(No Model.) 3 Sheets—Sheet 1.

S. BLOOMFIELD & C. F. CLARK.

SEAM RUBBING MACHINE.

No. 393,351. Patented Nov. 27, 1888.

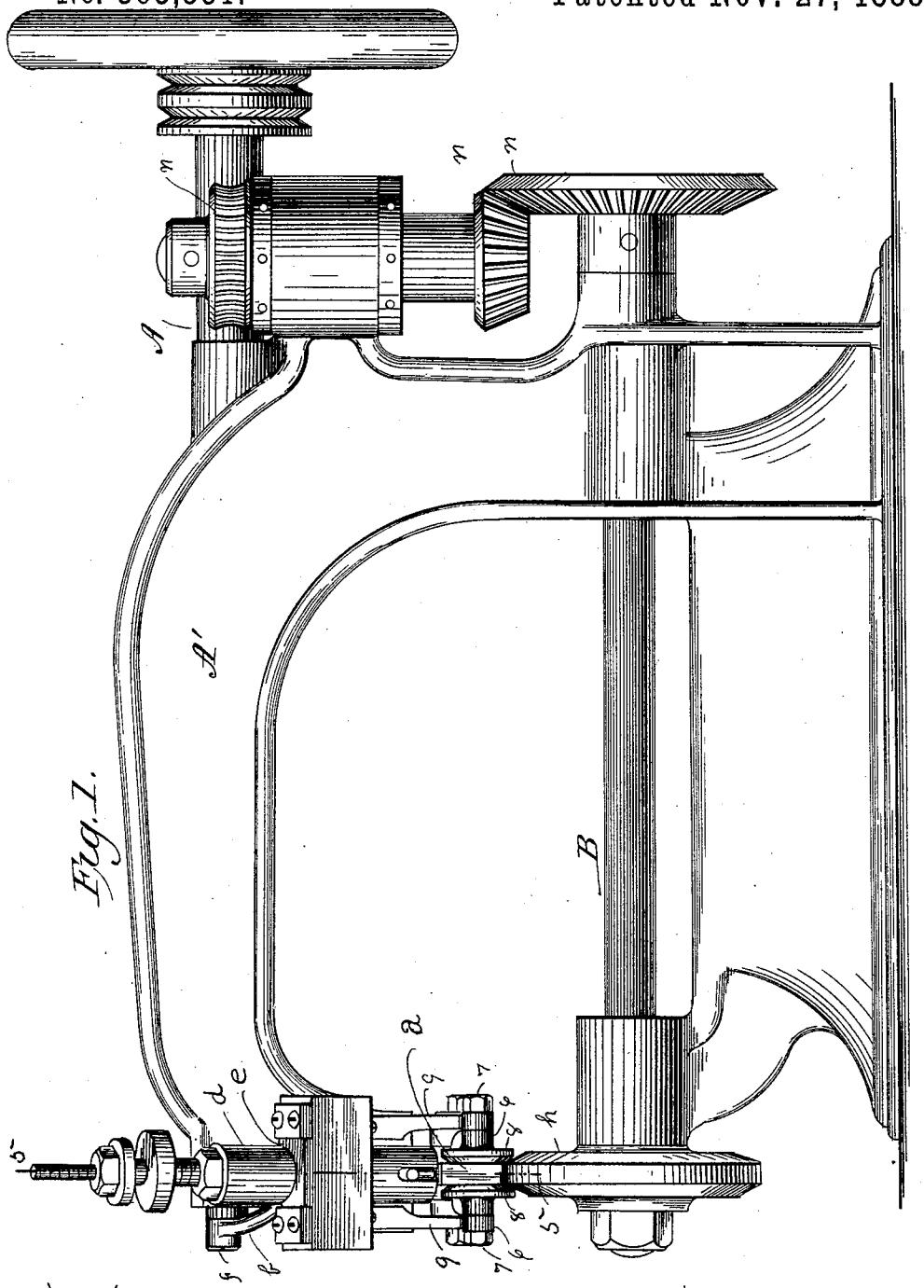


Fig. 1.

WITNESSES:
Geo. H. Williams
W. T. Gray.

INVENTORS,
Samuel Bloomfield,
Chas. F. Clark
By
C. B. Tuttle Atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

S. BLOOMFIELD & C. F. CLARK.

SEAM RUBBING MACHINE

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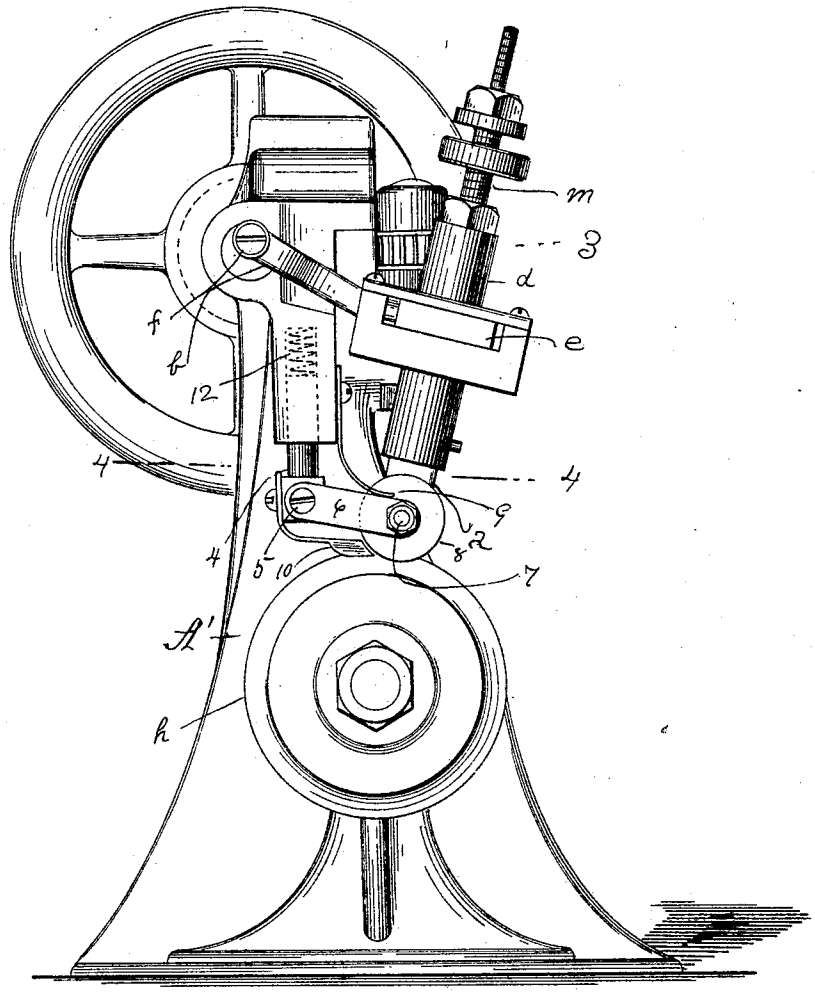


Fig. 2

WITNESSES:
Geo. H. Williams.
W. T. Gray.

INVENTORS.
Samuel Bloomfield.
Chas. F. Clark.
BY
C. B. Tuttle
Att'y

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

S. BLOOMFIELD & C. F. CLARK.

SEAM RUBBING MACHINE.

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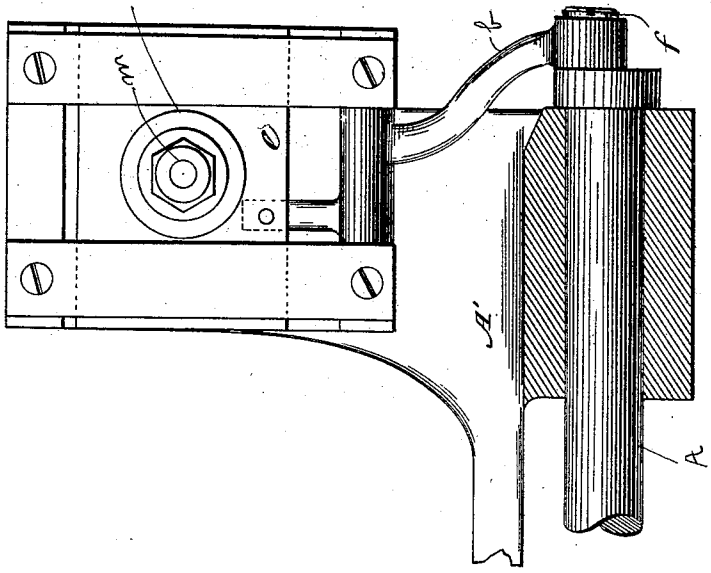


Fig. 3.

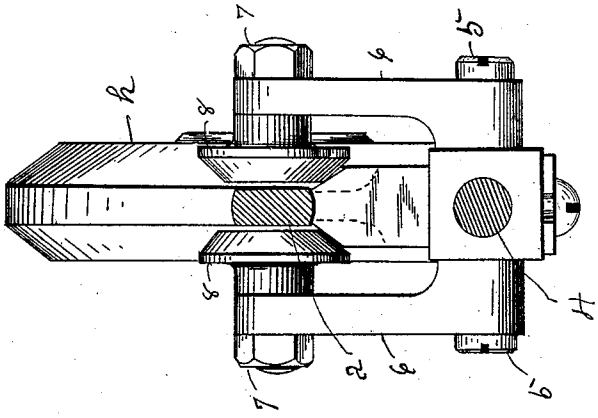


Fig. 4.

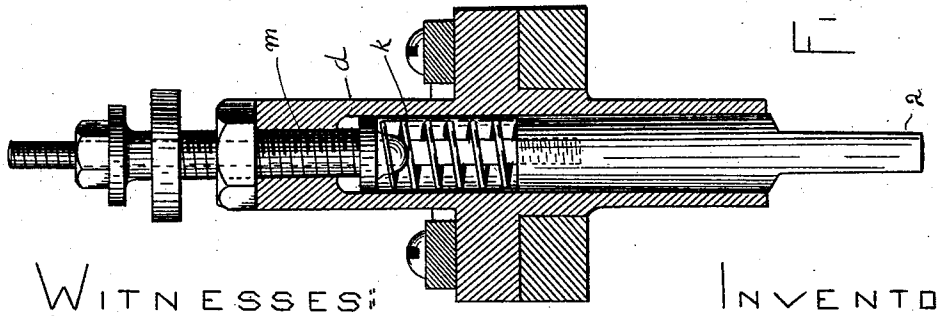


Fig. 5.

WITNESSES:
Geo. H. Williams.
W. T. Gray.

INVENTOR:
Samuel Bloomfield.
Chas. F. Clark.
By
C. B. Tuttle
Atty.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL BLOOMFIELD AND CHARLES F. CLARK, OF LYNN, MASSACHUSETTS, ASSIGNORS TO FRANK E. WRIGHT AND CHARLES H. WARD, OF SAME PLACE.

SEAM-RUBBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 393,351, dated November 27, 1888.

Application filed May 26, 1887. Serial No. 239,391. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL BLOOMFIELD and CHARLES F. CLARK, both of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Seam-Rubbing Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to that class of machines commonly employed in manufacturing boots and shoes for the purpose of "rubbing down seams."

The nature of this invention is fully described and specifically claimed hereinafter.

Referring to the drawings, Figure 1 is a side elevation of the machine embodying this invention. Fig. 2 is an end elevation of the machine. Fig. 3 shows the slide which carries the rubbing-tool holder in plan view, together with a portion of one of the main shafts and the connection thereto. Fig. 4 is a view of a section on line 4 4, Fig. 2. Fig. 5 is a vertical section on line 5 5, Fig. 1.

In the drawings, A' represents the supporting-frame, in which are journaled the two shafts A and B. These shafts are connected by intermediate gearing, *n n n*, as represented in Fig. 1 of the drawings. On the end of the shaft B is a fixed wheel, *h*, that turns with the shaft B and constitutes the supporting-bed for the material to bear upon while being rubbed. In the end of shaft A is an eccentric-pin, *f*, that operates a pitman, *b*, and reciprocates the slide *e*, which slide is mounted in a suitable supporting-block, and said block is fixed upon the machine-frame, all as more particularly shown in Fig. 3 of the drawings. The block or slide *e* is further constructed to carry the tube *d*, and in the bottom end of this tube is inserted the rubber *a*. (See Fig. 5.) The tube also contains a coil or spiral spring, *k*, which operates to press the rubber downward and hold it upon the material with sufficient pressure to open and compress the edges of the seam, and the tension of the spring may be varied and modified by suitably adjusting the plunger-bolt *m*. The method of adjusting the bolt is obvious. We have demonstrated by actual working of the machine that the results obtained with a rubbing-tool mounted in the slide *e* are better and more uniform than have been heretofore obtained with a tool mounted in a slide or frame made to travel in a curved path. Besides this, the machine or tool operating in this manner is noiseless and easy in its movements, and much of this we attribute to the construction and arrangement of the slide *e*.

In the end of the machine-head is a socket or suitable hole to receive the plunger-rod 4, which is employed as a support for devices hereinafter referred to. The bolt 5 (see Fig. 4) passes horizontally through the bottom end of said plunger 4 and supports the rear ends of the arms 6 6. Said arms have in their forward ends, respectively, a bolt, 7 7, on which are loosely mounted the respective wheels 8 8, as shown. The wheels 8 8 are designed to bear upon the material at each side of the rubbing-tool and co-operate with work-supporting wheel *h* to move forward the material. To this end the wheels 8 8 are beveled conformably to the sides of the work-supporting wheel, and are located one on each side of the rubbing-tool, as fully shown in said Fig. 4. The wheels 8 8 are pressed constantly downward by springs 9 9, which springs are fixed upon and supported by the machine-frame, and, reaching downward and forward, respectively, bear upon the arms 6 6 with yielding pressure, and also connected to the end of the plunger 4 is a foot, 10, that, extending downward and forward, as shown, bears upon the material just in front of the rubbing-tool, and in the socket or hole above the plunger is a spiral spring, 12, that operates to force the plunger downward with yielding pressure.

In operation the workman places the material upon the wheel *h* and moves it forward. The edges of the seam are first opened and laid over by means of the foot 10. The overturned edges next pass under the wheels 8 8, and the rubbing-tool operating between the wheels 8 8 rubs down, compresses, and flattens the seam while the material is fed forward. The particular construction shown in the drawings and thus far described represents the wheels 8 8 as each mounted on a separate supporting-

arm, the arms being pressed downward by independent springs 9 9, and consequently capable of yielding upward independently of each other. We have employed this construction with most satisfactory results. We find that each wheel bears regularly upon the material, adapts itself readily to the varying thicknesses of the material, and we believe this to be the best way of constructing the arms and wheels.

We do not confine ourselves to the precise details of arrangement of the operating parts, as these may be varied as mechanical skill may dictate.

We do not consider it necessary to have the foot 10 composed of spring material; but in many kinds of work it seems advisable to have it slightly yielding.

Having thus described our invention, we claim and desire by Letters Patent to secure—

1. In combination, the support for the work, as *h*, the block and head secured to the frame, the slide *e*, adapted to reciprocate therein, carrying the rubbing tool, the shaft A, having cam *f* secured thereto, and the pitman connecting the slide and cam, substantially as described.

2. In a seam-rubbing machine, and in combination, a supporting-wheel, as *h*, for the work, a slide, as *e*, adapted to reciprocate in a substantially straight line, means for giving said slide its movement, and a rubbing-tool, substantially as described, carried by the slide.

3. In a seam-rubbing machine of substantially the construction described, and in combination, the wheels 8 8, arms for supporting the wheels, said arms being extended rearwardly and connected to a vertically-movable plunger, 4, a spring for pressing the plunger downwardly and springs for pressing the arms downwardly, a supporting bed or wheel for the material, a rubbing-tool, and a presser-foot carried by the plunger and arranged to bear upon the material in front of the rubbing-tool, substantially as described.

4. In combination, the support for the work, as *h*, the rubbing-tool, the plunger 4, supported by the machine-frame, the presser-foot, as 10, supported by the plunger, the wheels 8, also carried by the plunger, connected thereto by arms hinged or pivoted to the plunger, a spring for pressing the plunger and presser-foot downward, and a spring for pressing the wheels downward independent of the plunger and presser-foot, substantially as described.

5. In a machine of substantially the construction described, in combination, the wheels 8 8, arms for supporting the wheels, said arms being extended rearwardly and hinged or jointed independently of each other to the vertically-movable plunger 4, a spring for pressing the plunger downward, and separate springs for pressing downward the arms, a wheel or bed for supporting the material, a rubbing-tool, and a presser-foot arranged to bear upon the material in front of the rubbing-tool, substantially as described.

6. In combination, a suitable support, as *h*, the rubbing-tool, the wheels 8, arranged to act upon either side of said support, and means, substantially as described, for supporting said wheels and permitting them to have movement toward and from the support independent of each other, substantially as described.

S. BLOOMFIELD.
CHARLES F. CLARK.

Witnesses:
G. AUSTIN,
C. B. TUTTLE.