(No Model.) 2 Sheets—Sheet 1.

W. WALTON.

MODE OF MAKING WIRE FOR CARDS.

No. 457,038. Patented Aug. 4, 1891.

FIG. 2.

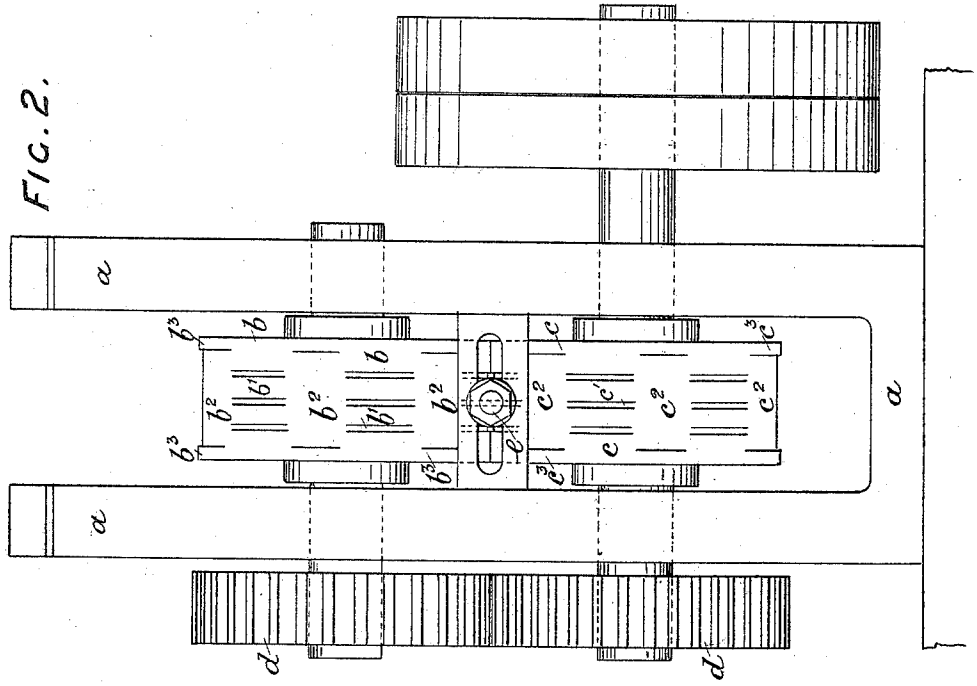
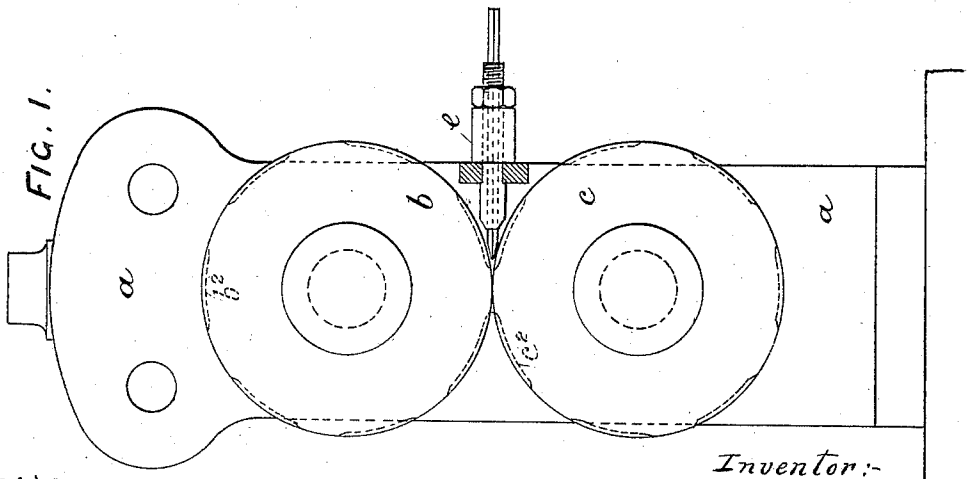


FIG. 1.



Witnesses:-
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. WALTON.

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FIG. 3.

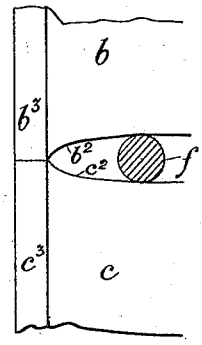


FIG. 4.

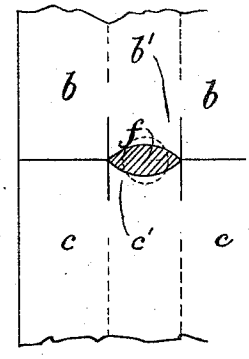


FIG. 5.

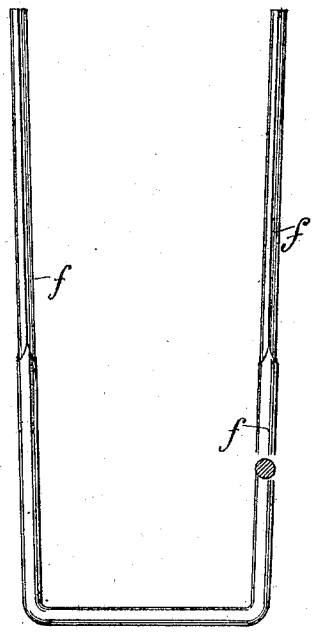
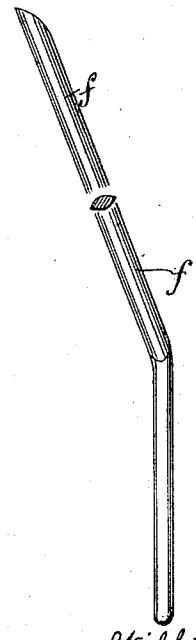


FIG. 6.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM WALTON, OF DENTON, ENGLAND.

MODE OF MAKING WIRE FOR CARDS.

SPECIFICATION forming part of Letters Patent No. 457,038, dated August 4, 1891.

Application filed January 10, 1891. Serial No. 377,378. (No model.) Patented in England September 25, 1886, No. 12,185.

To all whom it may concern:

Be it known that I, WILLIAM WALTON, a subject of the Queen of Great Britain, and a resident of Denton, in the county of Lancaster, England, have invented an Improved Rolled Wire for Making Wire Cards, (for which I have obtained Letters Patent in Great Britain, No. 12,185, bearing date September 25, 1886,) of which the following is a specification.

My invention relates to improvements in rolling wire of more than one section—say, for example, alternately round and either angular, oval, or flat—the object of my improvements being to produce a rolled biform wire which is particularly applicable for use in the manufacture of card-clothing, the round section being for the base where the tooth passes through or bears against the foundation of the card and the angular oval or flat section being intended for the carding point or edge.

I am aware that wire of more than one section has already been employed in the manufacture of cards, the wire having a round base and the remaining part previous to being pointed having been flattened by punching or by a squeezing or rolling process, such as that described in the specification to British Letters Patent, No. 1,518, A. D. 1873; but I lay no claim to wire thus manufactured.

In carrying my invention into effect I employ a pair of rollers, each of which has grooves and recesses formed alternately on its periphery, so that when the round wire is passed between the rollers a certain length of it is shaped into an angular, oval, flat, or other required section in the grooves, while the recessed portions of the rollers, which may or may not bear lightly upon the remaining part of the wire, do not alter its shape. I thus obtain a rolled wire of more than one section.

In order that my invention may be fully understood and readily carried into effect, I will describe the accompanying two sheets of drawings, reference being had to the letters marked thereon.

Figure 1 represents an elevation of a pair of rollers constructed with alternate grooves and recesses for the purposes of my invention, and Fig. 2 is a side view of the same. Fig. 3 is an enlarged view of the nip of the rollers. Fig. 4 is a similar view, but with the rollers in different positions. Fig. 5 is a front view, and Fig. 6 is an edge view, both on an enlarged scale, of a card-tooth made from my improved rolled biform card-wire.

Similar letters refer to similar parts throughout the several views.

a is the frame for the rollers *b* and *c*, which are mounted in suitable bearings, and are geared together by the toothed wheels *d d*. The rollers *b* and *c* are of equal size, and are finished in the same manner, short grooves *b'* and *c'* being cut at regular intervals around the periphery of each roller, and recesses b^2 and c^2 separate or divide such grooves, as shown in Fig. 2 and the enlarged views Figs. 3 and 4. The recesses b^2 and c^2, respectively, which separate each transverse row of grooves from the next row, are cut or ground almost across the face of each roller, a narrow collar only b^3 or c^3, as the case may be, being left at the edge to insure rolling contact at all points between the rollers. A suitable guide *e* is supported on the frame and employed to lead the wire *f* into the groove in the ordinary manner well known to wire-card manufacturers.

The wire is fed between the rollers *b* and *c* through the guide *e*, and may either be drawn through by the rollers as they revolve or by independent drawing through rollers. The intermittently-grooved portions *b' c'* on the rollers shape the wire into an angular, oval, or flat section, while the alternate or recessed portions b^2 c^2 leave the other portions of the wire round or of the original section, or may be so formed as to give the wire any other special section desired.

By my invention I am enabled to produce a wire simultaneously of two sections by passing the wire once only through a pair of specially grooved and recessed rollers geared together and driven continuously during the rolling process.

Biform wire rolled in the manner described is particularly suitable for being made into wire-cards for carding cotton and other fibers, as the round base of the wire when set in the foundation of the card-clothing forms a good abutment to resist the pressure on the point or carding edge of the wire, and the skin of the wire being hardened by the operation of rolling the point or carding edge is rendered

much more durable and does not require to be ground or set so frequently as ordinary card-wire.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, what I claim, and desire to secure by Letters Patent of the United States, is—

The herein-described method of making wires for cards, consisting in passing the portions of the wires to be flattened between rolls and at the same rolling operation passing the bases of the wire through spaces between the rolls, which spaces are of a thickness or height as great as the thickness or diameter of the wires at their bases, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WILLIAM WALTON.

Witnesses:
H. B. BARLOW,
HERBT. ROWLAND ABBEY,
Both of 17 *St. Ann's Square, Manchester.*