(No Model.)

2 Sheets—Sheet 1.

A. CREW.

MACHINE FOR FINISHING SILK FABRICS.

No. 332,235. Patented Dec. 15, 1885.

Fig 1

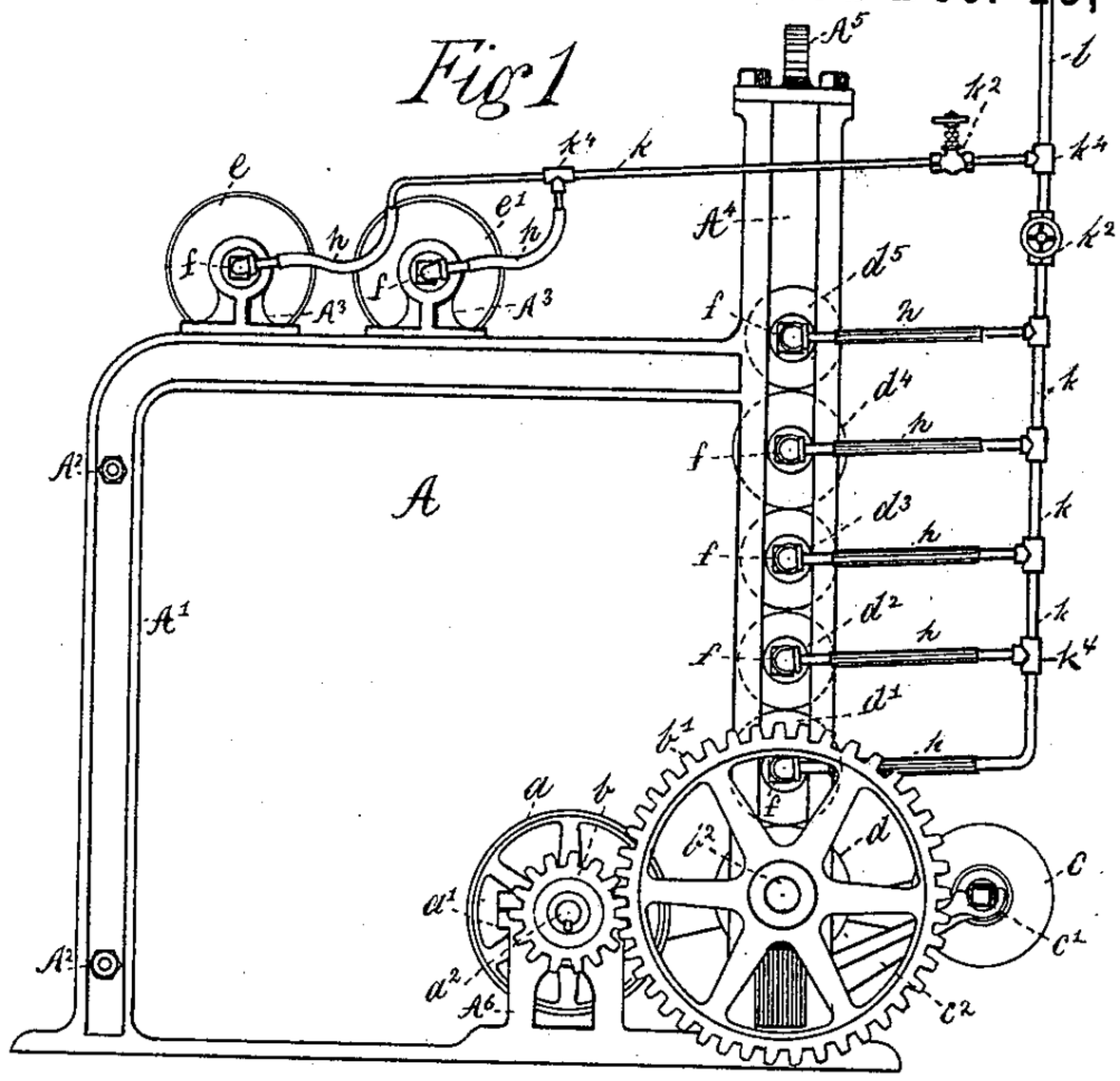


Fig 2

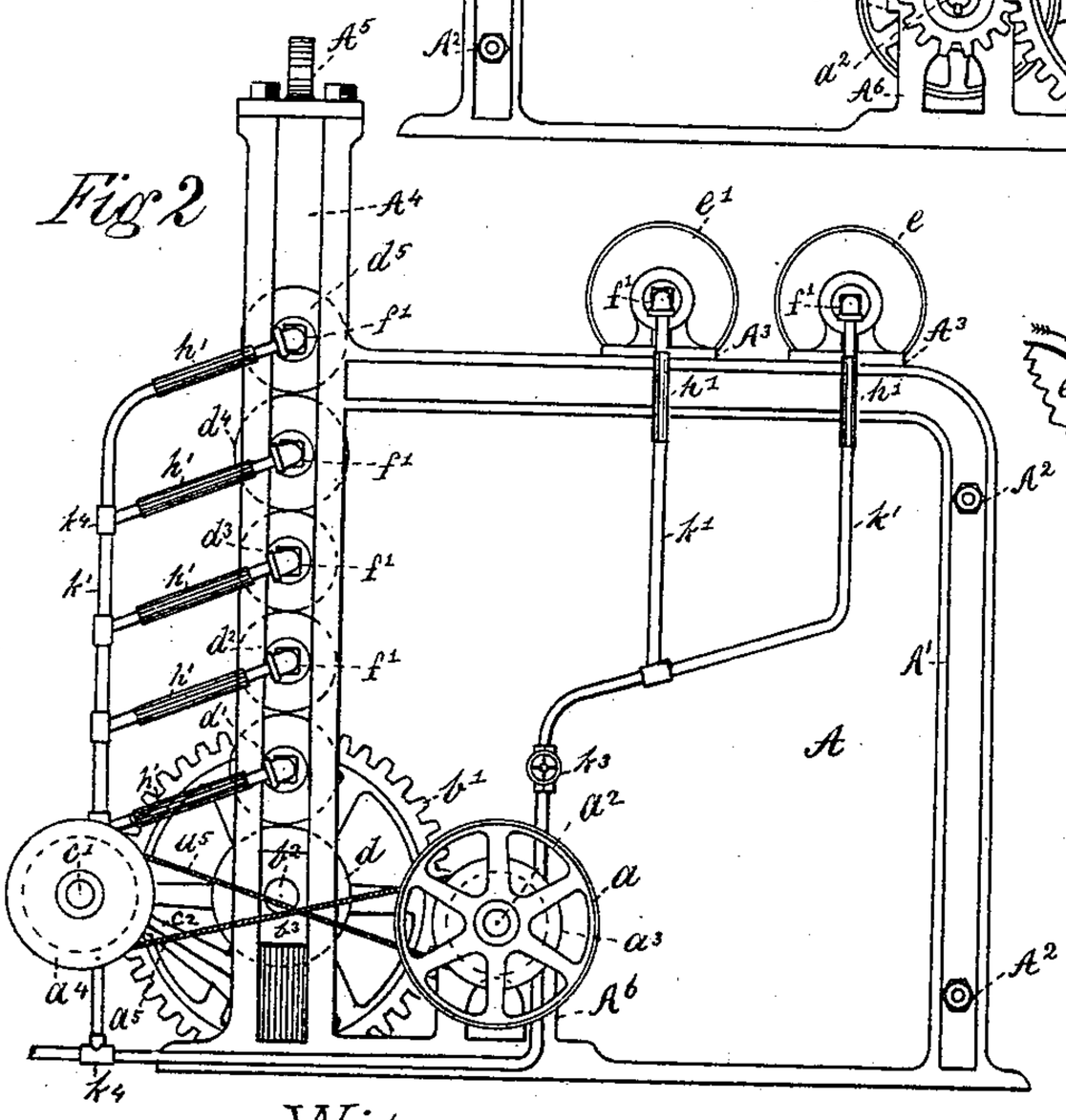
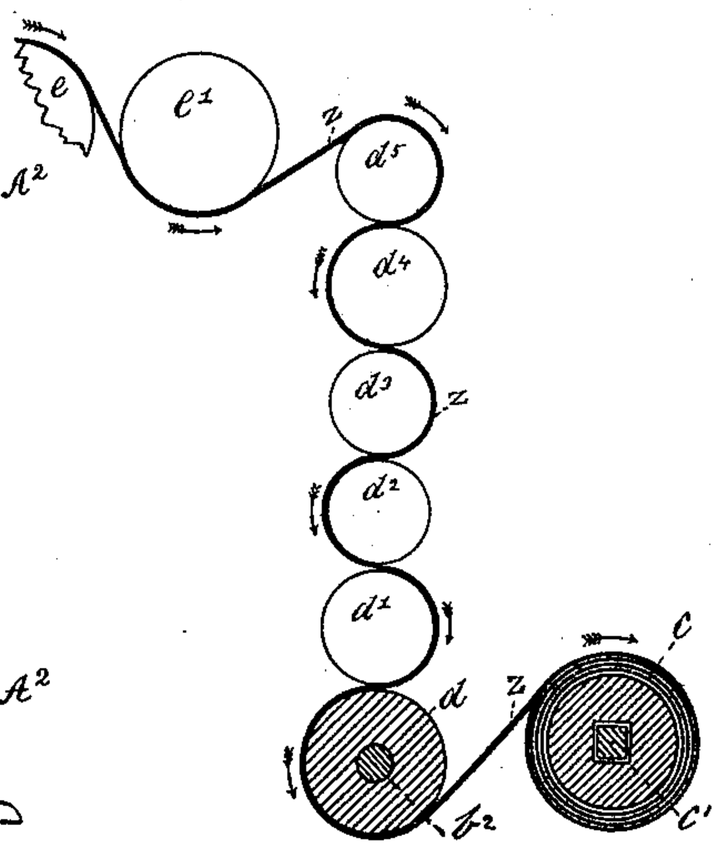


Fig 4



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

A. CREW.

MACHINE FOR FINISHING SILK FABRICS.

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Fig 3

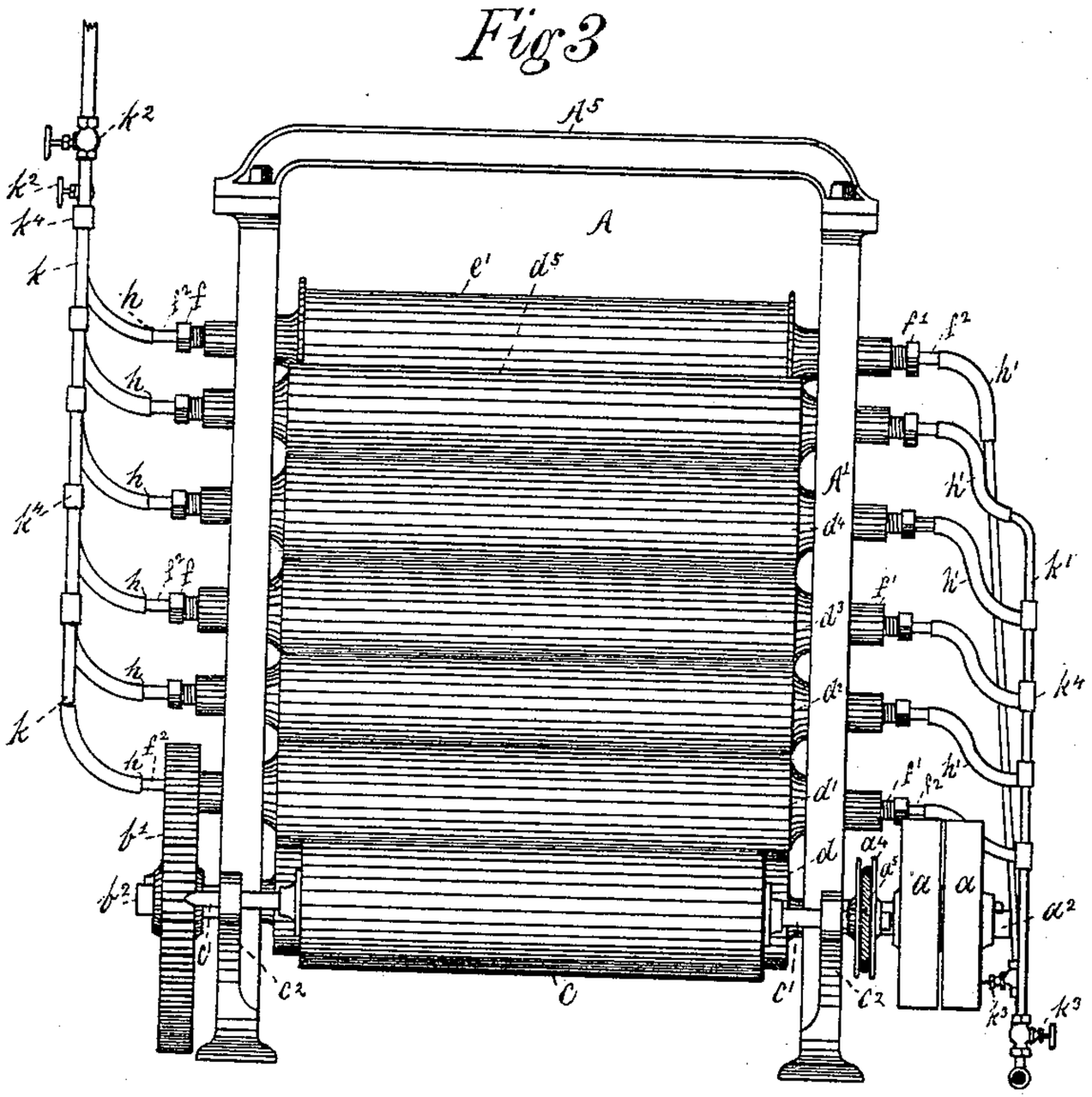
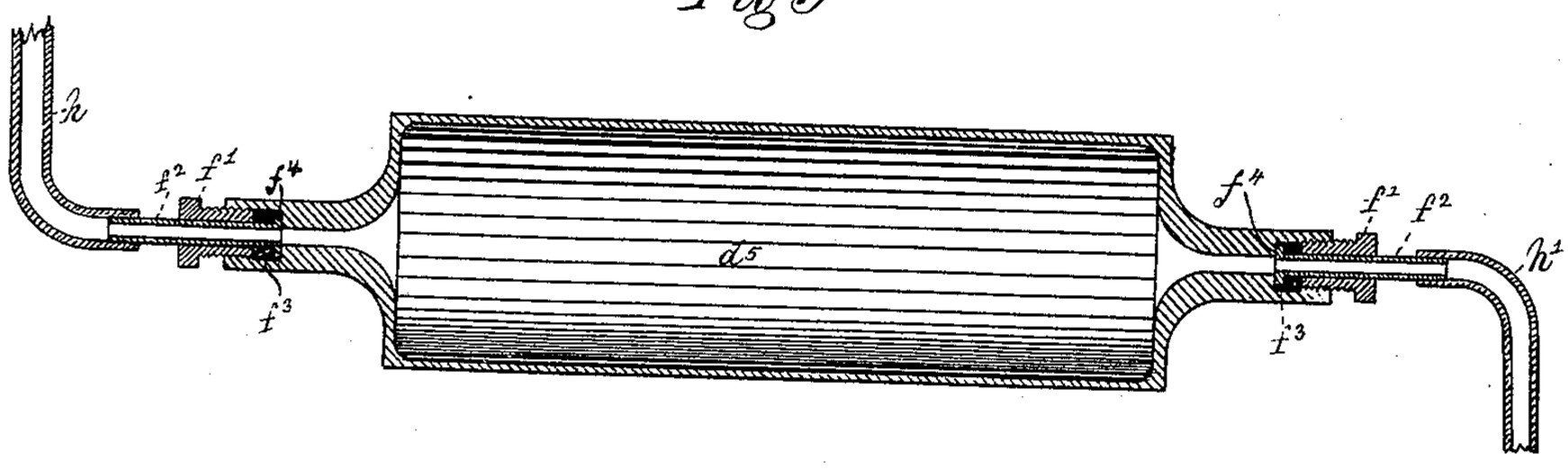


Fig 5



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UNITED STATES PATENT OFFICE.

ALFRED CREW, OF PATERSON, NEW JERSEY.

MACHINE FOR FINISHING SILK FABRICS.

SPECIFICATION forming part of Letters Patent No. 332,235, dated December 15, 1885.

Application filed August 9, 1884. Serial No. 140,142. (No model.)

To all whom it may concern:

Be it known that I, ALFRED CREW, a subject of Queen Victoria, residing at Paterson, Passaic county, State of New Jersey, have invented a new and useful Improvement in Machines for Finishing Silk Fabrics, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

Silk goods heretofore have been taken from the loom on the cloth-beam and placed on a frame in common with a roll of paper. The goods and paper are then unwound from their respective rollers, and are taken together to a steam-roller on the opposite end of the frame. The goods, having been moistened on the way to the said steam-roller, are taken over and partly around the said heated roller in common with the paper to a receiving-roller below, on which the goods and paper are wound, the goods being wound up in the paper on the receiving-roller, to remain in the paper until the goods are dried by the warmth the paper received in its contact with the steam-roller. The receiving-roller, when filled with paper and goods, is removed, and a duplicate receiving-roller is put in its place to continue the finishing. One or more duplicates may thus be filled, according to the number of such duplicates kept on hand. Should the paper have been insufficiently warmed by the roller in its contact therewith to dry the goods promptly, owing to a want of heat in the roller, or should the temperature of the room be such as to cool the paper after it leaves the steam-roller and before it reaches the receiving-roller, then, and in either case, the goods would have to remain on the rollers longer than calculated upon, and the further finishing would be delayed. The paper used for drying the goods, after the same has been used a few times, becomes rough and unfit for further use, which makes the finishing expensive.

The object of my invention is to provide a machine for finishing silk fabrics wherein handkerchiefs, dress-goods, &c., will be delivered by the machine to the receiving-roller perfectly dried without delay and without the use of paper, and having a higher degree of finish. These objects I attain by the construction shown, which will be hereinafter explained and claimed.

Figure 1 of the drawings shows one end of the machine in elevation, with steam pipes, rollers, &c., in position, the top of the steam-pipe being removed. Fig. 2 shows the opposite end of the machine in elevation, with rollers, exhaust-pipes, &c., in position. Fig. 3 shows the front of the machine in elevation, in which figure the steam and exhaust pipes and their connection with the rollers is more fully shown, the top of the steam-pipe being removed. Fig. 4 is a diagram showing the rollers employed in the machine, the course of the goods through the machine, two of the rollers being represented in section; and Fig. 5 is a longitudinal section of steam-roller, showing steam and exhaust connections.

A represents a silk-finishing machine constructed and having a frame, A′. The frame, which is made of metal, is secured at the back of the same by bolts A^2. Said bolts, running across the frame, are secured in the standards thereof by jam-nuts on both sides of the standards, which firmly hold the rear portion of the frame of the machine together. The front standards of said machine have arranged in them vertical slots A^4, and are secured together by means of a curved cross-bar, A^5, that is bolted to the top thereof, and by which the front portion of the machine-frame is secured together. At the bottom of the slots A^4 in the front standards are arranged bearings b^3, in which bearings is journaled a shaft, b^2, said shaft having thereon a wooden roller, d, and on one end of the same a gear-wheel, b'. In standard-bearings A^6, that are integral with the frame of the machine, is journaled a driving-shaft, a^2, having on one end of the same a pinion, b, that gears with a gear-wheel, b'. The opposite end of the shaft a^2 has arranged thereon driving-pulleys a a and band-pulley a^3. In bracket-bearings c^2, secured to the front of the machine, is journaled a receiving-roller, c, having a shaft, c'. On one end of said shaft is secured a grooved band-pulley, a^4, having a band, a^5, which band connects with band-pulley a^3, secured on the driving-shaft a^2. In the slots A^4 of the front standards, A′, is arranged one above another a series of steam-rollers. The first of the series, d', is made of copper, and is supported by the roller d. The next of the series above, d^2, is made of iron, and is supported by the next below. d^3 is

an iron roller, and is supported by the next below. d^4 is a copper roller, and is supported by the next below. d^5, the last of the series, is an iron roller, and is supported by the next below. In standard-bearings A^3, arranged on the back part of the machine, are journaled steam-rollers e and e'.

The several steam-rollers mentioned are all provided with steam-packing connections composed of a screw, f', pipe f^2, having collar f^4, and packing-fillet f^3, as shown, and the rollers connect at one end of the same with a steam-pipe, k, by means of T connecting-joints k^4 and flexible tubes h, which tubes are adapted to fit the pipe-connections and render the same tight in the well-known way. The exhaust-pipe k' connects with the steam-rollers by means of T connecting-joints k^4 and flexible tubes h'. The exhaust-connections are provided with considerable descent between roller and pipe to carry away from the roller to the pipe the water of condensation, which passes through the valve-connection k^3 to its destination. The steam-pipe k is provided with the usual valve and wheel, k^2, for regulating the supply of steam passing therethrough to the rollers.

The steam and exhaust connections are shown in a curved position in Fig. 3 as to the series of rollers, while in the other figures they are shown as being straight. Either will answer equally well. That portion of the shaft c' occupied by the roller c is made square to accommodate a square opening that runs through the roller. This construction of the roller and its shaft, while it secures the roller to the shaft for rotation, admits of the roller's removal from the shaft when desired.

The operation is as follows: The shaft a^2 is put in motion by the usual means employed therefor, and by means of pinions b b', band-pulley a^3, a^4, and band a^5 rotates the roller d and receiving-roller c. The roller d, having been put in rotation in the manner stated, actuates the entire series of rollers, each one of the series depending on the next below for its motion. The steam is introduced into the steam-rollers from the pipe k by turning the valve-wheel k^2. The steam having been introduced into the steam-rollers in the manner stated, its action on the inner surfaces of said rollers heats the same. The goods z is unrolled from the cloth-beam, taken from the loom, arranged on a preparatory frame, where the goods are prepared for the finishing-machine by being moistened by jets of steam, (not a part of my invention.) After being moistened and prepared for the finishing-machine, the goods are taken forward to the roller e, and over said roller down under the roller e', upward over and partly around roller d^5, under said roller d^5, partly around d^4, and under said roller and partly around the roller d^3, and under said roller and partly around roller d^2, under said roller to and partly around roller d', the last of the series of steam-rollers, under said roller d', partly around roller d, and from thence to the receiving-roller c, on which the goods z are wound, the same having been highly finished and dried while in contact with the heated rollers. Said rollers, having smooth heated surfaces, are adapted thereby to impart a glossy finish to the goods. When filled with the finished goods, the roller c may be removed, and a duplicate roller put in its place to continue the finishing. The removed goods having been thoroughly dried while passing under and around the steam-rollers, the same is ready to be cut, folded, &c.

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

1. The combination, with the series of steam-rollers d', d^2, d^3, d^4, and d^5, as described, of the frame A', having the slots A^4, for guiding the rollers, the roller d, for rotating and supporting the series of rollers, the gear-wheel b', the pinion b, the shaft a^2, shaft b^2, the pulleys a of the roller e, the roller e', for carrying the goods to the series of rollers, the steam-pipe k, the flexible tubes h, the packing-joints f' f^2 f^3, as described and shown, the T connecting-joints k^4, for introducing the steam into the rollers, the valve k^2, exhaust-pipe k', the tubes h^4, connections f' f^2 f^3, connection-valve k^3, for carrying from the rollers the water of condensation, the bearings A^3, the bearings A^6, and bearings b^3, substantially as described.

2. The combination, with the series of steam-rollers, frame A', having slots A^4, and roller d, of the roller c, for receiving the goods, the grooved pulleys a^3 a^4, the band a^5, for actuating roller c, the shaft a^2, for actuating pulley a^3, the pulleys a, the gear-wheel b', the shaft b^2, the pinion b, for rotating the wheel b' and roller d, the brackets c^2, for supporting and journaling the shaft c', the shaft c', the bearings A^6, the bolts A^2, for securing the side frames, A, together, substantially as described, and for the purpose set forth.

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Witnesses:
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