No. 615,708. Patented Dec. 13, 1898.

C. B. HOWARD.

RAND FORMING MACHINE.

(Application filed Feb. 23, 1897.)

(No Model.)

FIG. 1.

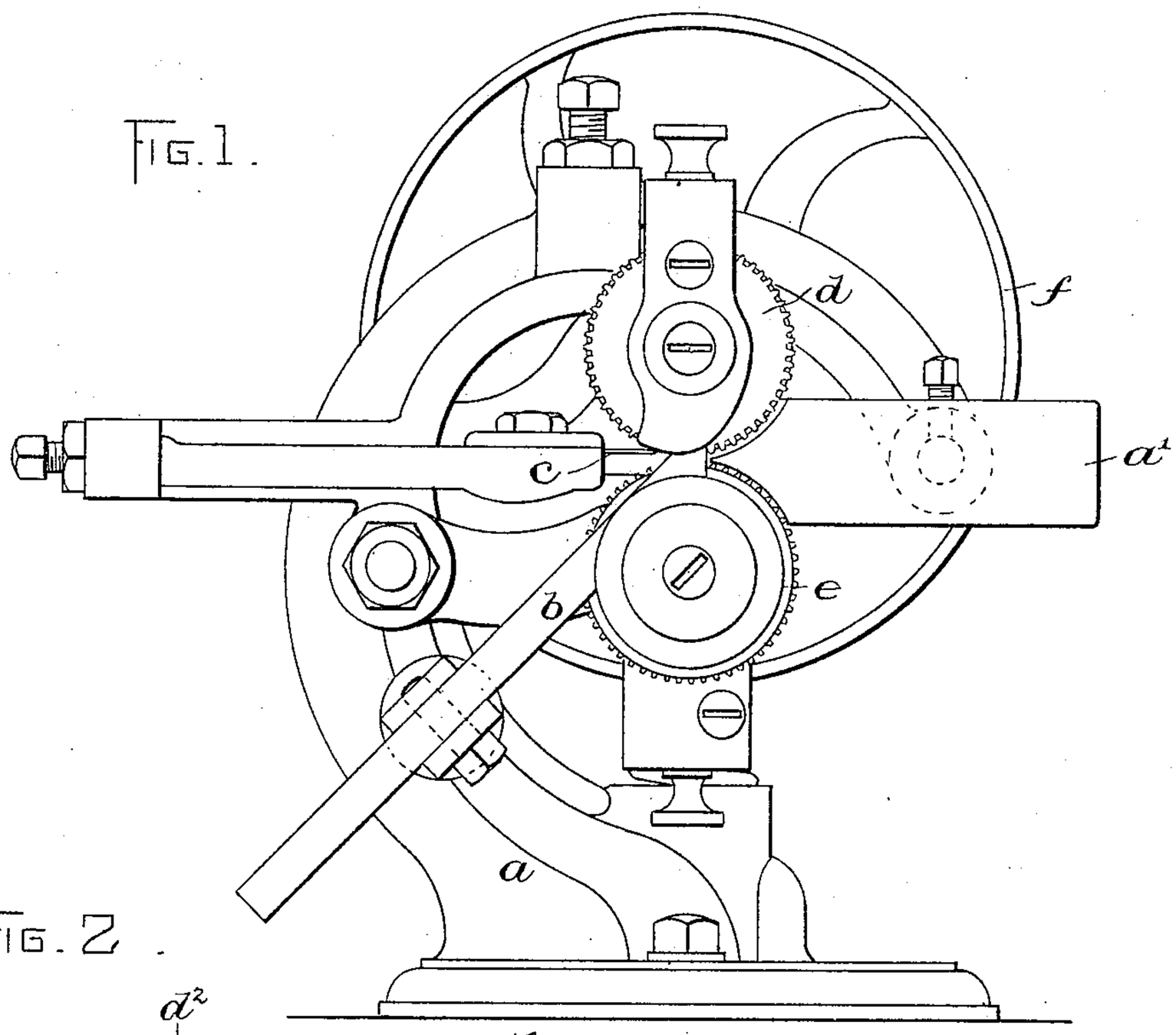
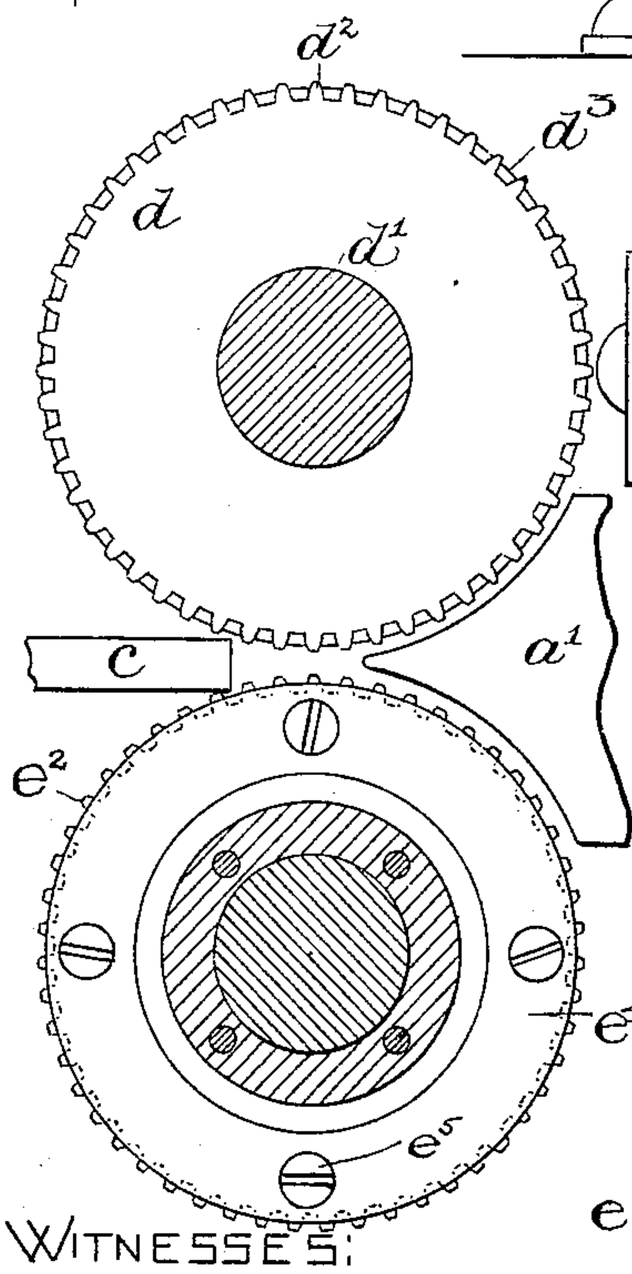


FIG. 2.



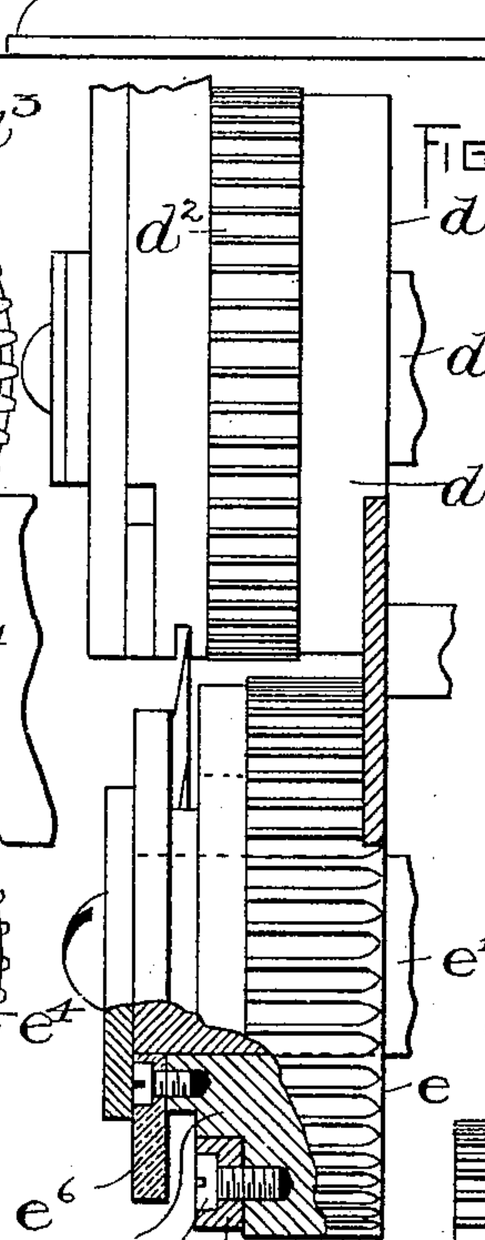


FIG. 3.

FIG. 4.

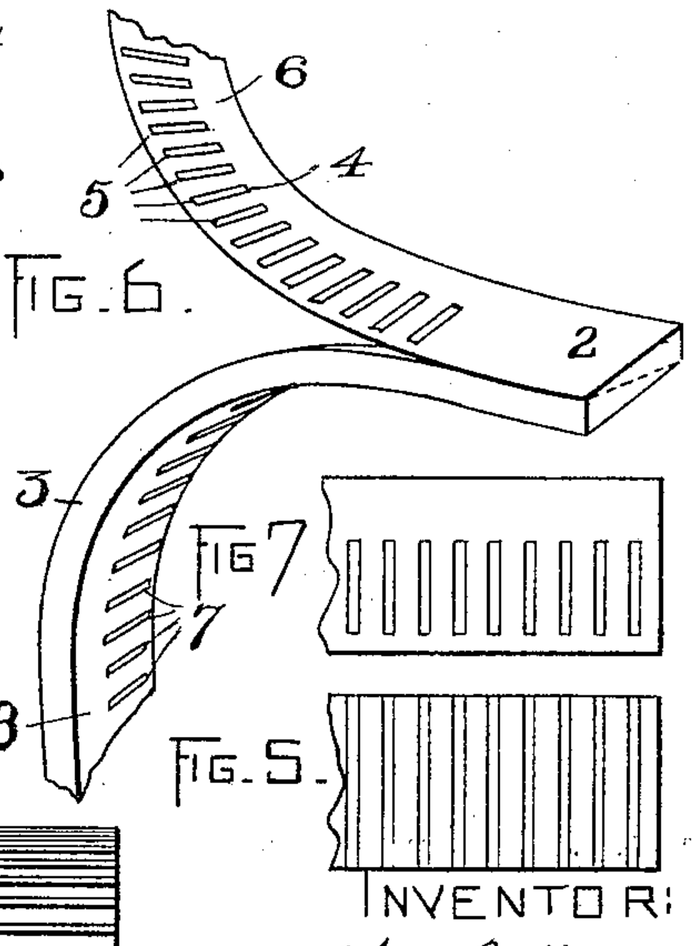


FIG. 6.

FIG. 7

FIG. 5.

WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES B. HOWARD, OF LYNN, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE J. B. RENTON COMPANY, OF SAME PLACE.

RAND-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 615,708, dated December 13, 1898.

Application filed February 23, 1897. Serial No. 624,671. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. HOWARD, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Rands for Boots or Shoes and Apparatus for Forming the Same, of which the following is a specification.

This invention has relation to machines or devices for forming rands for boots or shoes.

Rands are generally cut from a strip of leather by one machine and subsequently crimped upon another machine or by another part of the same machine. A piece of damp leather is fed to the action of two knives by a pair of toothed wheels, the knives being so arranged that each time the piece is passed between the wheels a narrow strip is severed from the main piece by the transverse knife, and the strip is divided longitudinally into two prism-shaped strips by the diagonally-arranged knife. One of the prism-shaped strips is necessarily indented on the grain side by one of the toothed feeding-wheels and the other is correspondingly indented on the flesh side by the other roll. The coacting feeding-rolls of the machine are generally so arranged that the indentations formed thereby in the rand strips or blanks extend entirely across the latter—that is to say, the strips which are formed by the machine are grasped by the feed-wheels in such way that the indentations extend entirely across the grain side of one strip and the flesh side of the other strip. For many years this has been one of the greatest difficulties to be overcome in properly finishing the rands after they have been secured in place in a partially-finished boot or shoe, for the reason that the indentations or grooves extending out on the faces of the outer or thicker parts of the rands are so permanently formed therein that it is impossible to polish or treat the rand in finishing the boot or shoe so as to entirely remove them. Even where the rand when placed upon the sole has been subjected to many tons of pressure in a leveling or pressing machine the indentations sometimes still remain.

Therefore the object of the invention is to provide such improvements in the machines employed for forming the rands that the toothed or crimping parts of the same will act upon the rand so as to indent or flute only a portion of the face of the same and leave the outer or thicker edge unindented and perfectly smooth, as above described.

To these ends the invention consists of the improvements, all as illustrated upon the drawings and now to be described in detail, and pointed out in the claim hereunto annexed.

Of the drawings, Figure 1 represents a side elevation of a machine which severs the rands from a large piece of leather and which indents the faces of the two prism-shaped strips which are formed of the single strip which is severed from the main body of the leather. Fig. 2 is a side elevation of the coacting indenting and feeding rolls. Fig. 3 is a front elevation of the same, also showing the knife which severs the strip from which the rands are formed from the main body of the piece of leather. Fig. 4 shows in front elevation a portion of an indenting roll or wheel as previously constructed. Fig. 5 illustrates a partially-finished indented strip which is afterward crimped by the crimping-machine. Fig. 6 is a perspective view illustrating how the single strip which is severed by the vertical knife is cut diagonally to form two rand figures. Fig. 7 illustrates the rand-blank when passed through my improved machine.

Referring to the drawings, the machine shown is provided with a frame *a*, upon which are mounted a vertically-arranged knife-blade *b* and an inclined knife-blade *c*. A pair of toothed feeding-rolls *d e* are suitably journaled upon the frame, one of them being driven by the belt-wheel *f* and the other being mounted in a spring-held bearing, whereby when a piece of leather is fed between the rolls they force it against the knives *b* and *c* in such a way as to sever first a strip 2 (see Fig. 6) from the main piece of leather and then divide the strip into two prism-shaped strips or rand-blanks 3 and 4, as also illustrated in the last-mentioned figure, there being a guide *a'* to properly guide the leather through the rolls. As far as described the

machine is no different from that as heretofore constructed.

The feeding-wheel d is mounted upon a shaft d' and is formed in its periphery with teeth d^2 and with a smooth cylindrical portion d^3, which is slightly less in diameter than the diameter of the pitch-circle of the teeth d^2, so that the said teeth project radially and slightly beyond the cylindrical portion d^3 of the wheel or roll.

The lower wheel e is mounted on the shaft e' and is formed with teeth e^2, arranged below the cylindrical portion d^3 of the roll or wheel d and overlapping to a considerable extent the teeth d^2 of the last-mentioned roll, so as to grip the strip 2 positively between two sets of teeth in a centrally longitudinal line. The said roll e is also formed with a reduced longitudinal portion e^3, on which is placed a smooth ring e^4, secured to the face of the wheel by screws e^5. The said ring e^4 is slightly less in diameter than the diameter of the pitch-circle of the teeth e^2, so that the said teeth project slightly beyond the periphery of the said ring in the same way that the teeth d^2 project beyond the periphery of the cylindrical portion d^3 of the roll or wheel d.

e^6 is a collar secured to the outer face of the roll or wheel e, so as to form between it and the roll or wheel a circumferential groove to receive the vertical severing-knife b, as shown in Fig. 3. The ring e^4 is, to all intents and purposes, a portion of the wheel or roll e, and the said rolls are arranged so that the cylindrical portions d^3 and e^4 of the two coacting rolls are in different transverse planes.

Now it will be seen that when the strip 2 is passed between the rolls the blank 4 will have a series of small indentations 5 at its thinner edge and a smooth unindented portion at its outer or thicker edge, while the blank 3 will have the indentations 7 and the smooth portion 8 on its opposite face.

I do not herein claim the improved rand, as it forms the subject-matter of a copending application.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

A machine for forming rand-blanks having two coacting feeding-rolls, said rolls being formed with teeth and with smooth peripheral surfaces, the teeth of one roll being opposite the smooth peripheral surface of the other roll, and the teeth of each roll projecting radially beyond its smooth peripheral surface.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of February, A. D. 1897.

CHARLES B. HOWARD.

Witnesses:

MARIE M. MCELHINNEY,

ESTHER M. NELSON.