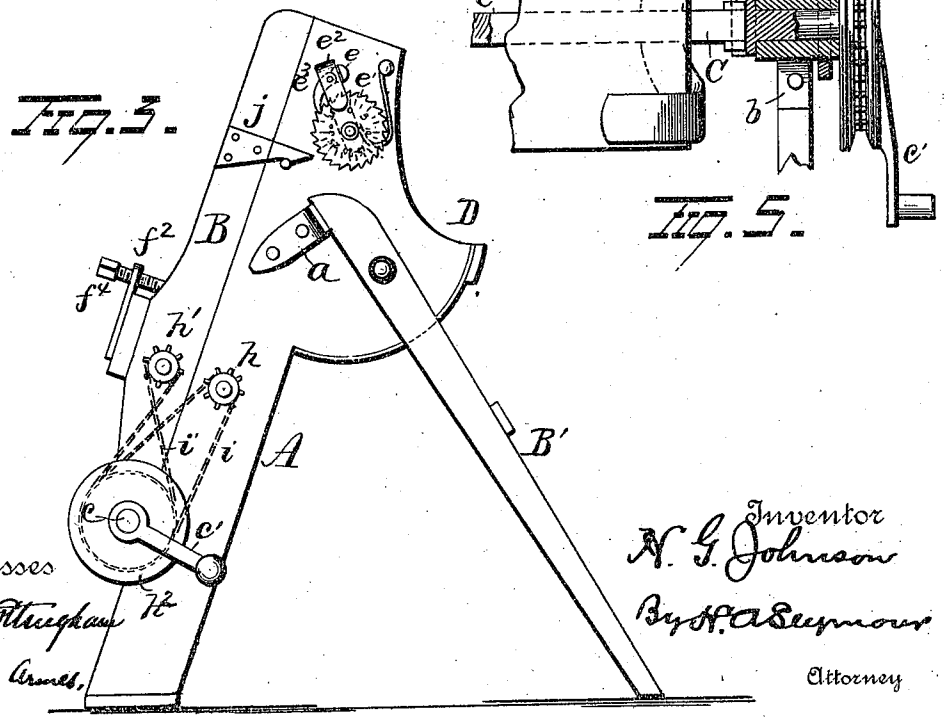

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

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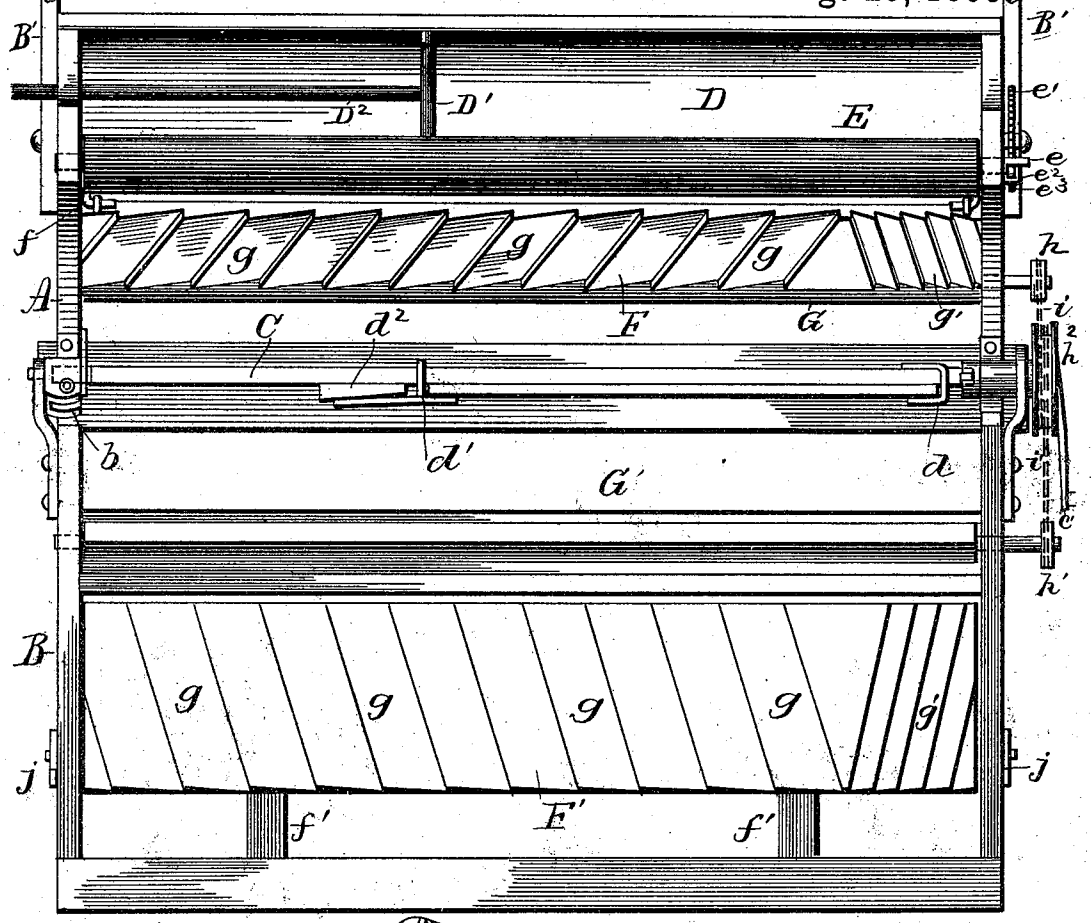
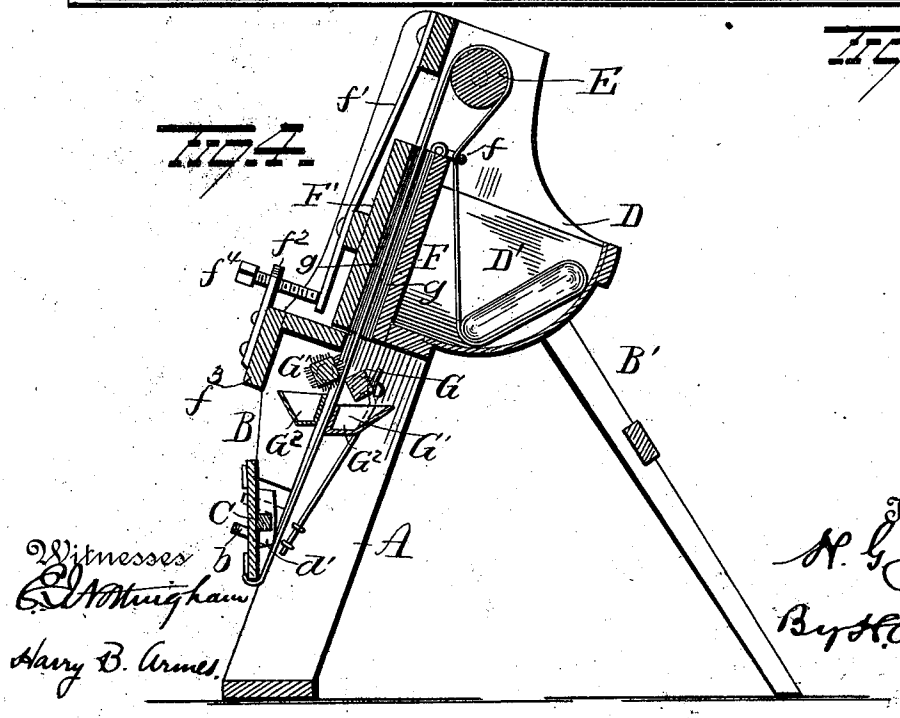


Fig. 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

HANS. G. JOHNSON, OF WAUKON, IOWA.

CLOTH-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 504,219, dated August 29, 1893.

Application filed May 4, 1892. Serial No. 431,760. (No model.)

To all whom it may concern:

Be it known that I, HANS. G. JOHNSON, of Waukon, in the county of Alamakee and State of Iowa, have invented certain new and useful Improvements in Cloth-Finishing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in cloth finishing machines,—its object being to produce a machine whereby cloth, ribbon, &c., can be rolled or bolted, cleaned and stretched,—which machine shall be simple in construction and effectual in the performance of its functions.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a plan view of the machine, open. Fig. 3 is an end elevation. Fig. 4 is a sectional view. Fig. 5 is an enlarged detail view.

A represents the main frame of the machine, and B a frame hinged at its lower end to the main frame, in proximity to the bottom thereof. The main frame A is supported in an upright position, by means of hinged props B′, which bear at their upper ends against stops *a*, secured to the frame *a*.

Supported by brackets secured to the frame A near its bottom, is a removable shaft C, angular in cross section, on which the cloth or ribbon is to be wound,—or more properly speaking, this shaft supports the block or board on which the cloth or ribbon is to be wound as presently explained. One end of the shaft C is removably mounted in the bracket *b* secured to the frame A, while the other end of said shaft is provided with laterally projecting ears *b′* and is adapted to enter a slot or recess in the enlarged head of a short shaft *c*, mounted in the bracket *b* at the other end of the machine. The short shaft *c* projects slightly beyond the end of the machine and is provided with a crank *c′*, or other means whereby to turn it and consequently the shaft C.

At the end of the shaft C nearest the short shaft *c*, a clamp *d* is secured and adapted to receive one end of the board on which the cloth is to be wound. A clamp *d′* is also mounted on the shaft C and adapted to have a sliding movement thereon and receive the other end of the board above referred to. The clamp *d′* is provided with a rearwardly projecting tongue, between which and the flat face of the shaft C, a wedge d^2 is forced. By these means the board on which the cloth is to be wound is secured to the shaft C and made to rotate therewith.

In the upper portion of the frame A a trough D is made, into which a bolt of cloth or ribbon is placed. A slide D′ is located in this trough and has a rod D^2 secured at one end to it, the other end of said rod projecting through one end of the trough, so that it may be grasped by the operator to move the slide D′, to suit any width of material being acted upon and thus prevent the endwise movement of said material.

In the top of the frame A above the trough D, a roller E is mounted. One end of roller E is preferably provided with an eccentric *e* and located in proximity to said eccentric is a registering wheel *e′* which has a toothed periphery, and is furnished with suitable indicating figures. On the same support which carries this wheel, a guard e^2 is loosely mounted and a pawl e^3 is pivoted to this guard. From this particular construction it will be seen that each revolution of the roller E will cause a slight movement of guard e^3 and consequently a similar movement of the pawl and a rotation of the toothed wheel one notch. These parts constitute a measuring device which forms a convenient part of the invention but which I do not claim herein.

Located in the frame A below the roller E, and extending from one end to the other thereof, is a board F, to the top edge of which a bracket or guide, *f* is loosely connected, said bracket *f* being adapted to guide the material in its passage from the trough D to the roller E. The board F is provided on its inner face with diagonal teeth *g*, *g′*, the teeth *g′* being preferably made smaller than the teeth *g* and are located at or near one end of the board,—said teeth *g′* being also disposed at the reverse inclination from the teeth *g*, the object of this

construction being to provide for stretching narrow as well as wide strips of cloth. These boards F and F′ are usually about three feet in length to accommodate the average width of cloth but as eighteen inches is likewise a standard width, by the construction employed cloth of that width may be operated upon with equal facility. If the teeth were of one size and the divide in the middle as heretofore and the cloth guided by the movable slide D′ of the machine, a narrow or eighteen inch strip would only traverse one set of teeth and the consequence would be that the strip would run off to one side. This tendency is counteracted by arranging the teeth as shown. Hence by having the divide near one end narrow strips are accommodated to the best advantage and in order to balance the pull on both edges as nearly as possible, it is desirable to provide as many teeth as can be at the short end as shown.

Instead of producing the teeth g, g' by cutting them in the material as shown in the drawings, they may be produced by means of wires or other strips secured to the face of the board. A board F′ is mounted in the hinged frame B and is provided with teeth g, g', on its inner face similar in all respects to the teeth g, g' on the board F,—said boards F, F′ being adapted to lie exactly parallel with each other when the machine is closed and ready for operation. The material after passing over the roller E, passes between the boards F, F′, and is properly stretched by the teeth g, g', thereon.

In order to allow for materials of varying thicknesses the board F′ is preferably mounted so as to yield, and the construction and arrangement of the parts for supporting said board F′ will now be explained. Two (more or less) spring plates f', are secured at their upper ends to the top of the frame B and at a point between their ends to the board F′ or a strip thereon, the free ends of said spring terminating in proximity to the lower edge of the board F′. Brackets f^2 are secured to the off-set portion f^3 of the frame B and provided at their upper ends with screwthreaded perforations for the reception of adjusting screws f^4, which latter bear at their forward ends against the lower ends of the springs f'. By this means the machine may be adjusted for various thicknesses of material, and means will be provided for regulating the tension of the toothed boards on the material passing between them.

Yieldingly mounted in the ends of the frame A immediately beneath the board F, is a cleaner or beater G adapted to beat or clean the cloth passing between the boards F, F′. This beater or cleaner is revolubly mounted in the frame A, and may consist simply of a shaft angular in cross section. Or, instead of a simple angular shaft, a revolving brush may be employed.

A beater cleaner G′ is mounted in the frame B directly opposite the beater or cleaner G. This beater or cleaner may also be a shaft, angular in cross section, or a revolving brush.

In the lower portion of the machine a trough or receptacle G^2 is located for the reception of the dust, lint, &c., cleaned or beaten from the cloth passing through the machine.

The ends of the journals of the cleaners or beaters G, G′, are extended somewhat beyond their bearings and provided with sprocket wheels h, h' respectively, and on the end of a short shaft c a larger sprocket or other wheel h^2 is secured, said wheels being geared together by means of suitable straps or chains i, i', whereby motion will be imparted to the revolving beaters or brushes during the operation of the machine. The bolt of cloth is first deposited in the trough D, the slide D′ adjusted, the cloth passed over the roller E, then extended down past the board F, and cleaner G and finally connected with the board on the shaft C as above explained. The frame B will then be folded up against the frame A (with the cloth between them) and locked by means of catches j. The machine is now ready for operation. The handle or crank c' is now turned (or the short shaft c rotated in some other manner) and the cloth will be wound upon the board on the shaft C,—its passage over the roller E causing a registration of the number of yards passing over the same,—its passage between the boards F, F′, causing it to be properly stretched, and its passage between the cleaners or beaters G, G′, removing all dust, lint, &c.

The machine is very simple in construction, easy and simple to operate and effectual in the performance of its functions.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with two frames, of a board carried by each frame, two series of inclined projections on each board, the teeth of one series wider than the teeth of the other, means for passing cloth or other material between said boards, a trough adapted to receive the bolt of cloth, and a slide in the trough forming a guide and abutment for one end of the bolt, substantially as set forth.

2. The combination with a pair of frames, of a board carried by each frame, one board rigid and the other yieldingly supported, said frames each having diagonal teeth, substantially as set forth.

3. The combination with two frames, of a stretching board in each frame, and means for yieldingly supporting one of said stretching boards, substantially as set forth.

4. The combination with two frames, of a stretching board secured in one of said frames, spring plates secured to the other frame and carrying a stretching board adapted to act in conjunction with the first mentioned stretching board, and means for regulating the tension of said springs substantially as set forth.

5. The combination with a pair of frames, of a board carried by each frame, one board

rigid and the other yieldingly supported, each board having diagonal teeth, a portion of said teeth narrower than the remaining teeth, substantially as set forth.

6. In a cloth finishing machine, the combination with two frames hinged together and adapted to permit the passage of cloth &c. between them, of rotary beaters or cleaners mounted in said frames and adapted to remove lint, dust, &c. from the material passing between them, substantially as set forth.

7. In a cloth finishing machine, the combination with two frames hinged together, of a rotary cleaner mounted in fixed bearings in one of said frames and a rotary cleaner mounted in yielding bearings in the other frame, and means for drawing material between said cleaners, substantially as set forth.

8. In a cloth finishing machine, the combination with two frames, of a rotary cleaner mounted in each frame, each of said cleaners being made angular in cross section, substantially as set forth.

9. In a cloth finishing machine, the combination with a frame, of a winding shaft, a clamp secured to one end thereof adapted to receive one end of the board on which the cloth is to be wound, a clamp movable on the shaft adapted to receive the other end of said board, a tongue projecting from the movable clamp and a wedge inserted between the said tongue and the shaft, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HANS. G. JOHNSON.

Witnesses:
J. C. CRAWFORD,
J. H. JOHNSON.