

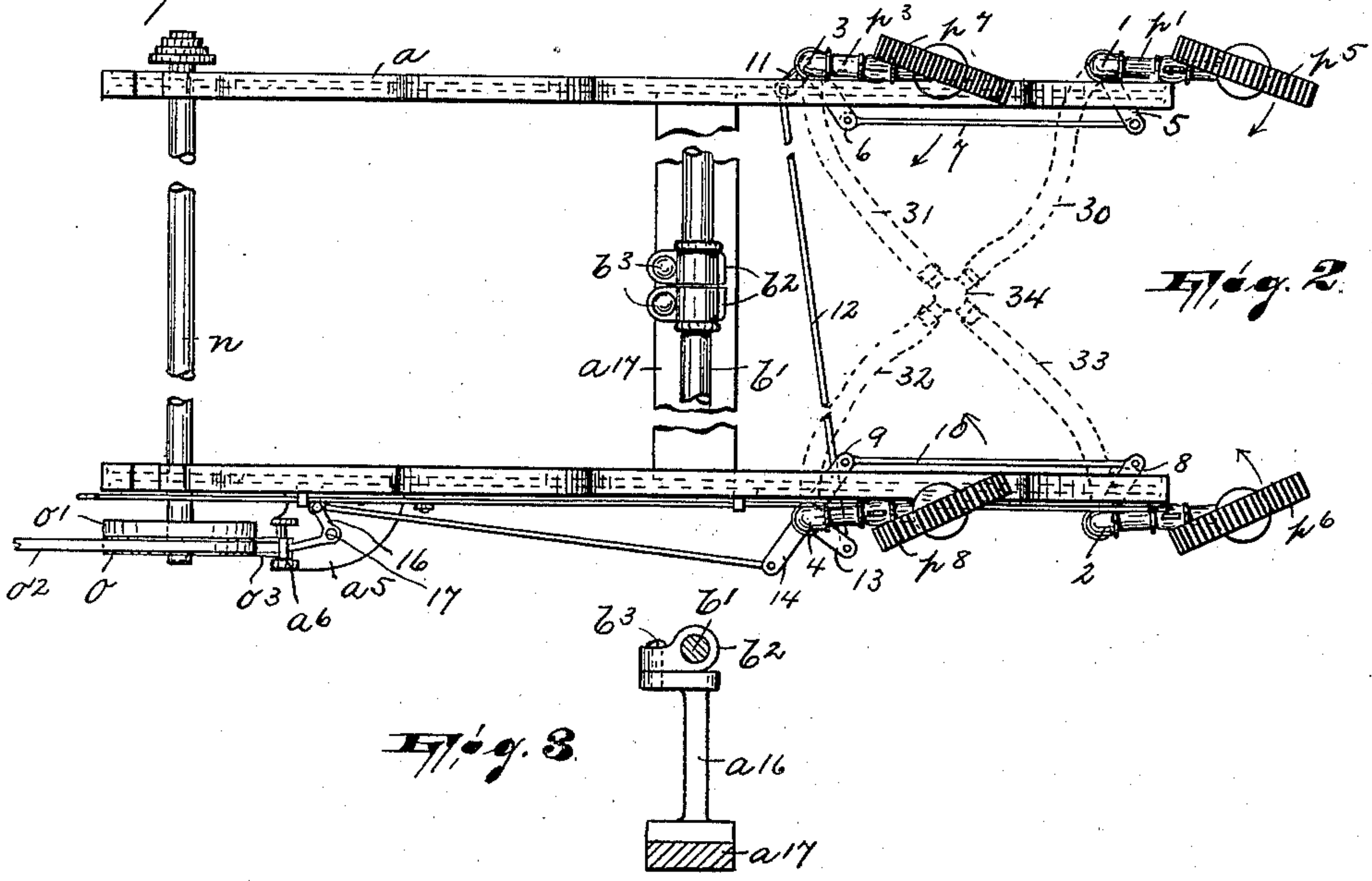
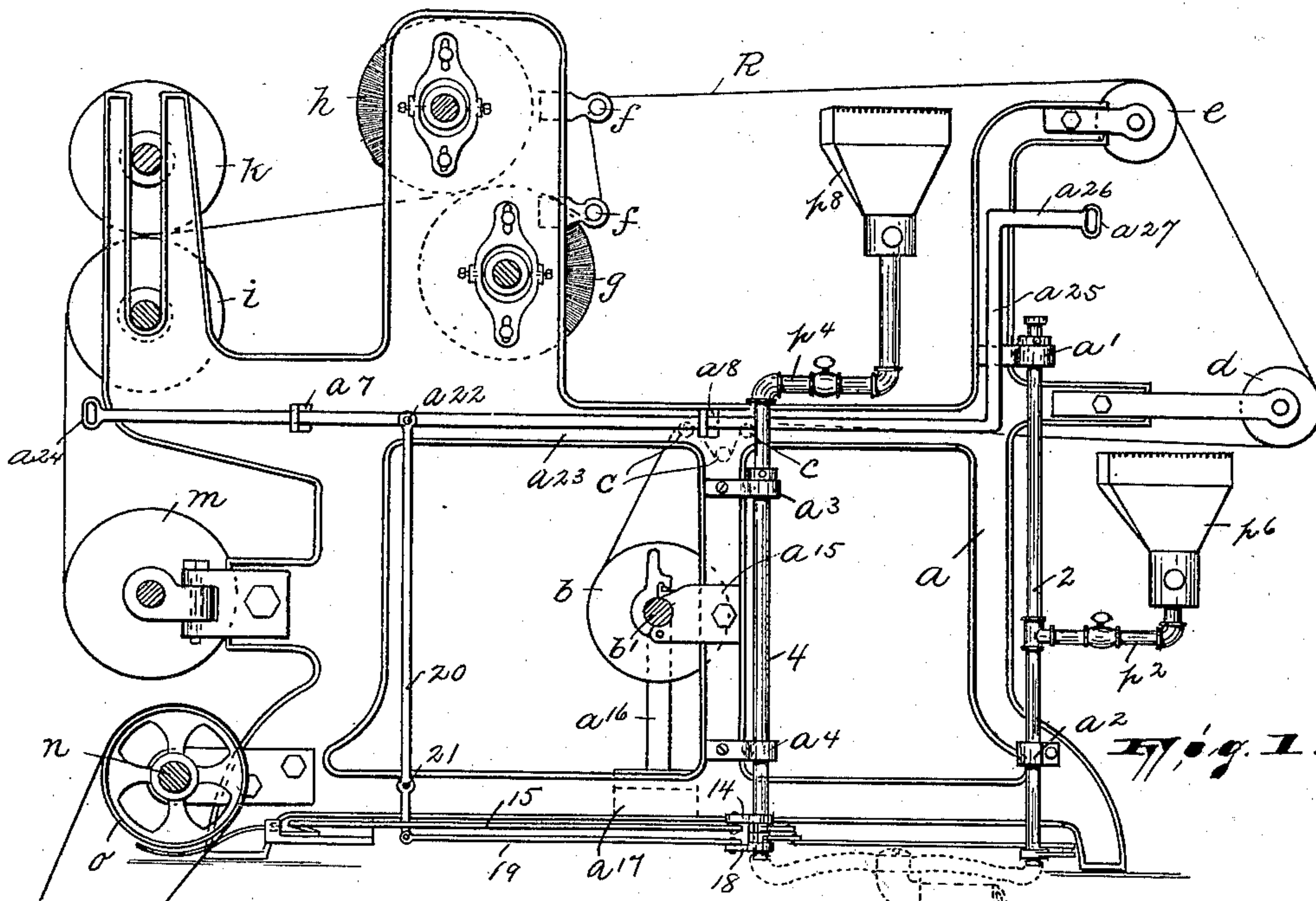
No. 639,493.

Patented Dec. 19, 1899.

R. ATHERTON.
SINGEING MACHINE.

(Application filed Aug. 16, 1899.)

(No Model.)



WITNESSES: _____ INVENTOR,
Wm. D. Bell
Robert J. Pollitt
Robert Atherton
BY
Garthner & Steward
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT ATHERTON, OF PATERSON, NEW JERSEY.

SINGEING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,493, dated December 19, 1899.

Application filed August 16, 1899. Serial No. 727,383. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ATHERTON, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Singeing-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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

15 The object of my present invention is to provide a singeing-machine with a series of burners which while the machine is being started or stopped are thrown simultaneously into or out of working engagement, as the case may be, with the ribbon or other fabric to be singed, the same being of simple, strong, and durable construction, reliable in operation, and easily controllable by the person operating the machine.

25 The invention consists in the arrangement of a series of adjustable and movable burners, the connection of said series of burners with a system of cranks and rods adapted to simultaneously operate the belt-shifting mechanism, and in the combination of parts substantially as will be hereinafter fully described, and finally embodied in the clauses of the claim.

35 In the accompanying drawings, Figure is a front elevation of a singeing-machine of ordinary construction with certain portions removed and provided with my improvements. Fig. 2 is a top plan view of Fig. 1, the ribbon or fabric carrying and supporting means not being illustrated; and Fig. 3 is a detail view of a certain shaft-supporting bracket.

40 In said drawings, *a* represents the frame, the sides of which are connected by a series of rods *c* and *f*.

45 *b* is the delivery-beam, removably arranged on a shaft *b'*, the inner end of which latter is mounted in the bearing *b''*, fulcrumed, as at *b'''*, to the top portion of a standard *a''*, projecting from a cross-bar *a'''* of the frame *a*.
50 The outer end of said shaft is removably arranged in the bracket *a''''*, secured to the frame *a* in any desired manner.

The rollers *d e*, the revolving brushes *g h*, the calendar-rollers *i k*, and the receiving-beam *m* are all of the usual well-known construction and are arranged in the frame *a* as indicated in Fig. 1. The ribbon *R* passes from the delivery-beam over and through the series of rods *c*, over the rollers *d e* and the rods *f*, between the brushes *g h*, and calendar-rollers *i k*, and onto the receiving-beam *m*, as will be manifest.

In the frame *a* is arranged the driving-shaft *n*, provided with a loose and fixed pulley *o* and *o'*, respectively, and operated through a belt *o''*, which is controlled by the forked belt-shifter *o'''*, slidably arranged on the horizontal pin or shaft *a''''*, which latter is supported in the bracket *a''''''* and is operated in a manner hereinafter described.

On each side of the frame *a* and supported in brackets *a'* *a''* and *a'''* *a''''* are fulcrumed a series of vertically-arranged gas-pipes 1 2 and 3 4, respectively, connected at their lower ends by pipes or rubber hose 30, 31, 32, and 33 with the main gas-pipe 34, as indicated in dotted lines in Fig. 2. Each of said pipes 1, 2, 3, and 4 is provided with a horizontally-arranged branch pipe *p'*, *p''*, *p'''*, and *p''''*, on the upwardly-extending end portions of which are arranged the gas jets or burners *p''''''* *p''''''''* and *p''''''''''*, respectively. The branches *p'*, *p''*, *p'''*, and *p''''* are of such length as to bring their respective burners, after being swung inwardly, directly under the ribbon or fabric to be singed, as will be manifest.

On the gas-pipes 1 and 3 are secured the horizontally-arranged parallel crank-arms 5 and 6, connected by the rod 7, while the horizontally-arranged parallel crank-arms 8 and 9, which are secured on the gas-pipes 2 and 4, are connected by the rod 10.

Substantially at right angles to the crank-arms 6 and 9 and secured to their respective gas-pipes 3 and 4 are the crank-arms 11 and 13, respectively, connected by the rod 12. Said crank-arms 11 and 13 are so arranged on their respective gas-pipes that they are turned in opposite direction with relation to the machine—that is to say, so that all the burners will be swung simultaneously to and from the center of the machine, as indicated by the arrows in Fig. 2.

On the gas-pipe 4 are also secured and sub-

stantially at right angles to the arm 13 the crank-arms 14 and 18, the former one of which is connected by the rod 15 with one arm of the angle-lever 16, fulcrumed, as at 17, to the bracket a^5 and adapted to operate with its other arm the belt-shifter o^3 . The other crank-arm, 18, is pivotally connected by means of the rod 19 with one end of the vertically-arranged lever 20, fulcrumed, as at 21, to the frame and pivotally secured, as at a^{22} , to the reciprocating horizontally-arranged bar or rod a^{23} . The latter is guided in the brackets a^7 and a^8 and is provided at its rear portion with the looped handle a^{24} and at its front portion (which is bent upward and forward, as at a^{25} and a^{26}) with the looped handle a^{27} . By bending said front portion in the manner described the handle a^{27} will not become hot when the burner is returned to its normal position, as in Fig. 2.

When the bar a^{23} is pushed backward, the lever 20 is operated and through its connecting-rod 19 operates the crank-arm 18, and thus the gas-pipe 4, and as said gas-pipe is connected by the system of cranks and rods, hereinbefore described, with the other gas-pipes they are all turned until their respective burners are beneath the fabric or ribbons to be singed. Simultaneously the angle-lever 16 is swung on its fulcrum by means of the connecting-rod 15 and crank 14, and thus the belt-shifter is operated—that is to say, the belt o^2 is thrown from the loose pulley o onto the fixed pulley o' , whereby the machine is started, which causes the ribbon to travel from the delivery-beam onto the receiving-beam in a manner before described.

By pulling the bar forward the burners are swung outward to their normal positions and the machine is simultaneously stopped, as will be manifest.

The machine illustrated in the drawings is a so-called "double" singeing-machine—that is to say, two fabrics or ribbons are arranged side by side and are singed simultaneously; but it will be manifest that other singeing-machines can be provided with my improvement and that various alterations can be made thereon without changing the scope of my invention.

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

1. In a singeing-machine, the combination, with the frame, the fabric-carrying means, the main driving-shaft carrying a fixed and loose belt-pulley, and with the belt-shifter, of a series of vertically-arranged gas-pipes fulcrumed in said frame, a burner or jet carried by each of said pipes, a series of crank-arms on one of said gas-pipes, a rod pivotally connected to one of said crank-arms, a fulcrumed vertically-arranged lever pivotally connected at its lower end to the free end of said rod, a reciprocating bar guided in the frame and pivotally connected to the upper portion of the fulcrumed lever, a rod pivotally connected to one of said crank-arms and adapted to operate the belt-shifter, and means for connecting the gas-pipes with each other in such a manner that they are swung simultaneously toward or from the center of the machine, substantially as described.

2. In a singeing-machine, the combination, with the frame, the fabric-carrying means, the main driving-shaft, the fixed and loose pulley on said driving-shaft, and with the belt-shifter, of a fulcrumed angle-lever connected with one arm to said belt-shifter and adapted to control the same, a series of vertically-arranged gas-pipes fulcrumed in said frame and on each side of the machine, a crank-arm secured on each of said gas-pipes, a rod on each side of the machine and pivotally connecting the respective crank-arms, a crank-arm secured to one of the series of gas-pipes on each side of the machine, a rod traversing the machine and connecting said crank-arms, a reciprocating bar arranged horizontally on one side of the machine and guided in brackets on the frame, a fulcrumed lever pivotally connected with its upper end to said bar, a rod pivotally connected to the lower end of said lever, a crank secured to one of said gas-pipes and connected with said rod, and means connected with said gas-pipe to operate the angle-lever, all said parts substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of July, 1899.

ROBERT ATHERTON.

Witnesses:

ALFRED GARTNER,
LOUISE SMYDER.