

(No Model.)

2 Sheets—Sheet 1.

R. A. BRIGHT & W. A. PECK.
FLEXIBLE ROLL FOR CIGAR MACHINES.

No. 445,937.

Patented Feb. 3, 1891.

Fig. 1.

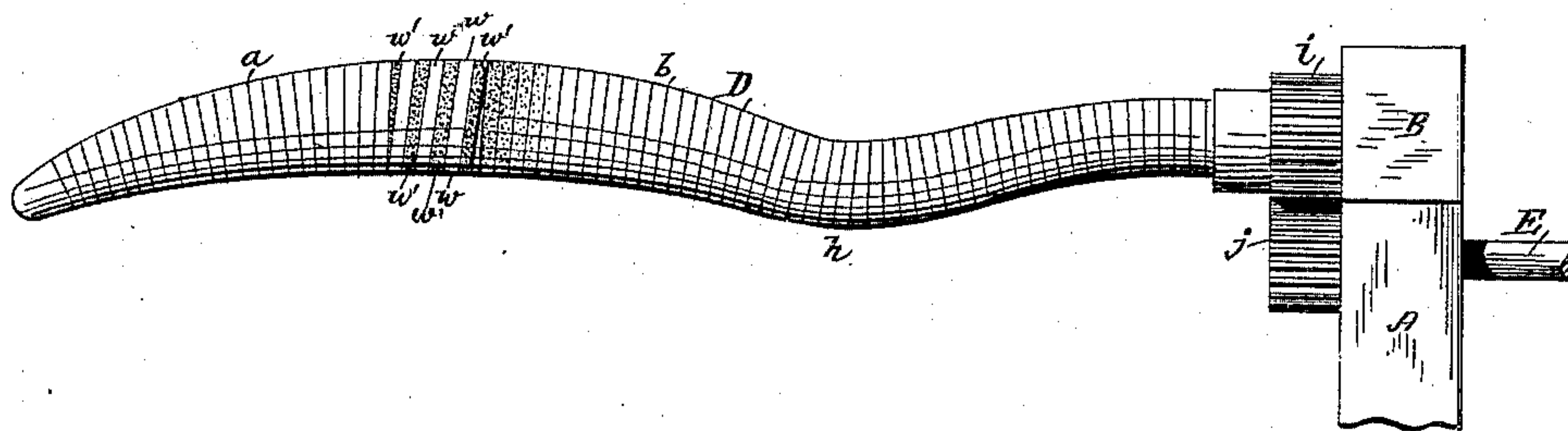


Fig. 2.

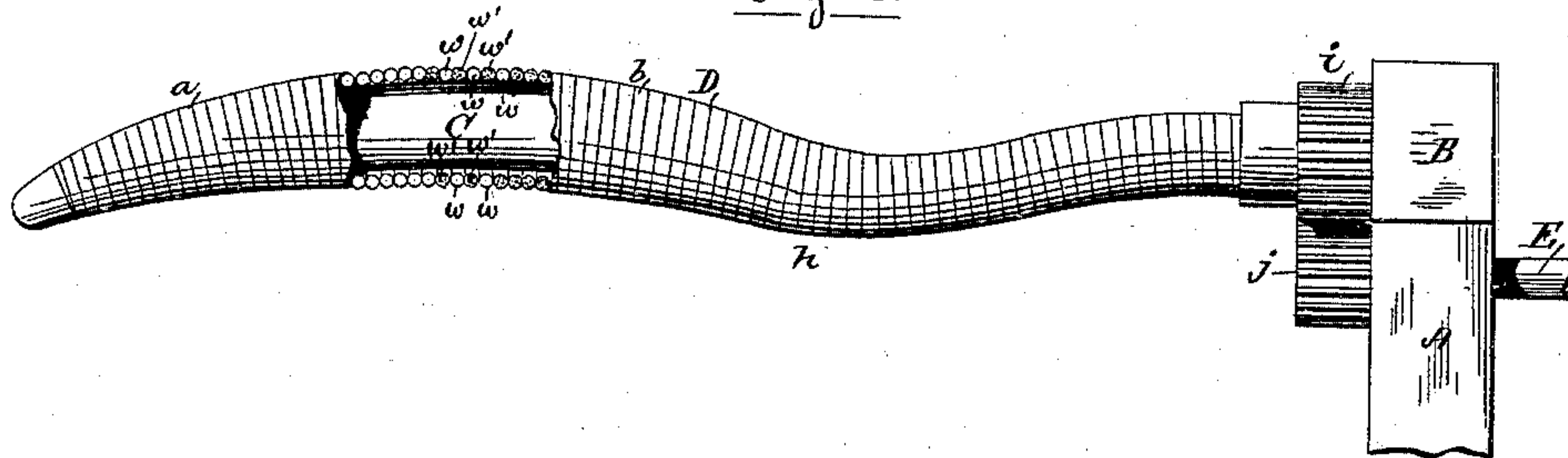
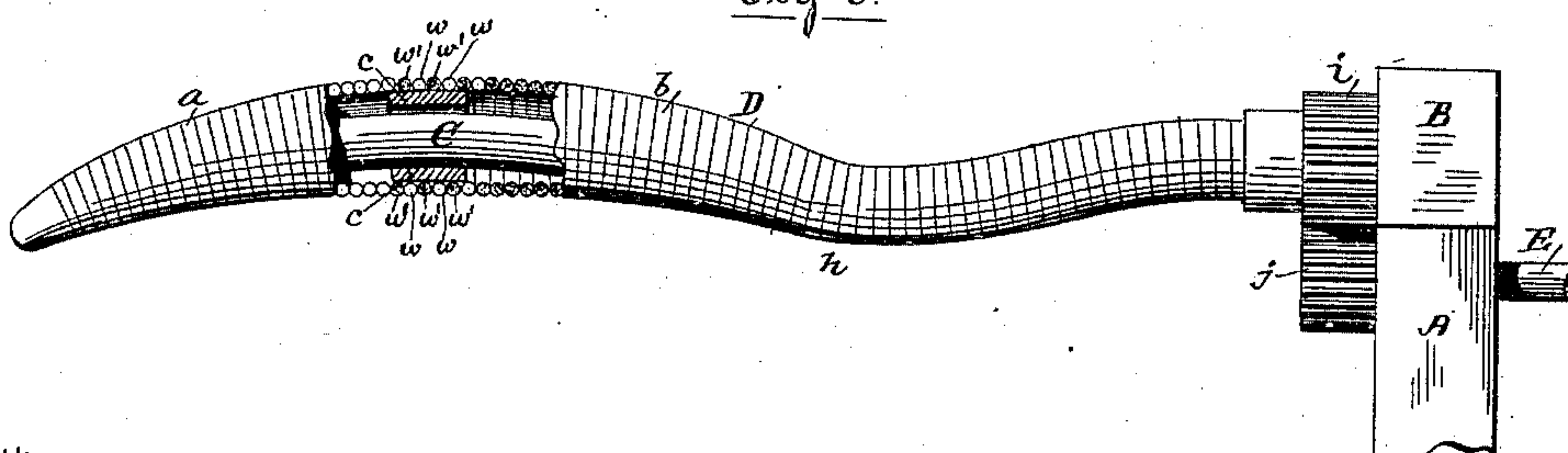


Fig. 3.



Witnesses

Chas. F. Schmelz.

Fred. O. Abbott

Inventors

Richard A. Bright

Walter A. Peck

By their Attorney

S. Scholfield

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Fig. 4.

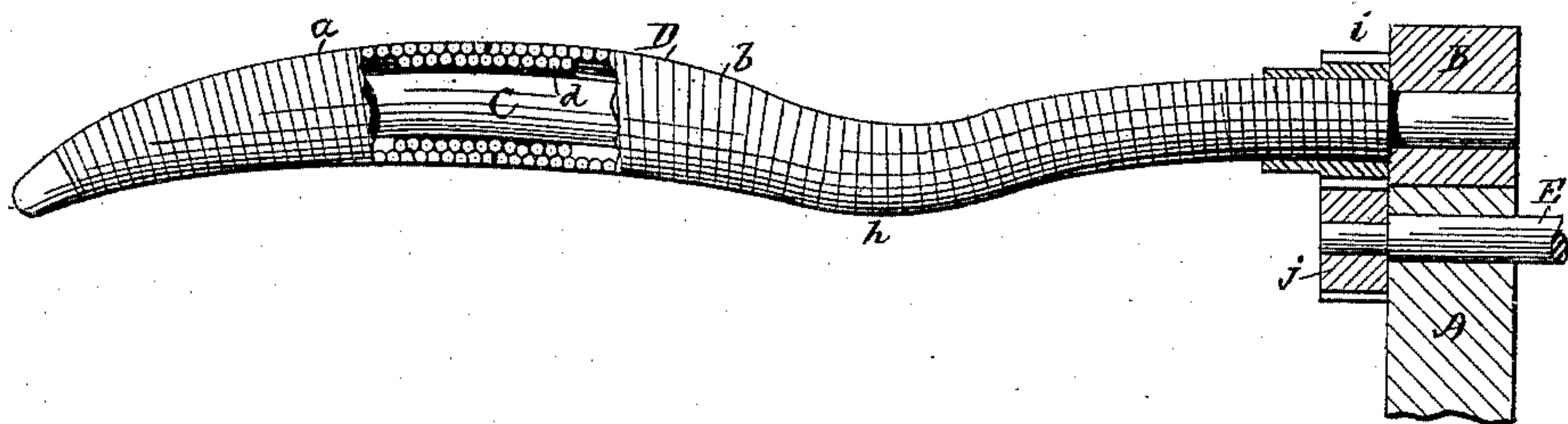


Fig. 5.

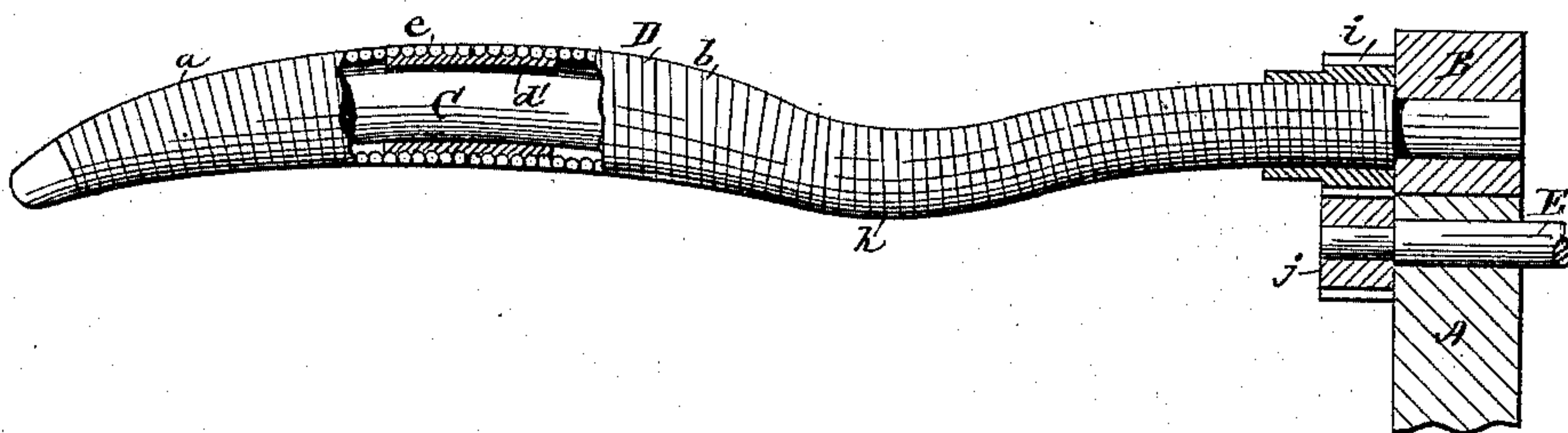


Fig. 6.

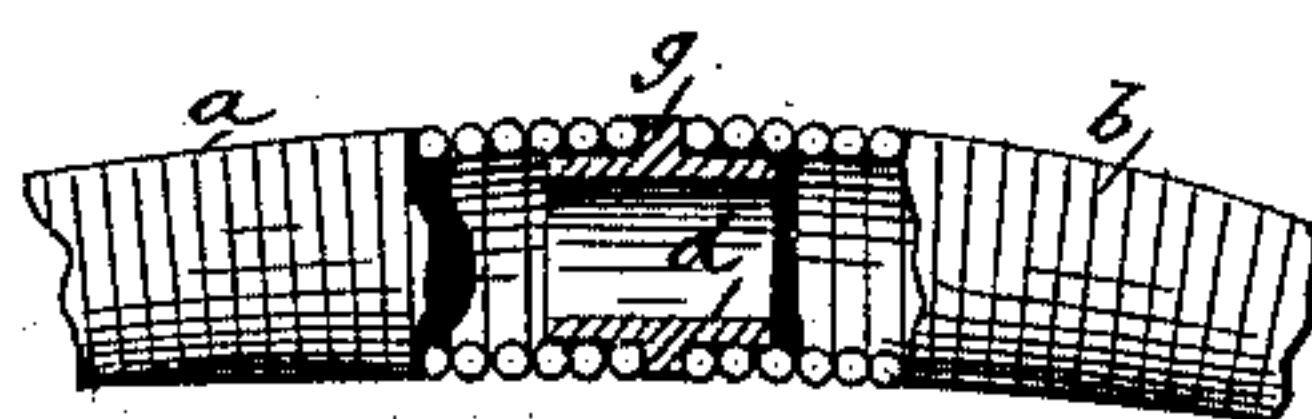
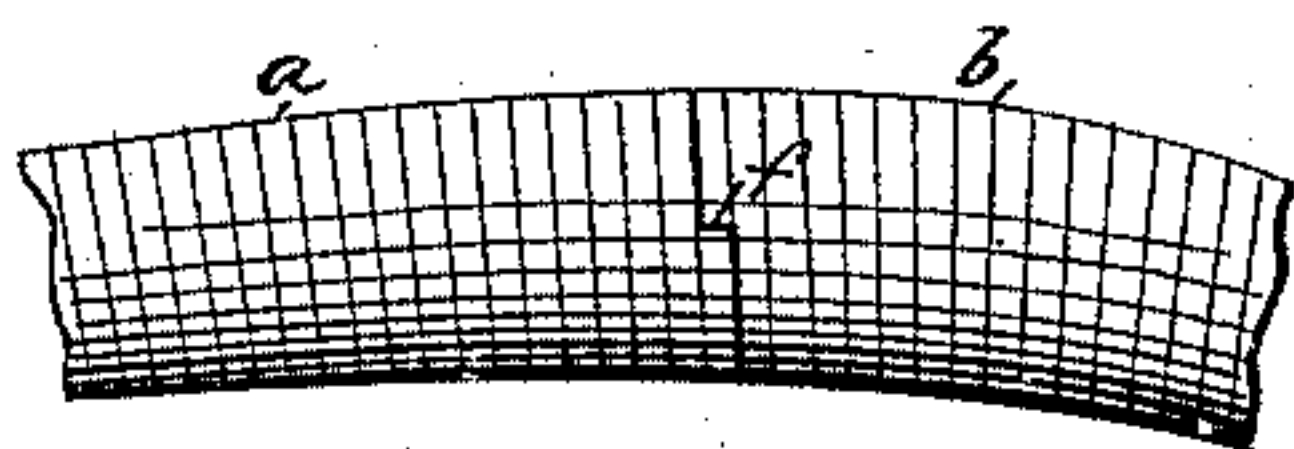


Fig. 7.

Witnesses
Chas. F. Schmeltz.
Fred. B. Abbott.

By their Attorney

Inventors
Richard A. Bright
Walter A. Peck
S. Schofield

UNITED STATES PATENT OFFICE.

RICHARD A. BRIGHT AND WALTER A. PECK, OF PROVIDENCE, RHODE ISLAND; SAID BRIGHT ASSIGNOR TO SAID PECK.

FLEXIBLE ROLL FOR CIGAR-MACHINES.

SPECIFICATION forming part of Letters Patent No. 445,937, dated February 3, 1891.

Application filed November 25, 1889. Serial No. 331,550. (No model.)

To all whom it may concern:

Be it known that we, RICHARD A. BRIGHT and WALTER A. PECK, citizens of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Flexible Rolls for Cigar-Machines, of which the following is a specification.

Our invention relates to that class of flexible rolls for cigar-machines which is made of a spirally-wound coil of wire, which is held in a longitudinally-curved position to fit the contour of the cigar-bunch and roll the binder or wrapper thereon. Heretofore such rolls have been made of uniform diameter throughout, except at the terminating tip, which operates to roll the tapering head end of the cigar, the tuck-forming portion of the roll having a diameter as great as that of the middle portion, which is not the proper construction for rolling cigar-bunches with tapering tucks, the increased surface movement of the roll at the tuck end of the cigar-bunch tending to twist the bunch, thus causing the cigar to draw hard in smoking. Moreover, it is entirely impracticable to wind a continuous spiral coil to form a flexible roll for cigar-machines upon an oppositely-tapered mandrel, so as to reduce the diameter of the tuck-rolling portion, and then to withdraw the mandrel from the spiral coil. We have therefore divided the flexible roll into two separately-formed sections, the one tapering from the middle portion toward the head end of the cigar-bunch and the other tapering in the opposite direction toward the tuck end of the same, and have connected these two portions to each other base to base to form the oppositely-tapered portions of the roll. We are thus enabled to make a spirally-wound roll tapered in opposite directions by winding the tapering portions of the roll upon separate suitably tapered mandrels, whereby the diameter of the roll at any specific point in its length can be made as desired.

Figure 1 represents a side elevation of a flexible roll for cigar machines constructed according to our improvement, the two oppositely-tapered sections being connected by interlocking the spiral wires. Fig. 2 represents

the same with the enlarged middle portion of the roll broken away to show a transverse section of the interlocked wires. Fig. 3 represents the roll as shown in Fig. 2, the interlocked wires at the base of the tapering roll-sections being supported by means of a coupling. Fig. 4 represents the roll and shows the tapered sections connected base to base by means of a separate spiral coil. Fig. 5 represents the roll and shows the tapered sections connected by means of a screw-threaded sleeve. Fig. 6 is a detail elevation showing one form of the closed joint at the junction of the oppositely-tapered roll portions. Fig. 7 represents the joint of the roll as formed upon a sleeve having a collar at its middle portion.

In the accompanying drawings, A represents a portion of the roll-holding head of a cigar-machine; B, the movable jaw which carries the upper roll or rolls, and C is the curved shaping-core, which is firmly held at the movable jaw B.

The spiral roll D is made in two oppositely-tapered sections *a* and *b*, the wire of which is wound upon separate tapering mandrels, so that the several diameters of the roll at specific points between the head end of the cigar-bunch and the tuck end of the same can, if desired, be made proportionate to the corresponding diameters of the bunch at the same points. The surface of the roll will thus in its rotation conform to the surface movement of the inclosed bunch, so that the twisting of the said bunch will be entirely avoided. The oppositely-tapered roll-sections *a* and *b* can be connected to each other base to base, so as to form a continuous flexible roll, by screwing the properly-squared ends of the roll-sections together, so that the wires *w w'* of each respectively will become spirally interlocked, as shown in Figs. 1 and 2, and then soldering the said wires to each other; and in order to add strength to the joint and to preserve the two roll-sections in their proper axial line with each other while being soldered we preferably employ an interior coupling *c*, as shown in Fig. 3, which is also soldered to the joint. In the employment of the oppositely-tapered flexible ci-

gar-machine roll D it is desirable to be able to separate the two sections from each other, and to reunite them at pleasure; and in order to provide means for the practical accomplishment of this object we wind up the roll-sections *a* and *b* of round wire, and also wind of the same size wire a spiral-coil coupling *d*, as shown in Fig. 4, and then screw the tapering roll-sections *a* and *b* onto the coil *d*, thus forming the joint by means of a screw-coupling; and instead of the spiral coil *d* a rigid coupling *d'*, provided with a screw-thread *e*, which is adapted to fit the interior convolutions of the wire, can be employed, as shown in Fig. 5; and instead of tapering the ends of the wire of the opposite sections *a* and *b*, as in Figs. 1 and 2, we prefer when employing the screw-coupling to cut the end of the wire square, as shown at *f* in Fig. 6; and instead of making the enlarged ends of the tapering roll-sections to rest against each other at the joint they can be separated by a collar *g* upon the periphery of the coupling *d*, as shown in Fig. 7, the end of the wire of the roll-sections being preferably tapered, as in Figs. 1 and 2, so as to abut squarely against the side of the collar. The roll-section *b* is continued at the same diameter from the tuck-rolling portion *h* to the head A or movable jaw B, and provided with the attached gear *i*, which engages with the gear *j* upon the driving-shaft E, and serves to impart rotary move-

ment to the roll. The flexible spirally-wound wire roll thus formed is removable from the fixed supporting-core upon which it is caused to revolve, and will fit cores of different shapes.

We claim as our invention—

1. A flexible spirally-wound wire roll for cigar-machines, made in two tapered sections which are united to each other base to base, substantially as described.

2. A flexible spirally-wound wire roll for cigar-machines, made in two tapered sections which are united to each other base to base, and having a connecting-joint strengthened by an interior coupling, substantially as described.

3. A flexible spirally-wound wire roll for cigar-machines, made in two tapered sections which are united to each other base to base by means of an interior screw-coupling, substantially as described.

4. A flexible spirally-wound wire roll for cigar-machines, made in two tapered sections which are united to each other base to base by means of an interior coupling provided with an exterior collar, substantially as described.

RICHARD A. BRIGHT.
WALTER A. PECK.

Witnesses:

H. S. BABCOCK,
SOCRATES SCHOLFIELD.