

(No Model.)

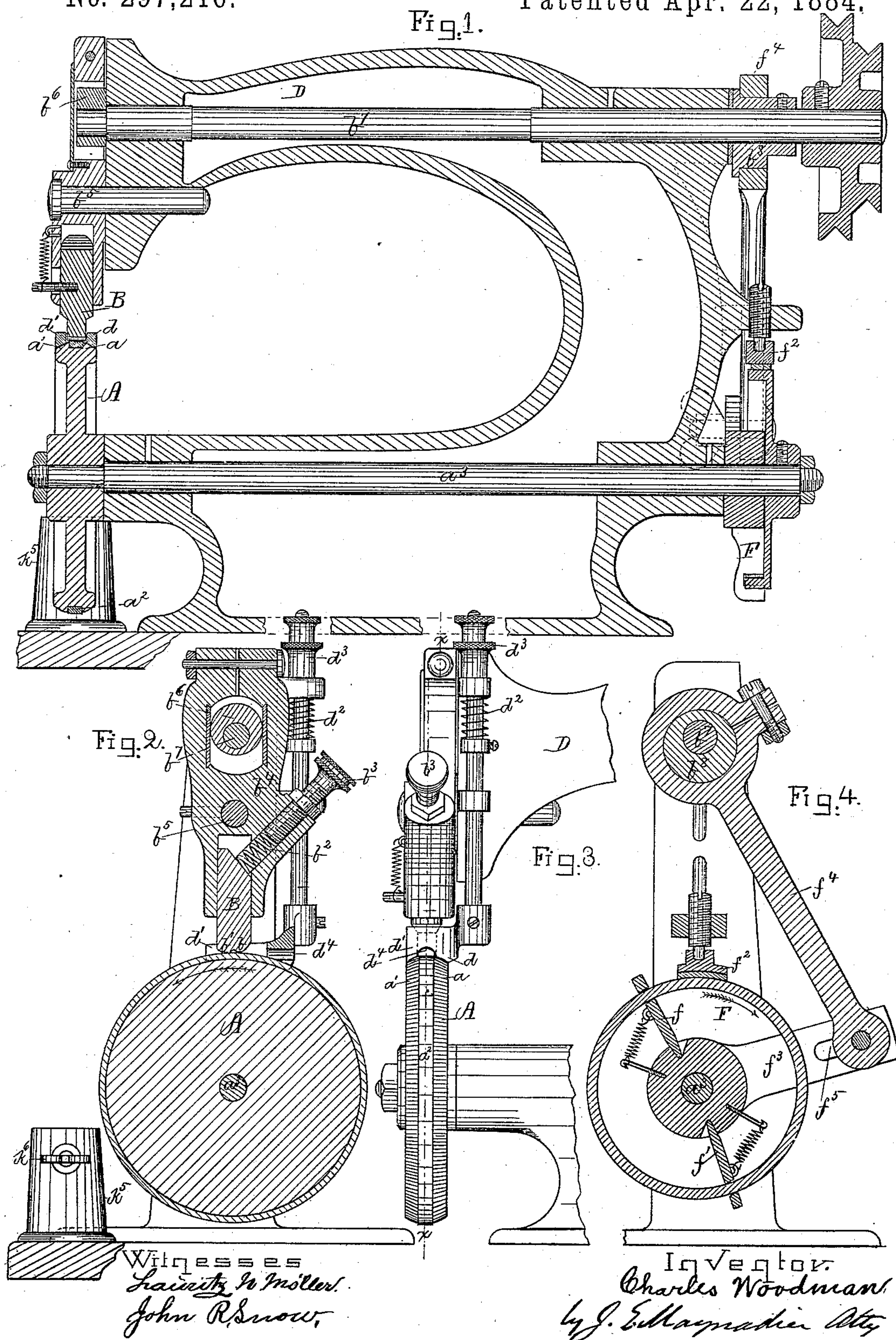
2 Sheets—Sheet 1.

C. WOODMAN.

SEAM FINISHING MACHINE.

No. 297,216.

Patented Apr. 22, 1884.



(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

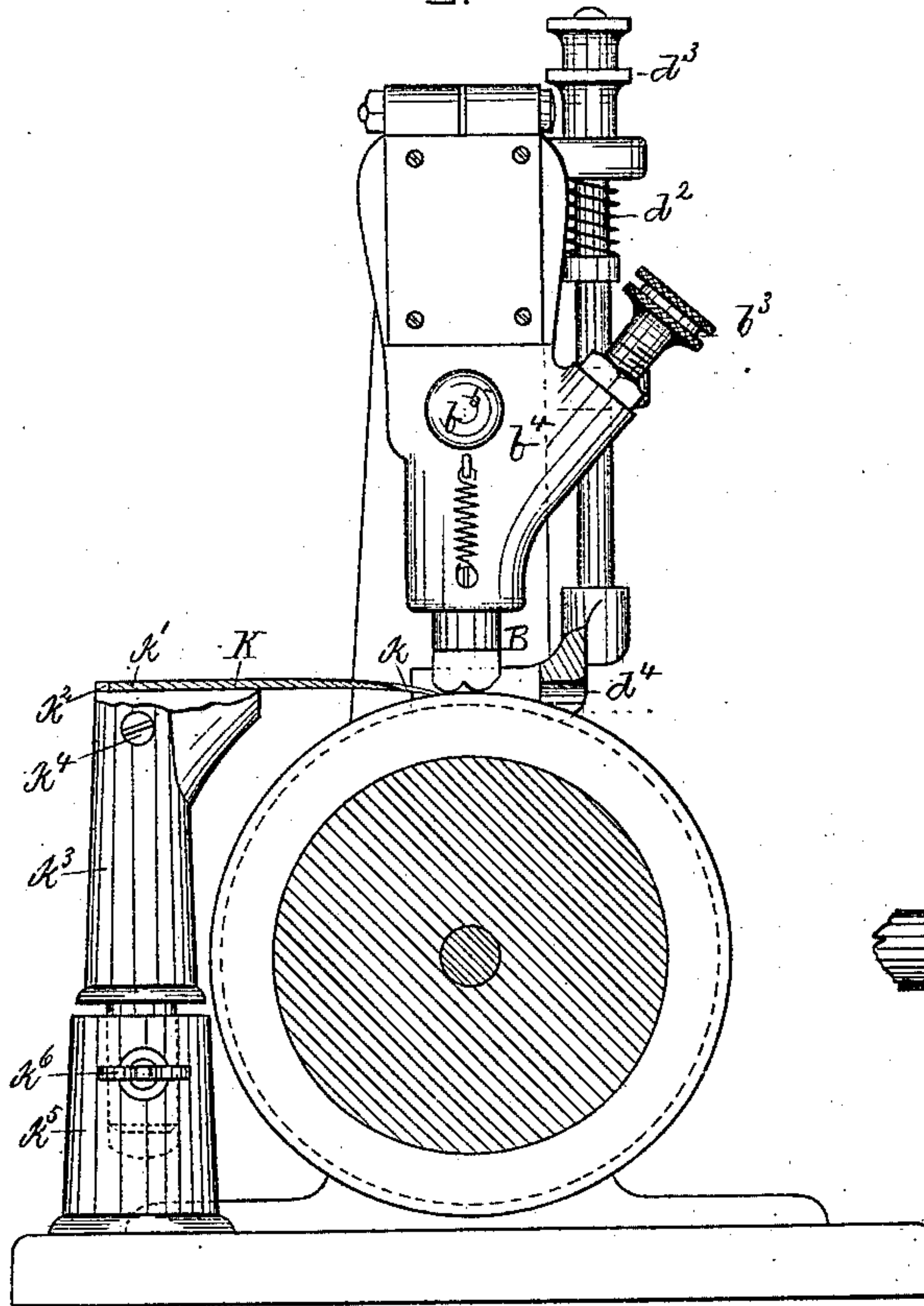


Fig. 7.

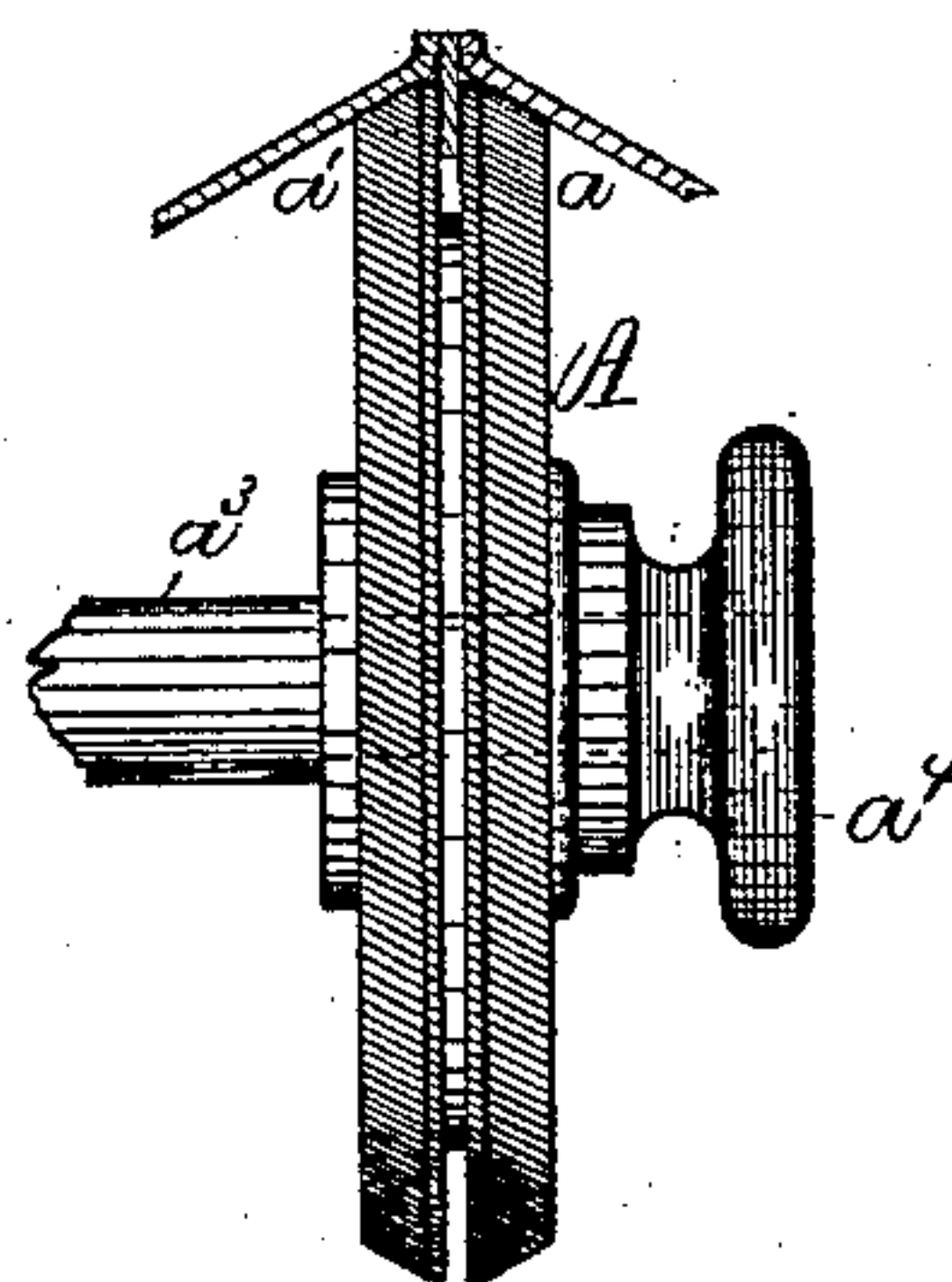
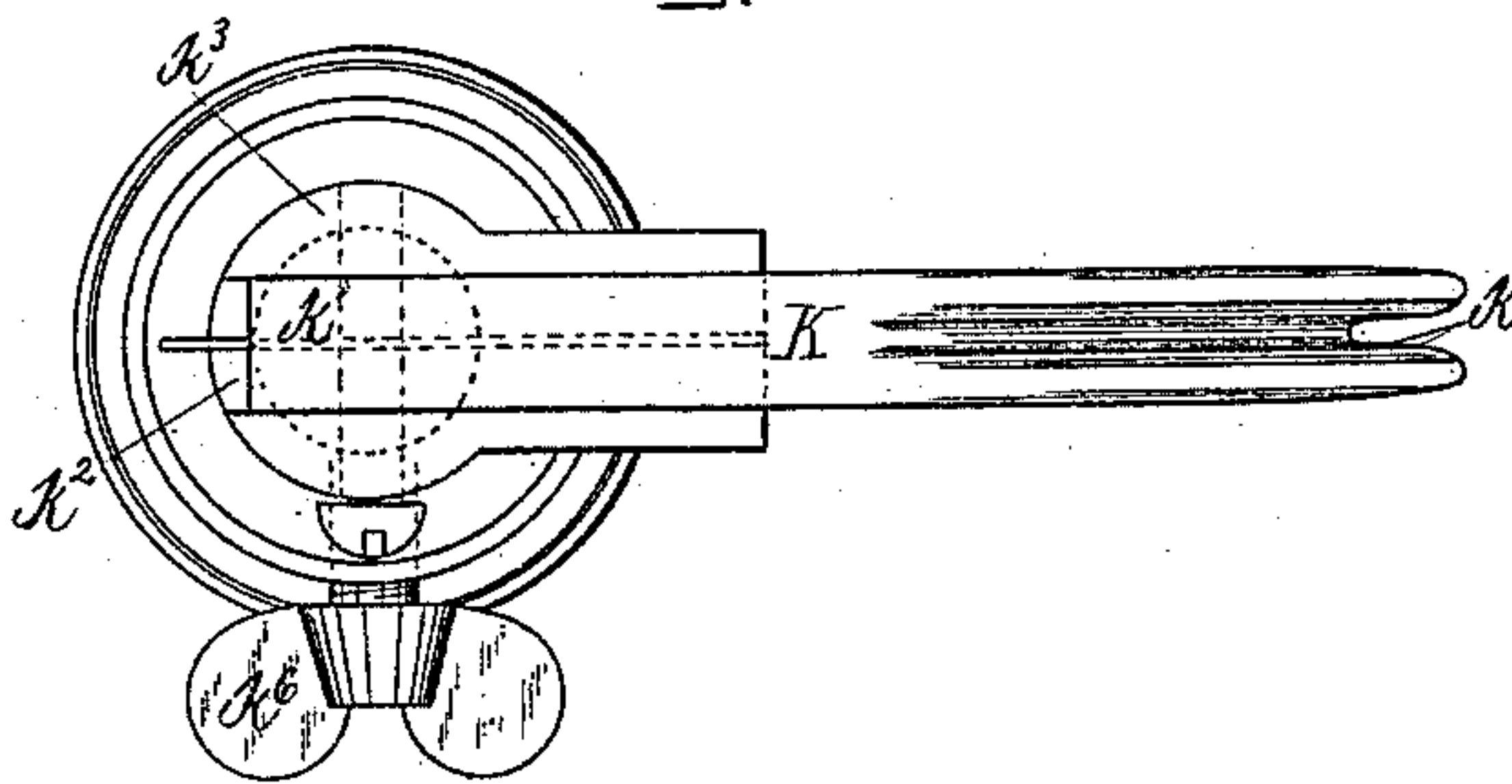


Fig. 6.



Witnesses.

Lauritz W. Möller.
John R. Snow.

Inventor

Charles Woodman
by J. E. Maynard
his attorney.

UNITED STATES PATENT OFFICE.

CHARLES WOODMAN, OF CHELSEA, ASSIGNOR OF ONE-HALF TO CHARLES S. FIFIELD, OF BOSTON, MASSACHUSETTS.

SEAM-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 297,216, dated April 22, 1884.

Application filed January 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WOODMAN, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Seam-Finishing Machines, of which the following is a specification.

My invention relates to improvements in machines for flattening, smoothing, and finishing seams formed by sewing together two pieces of leather or like material with or without an interposed piece or welt between them.

In making seams, especially in boot and shoe making, a strip known as a "welt" is often inserted between the two pieces to be sewed together, and a seam-finishing machine must be adapted to finish such seams as well as the usual plain seam.

My improvements consist in a presser-foot and a rubbing-tool of novel construction arranged to better act on the material and seam, and in a knife adapted to be attached to the machine for trimming the welt, and in the general arrangement of the parts, as hereinafter fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section through a seam-finishing machine embodying my invention. Fig. 2 is a cross-section on line $x x$ of Fig. 3, which is a side elevation, showing the feed-wheel, presser-foot, rubbing-tool, and parts of the machine that support them. Fig. 4 is a cross-section through the feed-actuating mechanism. Fig. 5 is a front elevation, showing the welt-trimming knife in position. Fig. 6 is a plan of the welt-trimming knife and its support on a larger scale; and Fig. 7 shows two pieces joined with a welted seam in position on the feed-wheel, the seam having been acted on by the rubbing-tool and the welt ready for being acted on by the trimming-knife.

The wheel A, on which the stock or material is supported and by which it is fed to the rubbing-tool B, is shown with its rim beveled on each side. These beveled sides $a a'$ form two surfaces, upon which the material at each side of the seam rests, and is held thereon by a presser-foot mounted on an overhanging arm, D, and provided with two pressers, $d d'$, which are forced down by a spring, d^2 , the

tension of which may be adjusted as desired by the screw d^3 . The periphery of the wheel A may be formed to present two supporting-surfaces by being suitably crowned, instead of beveled, as shown, the presser-foot being correspondingly shaped to make the proper fit. The apex of the periphery of the wheel A is grooved to allow a welted seam to be provided, the groove serving to receive the welt-piece. When a plain seam is to be finished, a tire or band, a^2 , of some material, preferably leather, is inserted in the groove to prevent all danger of marring the stock. If plain seams alone are to be finished, the groove may be dispensed with and the apex of the periphery of the wheel be made smooth. The material is properly held and guided to bring the seam to the action of the rubbing-tool B by means of the wheel A and a groove, d' , formed in the presser-foot between the pressers $d d'$. These pressers $d d'$ extend on either side and beyond the rubbing-tool B, and firmly hold the stock to the action of the rubbing-tool which reciprocates between them. The rubbing-tool B has two faces, $b b'$. The face b is farther from the periphery of the feed-wheel A, comes first in contact with the seam, and partially flattens and rubs it preparatory to the finishing action of the face b' . These rubbing-faces $b b'$ are held to their work by a spring, b^2 , the tension of which is adjusted by means of a screw-bolt, b^3 . The tool B is inserted in one end of lever b^4 , pivoted at b^5 to the main frame, and adapted to receive at its other end an eccentric, b^6 , secured to a shaft, b^7 . The shaft b^7 is adapted to be revolved, and the eccentric b^6 , revolving with it, causes the lever b^4 to oscillate, and thereby impart the desired motion to the rubbing-tool B. The wheel A is secured to a shaft, a^3 , which is revolved, preferably intermittently, so as to afford more time for the rubbing-tool to act on each part of the seam, by means of a wheel, F, also secured to the shaft a^3 , and which is intermittently rotated by the usual mechanism, consisting of arms $f f'$, which are adapted to move in one direction without overcoming the friction of a brake, f^2 , bearing on the wheel F, but which cannot move in the other direction without carrying the wheel F with them. The arms $f f'$ are actuated by a lever, f^3 , support-

ed by but moving freely on the shaft a^3 . A reciprocating vibratory motion is imparted to the lever f^3 , and consequently to the arms ff' , by means of a crank or eccentric, b^8 , fast to the shaft b^7 , and connected with the lever f^3 by a rod, f^4 . To regulate the feed, the rod f^4 is adjustable in the slot f^5 in the lever f^3 , and the nearer the rod f^4 is to the axis of the shaft a^3 the greater will be the stroke of the arms ff' , and consequently the greater the feed.

In operation, the two pieces of material stitched together are placed on the two surfaces of the periphery of the wheel, and are pushed up, one piece under one presser and the other piece under the other presser, so as to bring the apex of the wheel into the seam and the end of the seam close to the higher face of the rubbing-tool. The intermittent motions of the wheel feed the seam to the action of the vibrating rubbing-tool, which flattens and rubs the seam, first partially by its higher face and then by its lower face, to complete the operation.

It is obvious that my improvements are equally applicable to a continuous feed, the main advantage of an intermittent feed being that the rubbing is prolonged on each part of the seam.

For finishing a welted seam, the rubbing process is carried out as above described. This process flattens out the material and leaves the welt-strip projecting to a greater or less extent, as shown in Fig. 7.

To trim the welt, I employ a knife, K, consisting of a blade forked at one end to receive the welt, having a cutting-edge, k , at the bottom of the fork. The other end, k' , of the blade is fitted to a groove, k^2 , in the top of a support, k^3 . The support k^3 is split at its upper part to form a clamp, which is tightened to grip and hold the knife K, when properly ad-

justed in relation to the rubbing-tool and feed-wheel, by means of a screw, k^4 . The support k^3 has its lower end adapted to fit a socket, k^5 , on the main frame, so as to be readily attached or detached, as desired, and is secured, when properly adjusted vertically, by means of the thumb-screw k^6 .

When a plain seam is to be finished, the grooved feed-wheel can be quickly changed for a wheel for plain seams by unscrewing the hand-nut a^4 , (see Fig. 7,) removing one wheel, putting on another, and replacing and tightening the nut a^4 .

I claim as my invention—

1. In a seam-finishing machine, a presser-foot having a groove to receive and guide the seam, and two pressers, d d' , in combination with a rubbing-tool adapted to reciprocate between the two pressers, and a support for the stock or material, substantially as set forth.

2. In a seam-finishing machine, a rubbing-tool having two working-faces, one above the other, the higher face being located to act first on the seam, in combination with a presser-foot and support for the material, substantially as and for the purpose set forth.

3. In a machine for finishing a welted seam, a welt-trimming knife adjustable on its support, as described, and having its support detachably connected, in combination with seam-supporting devices, substantially as and for the purpose set forth.

4. The improved seam-finishing machine hereinbefore described, consisting of the support, the double presser-foot, and the reciprocating tool for rubbing the seam, all arranged and combined substantially as set forth.

CHARLES WOODMAN.

Witnesses:

J. E. MAYNADIER,
J. R. SNOW.