

No. 703,991.

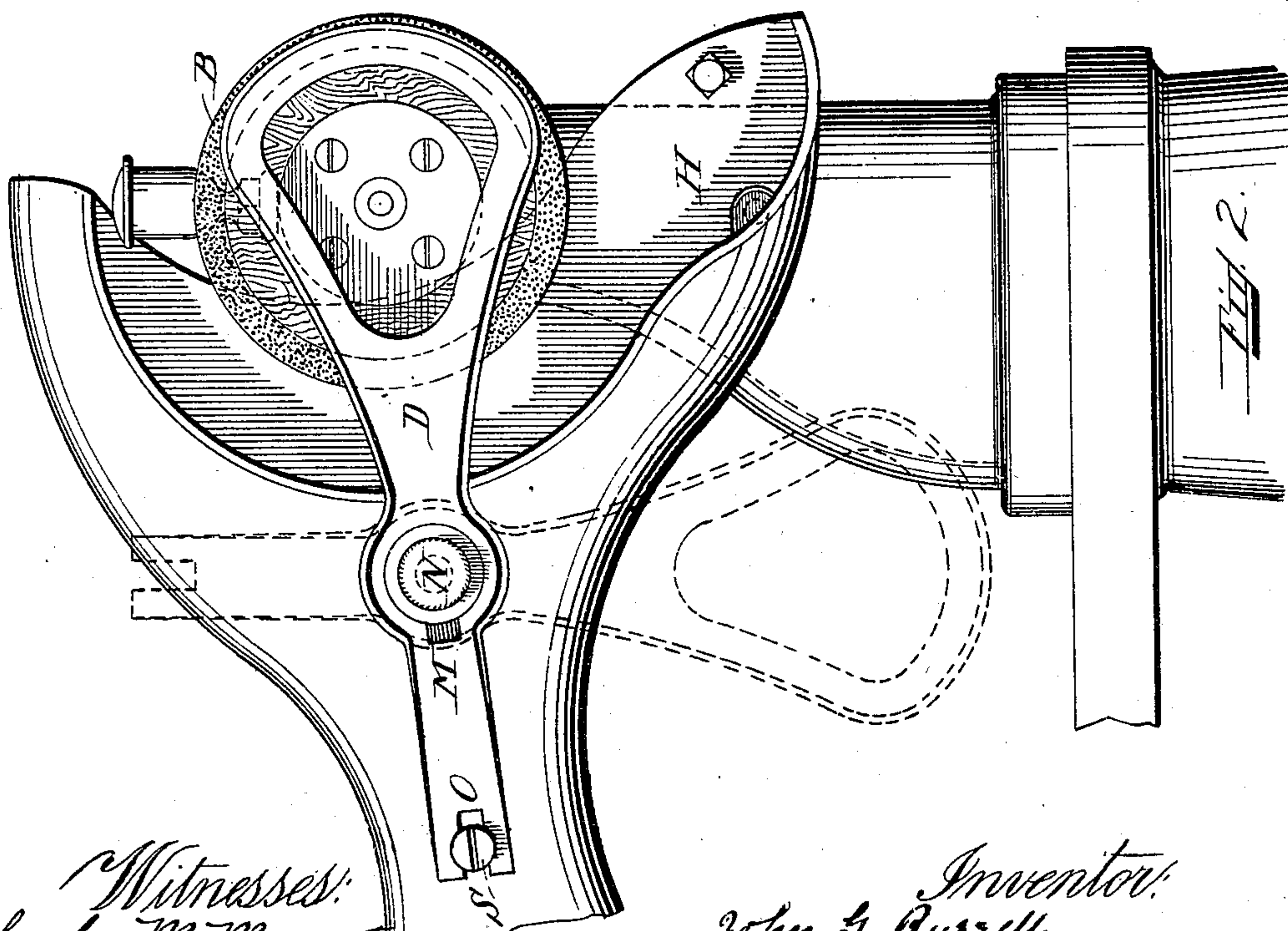
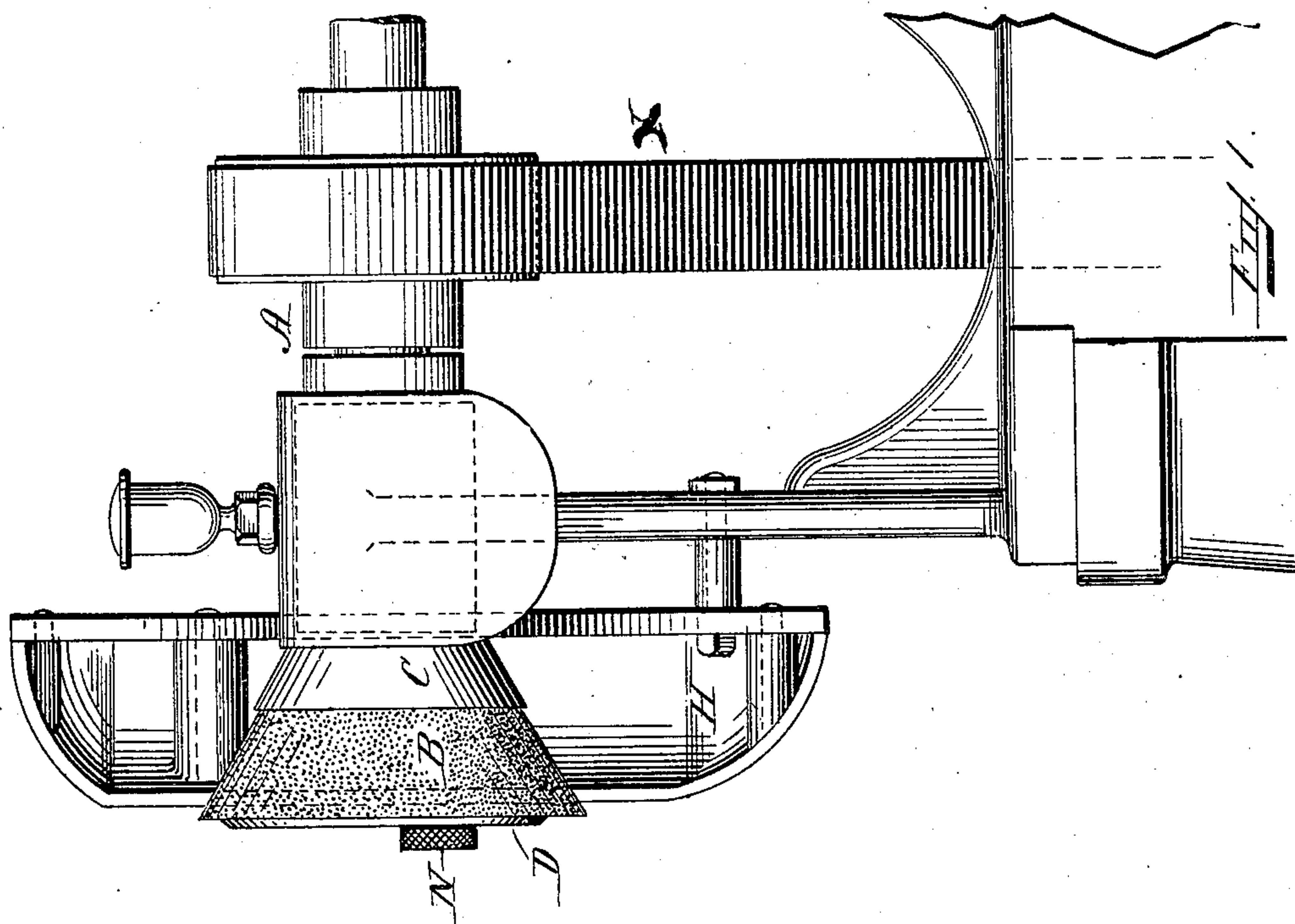
Patented July 8, 1902.

J. G. BUZZELL.

MACHINE FOR ABRADING FRONTS OF SHOE HEELS.

(Application filed Mar. 22, 1900.)

(No Model.)



Witnesses:
Charles M. Moriarty

Joseph Pratt

Inventor:
John G. Buzzell
by his Attorney
Chas. Allen Taber.

UNITED STATES PATENT OFFICE.

JOHN G. BUZZELL, OF LYNN, MASSACHUSETTS.

MACHINE FOR ABRADING FRONTS OF SHOE-HEELS.

SPECIFICATION forming part of Letters Patent No. 703,991, dated July 8, 1902.

Application filed March 22, 1900. Serial No. 9,747. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. BUZZELL, a citizen of the United States, residing at Lynn, in the State of Massachusetts, have invented certain new and useful Improvements in Machines for Abrading the Fronts of Shoe-Heels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the making of shoes it is now usual to abrade the fronts of the heels with sandpaper or emery-cloth in order to remove the rough surface left by the knife used to cut the front of the heel, so as to leave the leather with a smooth surface and one which will absorb the dye or stain with which the heel is colored. It is a difficult operation to do this work by a machine without injury to the soles of the shoes, especially in those which have high rounded shanks and high heels made with concaved fronts. It is particularly difficult to avoid injury to the soles when the shoes are made with much "spring" in the shank, which is done in most of the finer grades of ladies' shoes. It is common in the shoemaking trade to use abrading-disks for smoothing the fronts of shoe-heels made as described in my Letters Patent, No. 317,622, dated May 12, 1885; but the tool of my said invention will not do the work desired in shoes with high concave heels and rounded shanks having much spring without careful work on the part of the operator, which makes expense, and such careful operators are sometimes difficult to obtain. In order to do satisfactory work on the fronts of shoe-heels, the edge of the abrading-band at the larger end of the disk must reach down to the sole and also into every part of the surface of the front of the heel.

The object of this invention is to provide a machine which will do this work quickly and easily and prevent any injury to other parts of the shoes and to so arrange the parts as to allow the operator to readily open the machine to remove the worn abrading material and to put a new band of abrading material on the revolving disk. To accomplish these objects, I take the machine now in use, having upon it one or more of my abrading-

disks, made as described in the third claim of said patent. Each of these disks has an abrading material upon the cushioned peripheral face oblique to its axis, and has a circumferential guard at its smaller end adapted to sustain the abrading-band and secure it in position upon the disk. I add thereto a guard upon the large end of the abrading-disk specially constructed so as to conform to the edge of the abrading-band, as shown in the accompanying drawings, and marked D.

This invention consists in the improvement upon the machine now in use by adding certain new parts and in the form and arrangement of the different parts, so that they shall coact in abrading the front of the heels and prevent any injury to other parts of the shoes in the adjustment of these parts, so that none of them shall interfere with the operation of reaching the different parts of the front of the heels with the abrading-band.

Before I describe my invention I wish to state that many efforts have been made by myself and others to obtain a machine which would do the work above described, but all such previous efforts have been failures, mostly for the reason that they have been so complicated that they require too much time to make the frequent changes in abrading-bands and in the disks or they failed to be able to do the work on certain kinds of shoes. There is a great variety in the form, height, and position of the heels on the shoes made in the shops where these abrading-disks are mostly used, and a machine which will perform the work on only a part of these heels is not acceptable.

Figure 1 is a front view of my machine, showing a disk at the left hand of the operator. The revolving shaft A, held in the bearings and made to revolve by power, is old and common in many trades. The disk B, attached to the end of the shaft, is my disk, as described in Letters Patent No. 317,622 and claimed in the third claim. At the large end of the abrading-disk is a guard D, shown better in Fig. 2. In this figure only one disk is shown; but I prefer to make my machines with a disk at each end of the revolving shaft. This is using both a right-hand and a left-hand disk, as this construction not only does better work, but is more convenient to the opera-

tor. I prefer to use coarse sandpaper on one and a finer finishing-paper on the other. Shoe-heels finished wholly by one disk are liable to show a little fuzzy edge on that side of the heel which leaves the disk last, due to the fibrous character of the leather. This is objectionable. With two disks moving in opposite directions the operator can work from both edges of the front of the heel toward the center, and thus avoid the fuzzy edge.

Fig. 2 shows the large end of the disk B, which I prefer to make concave, and the guard D. This guard is made to slide forward and backward, being held by the stud S in the open slot O and by the thumb-screw or other similar device in the closed slot N. I prefer to cut away a large portion of the material of this guard, as shown in Fig. 2, in order to give all the room possible to the shoe operated upon as well as to save weight and cost.

The machines described in this application are designed to be used mostly on shoes having high French heels and soles with a large amount of spring in the shanks. In these shoes the space between the soles and the heels is small. I find it desirable to cut away a portion of the guard D, as shown in the drawings, so as to get all the room possible; otherwise the soles might strike the guard and be injured. This cutting away of the guard is not always necessary and is not, therefore, an essential part of my invention.

Similar letters refer to like parts in both drawings.

In order to prevent the larger edge of the abrading-band from touching other parts of the shoe when reaching to some of the portions of the fronts of the heels, I have found it necessary to cover with a guard most of the larger end of the abrading-disk; but in some of the shoes now made the room is limited, and it has been found difficult to make a guard which will protect the shoe from the disk without taking more room than can be found. After many failures I have adopted as my preferred guard a sheet of thin steel or other similar material made at its forward end to conform in shape to the average circle of the large end of the disks to be used. This guard D is held in position in the machine, as shown in Fig. 2, and comes close to the large end of the disk B. The forward end of this guard reaches nearly to the abrading-band on the disk in my preferred construction. The guard D is supported by the studs N and S, so that it can be moved forward and back, as desired. It thus serves to cover and protect the sole and other parts of the shoes from the injury which the edge of the abrading-band might cause. When it is necessary to remove the guard, so

as to allow the disk to be changed or to receive a new band of abrading material, which is done quite frequently, the thumb-screw N is turned back, the guard is drawn forward enough to allow the small end to be free from stud S, and the weight of the large end causes it to drop out of the way with a quarter-revolution on the stud N. When the disk has been replaced on the shaft, the guard is returned to its place, supported at its rear end on the stud S and held by the screw-stud N. I prefer to make the guard D at the smaller end of the disk cup-shaped, so as to overlap upon the abrading-band upon the oblique face of my disk and to attach the guard to the shaft, so that it need not be removed, except when a disk having a different face is to be used. I prefer to attach the inner guard and the disk to the shaft by a right or left hand screw, so that the disk and guard may both be quickly turned to place and held more firmly as the shaft is revolved. I prefer to make the abrading-bands with the ends fastened together, so as to form truncated cones of abrading material, as these cones are most easily and quickly applied to the oblique circumferential face of the disk and are forced up the oblique face by the operation of fastening the disk into the cup-guard. Other constructions of the guard at the smaller end of the disk and other means of fastening the abrading-band to the oblique face of the disk may be used as circumstances may suggest without departing from the essential features of my invention.

The machine is provided with the usual dust-collector H in order to draw away, by means of a fan, the dust from the leather and sand from the abrading-band to protect the health of the operator.

The shaft A, with the disks attached, is usually caused to revolve at a high speed by a belt X, as shown in Fig. 1.

What I claim, and desire to secure by Letters Patent, is—

In a machine for abrading the fronts of shoe-heels the combination of a disk having abrading material upon a face making an acute angle with the free end of the disk, means adapted to cause said disk to revolve, a metal guard conforming to the working edge of the disk, having slots therein, said guard being held rigidly close to said working edge, the stud N and thumb-screw S which engage slots M and O of the guard substantially as shown or described.

JOHN G. BUZZELL.

Witnesses:

CHAS. ALLEN TABER,
JOSEPH PRATT.