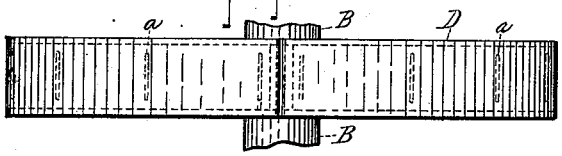
C. R. RATHBUN & F. W. ADAMS.

Sand-Paper Roll.

No. 202,119. Patented April 9, 1878

FIG. 1.



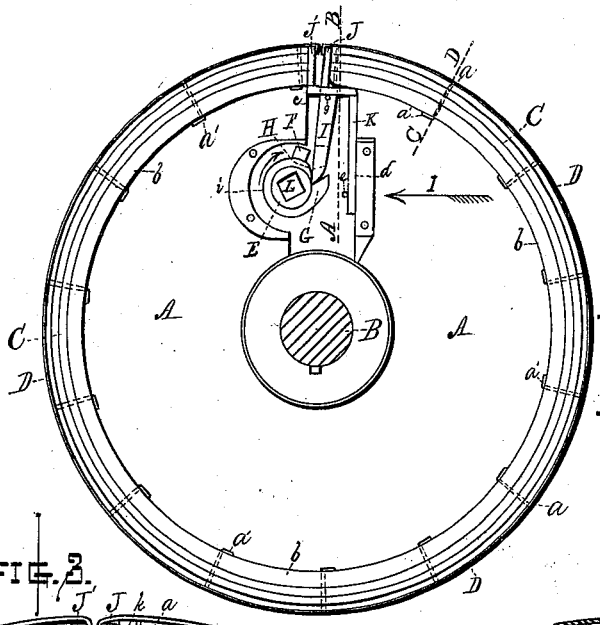


FIG. 2.

FIG. 2.

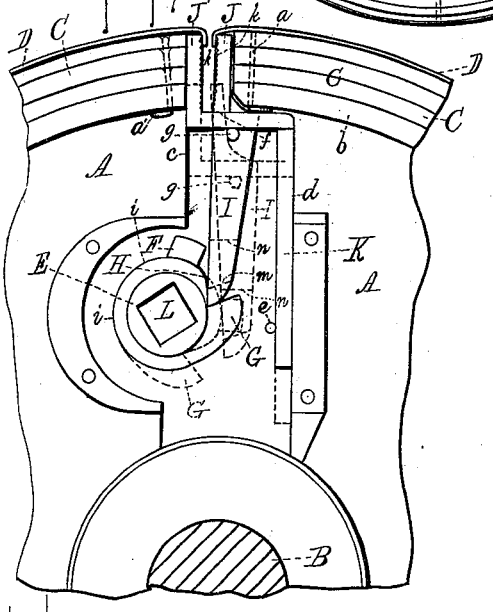


FIG. 4.

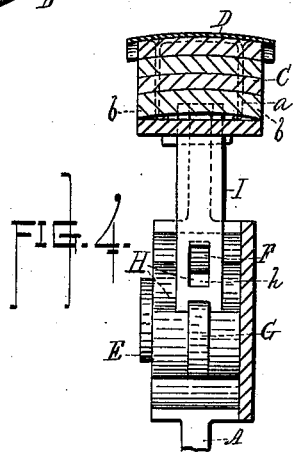
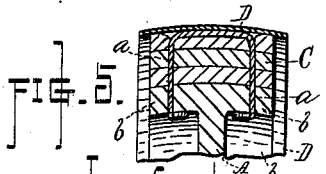


FIG. 5.



Witnesses;

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UNITED STATES PATENT OFFICE.

CHARLES R. RATHBUN AND FREDERICK W. ADAMS, OF WORCESTER, MASS.

IMPROVEMENT IN SAND-PAPER ROLLS.

Specification forming part of Letters Patent No. **202,119**, dated April 9, 1878; application filed January 9, 1878.

To all whom it may concern:

Be it known that we, CHARLES R. RATHBUN and FREDK. W. ADAMS, both of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Locks for Holding Sand-Paper, &c., upon Wheels or Rolls; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a plan or edge view of a wheel with one of our improved locks applied thereto. Fig. 2 represents a side view of said wheel and lock, the outside capping or cover of the lock being removed to show its operating parts more clearly. Fig. 3 represents, upon an enlarged scale, a side view of a portion of a wheel with our improved lock applied to the same, the device being shown thrown up or unlocked in full lines and drawn down or locked in dotted lines. Fig. 4 represents a section through the lock, drawn also upon an enlarged scale, taken on line A B, Fig. 2, looking in the direction indicated by arrow 1 of the same figure; and Fig. 5 represents a section on line C D through the sand-paper, felt, and flanges of the wheel, showing one of the wire staples by means of which the felt is secured upon the wheel.

To enable those skilled in the art to which our invention belongs to make and use the same, we will proceed to describe it more in detail.

In the drawings, the part marked A represents a wheel manufactured from iron or other suitable material, and B a shaft, upon which it is arranged and secured, the latter being driven by power imparted from the main shafting.

The periphery of wheel A is covered with two or more thicknesses of felt or other similar material, C, for the purpose of forming a soft surface upon which to apply the sand-paper or other material D. The felt C is secured upon the wheel by means of wire staples *a*, which are placed crosswise of the surface of the wheel, the ends *a'* being passed through the felt and flanges *b b* of the wheel, and clinched underneath, as is fully represented in the drawings.

By this method of using wire staples *a* and securing them crosswise of the surface of the wheel, as aforesaid, a much softer and better surface is obtained upon which to place the sand-paper for polishing than by the method of sewing the felt on lengthwise or around the wheel by means of thread or cord.

Another advantage of this method is that it is much more durable, and therefore more easily kept in repair. When sewed on with thread or cord, if the latter becomes worn and broken, it is necessary to sew it all over, or nearly so, in order to securely hold it, while by employing staples *a*, if one or more of them become broken, (which they are not liable to do very frequently, being made of soft pliable metal,) another may be applied in its place, which operation, as will be seen, is much more simple than the former.

The felt may be secured upon the wheel by the use of a greater or less number of staples, as desired.

E is a hub, upon which are formed two cogs or teeth, F and G. The surface H, between cogs or teeth F and G, acts as a cam to operate lever I in opening and shutting jaws or pinchers J and J', between which the ends of the sand-paper are caught and drawn down in tightening said paper upon the surface of the wheel. Jaw J' and its arm or lever K have no swinging motion, their action being only in sliding up and down against the sides *c* and *d* of the wheel with the operation of lever I and its jaw J. Jaw J' and its arm K are held in position by means of a pin, *e*, against which the part K bears. In this instance the parts I and K are hinged together by passing the part I through the part K, with the edge *f* of jaw J against the part K, and securing the same by means of a pin, *g*, inserted in the part I upon the opposite side of said part K, thus obtaining a simple and durable hinge, although any other manner of forming the same may be employed, if desired.

As will be observed by the drawings, lever I is provided with a slot, *h*, and the end of said lever rounded, for the purpose herein after described.

The operation of tightening and securing a piece of sand-paper (which we will suppose it to be in this instance) over the felt upon a wheel is as follows: The paper is placed upon the wheel with the two ends between jaws J J′, when the operative then applies a key or wrench, provided for the purpose, in square opening L, and turns hub E to the right, which operation throws up the end of lever I by the action of cam H, as before explained, and thereby closes the jaws upon the paper, the end of the lever having now passed out of and by the action of the cam, and resting upon the circular surface *i* of hub E, which is so formed and arranged as to raise said lever just sufficient to securely hold the paper between the jaws. To more securely guard against the ends of the paper being drawn out from between the jaws, the inner surfaces *k k* of the latter are roughened, as represented in Figs. 2 and 3 of the drawings. As hub E is turned to the right, cog or tooth F passes into slot *h*; and at about the same time that circular surface *i* of hub E is brought to bear against the end of lever I, thus securely pinching the paper between the jaws, as before explained, said tooth F strikes the end *m* of slot *h*, and as said hub E is further turned the jaws are drawn down, with the ends of the paper between them, into the position represented by dotted lines, Fig. 3, thus giving to the paper the proper tension necessary to securely hold it upon the wheel in the operation of polishing.

As one piece of sand-paper becomes worn and unfit for use, it may be removed and a new piece applied in its place by simply turning hub E to the left, which operation causes tooth F to strike against the end *n* of slot *h*, throwing the jaws up a short distance, when cog or tooth G then strikes the end of lever I and throws them clear up, thus opening the jaws and releasing the paper by the reverse action of cam H upon the end of lever I.

Those skilled in the art to which our invention belongs will readily perceive, from the foregoing description, the great practical advantages derived from our mode of construction over those now in use. The operation of securing a piece of sand-paper upon a wheel or removing the same is much more quickly and easily performed, while at the same time the parts are very simple and durable, and well protected from dust and other foreign substances.

We design to manufacture the locking device and wheel from steel or iron, although any other suitable material may be employed, if desired.

Another advantage of our mode of construction is, that much less paper is wasted, as only about one-eighth of an inch of each end of the paper is passed between the jaws, making the whole waste, when entirely drawn down, only about one-half as much as by the use of any similar device now in use.

Jaws J J′ may be opened and shut by moving the arm or lever I toward the arm or lever K, as herein shown and described; or the parts may be so constructed as to perform the same operation by throwing the arms apart, without departing from the principle of our invention.

Although we have herein shown and described our locking device as applied to a wheel only, it may be applied equally as well to a roll or cylinder for polishing and other purposes without departing from the principle of our invention, the only difference when applied to the latter being a slight change in the form of the parts and the employment of two cams, H, and a double set of cogs or teeth, F and G, with each lock, said cams and cogs or teeth being formed or secured upon a suitable hub or shaft.

Two or more locks may be applied to a roll or cylinder, as desired.

Having described our improvements in locks for holding sand-paper, &c., upon wheels or rolls, what we claim therein as new and of our invention, and desire to secure by Letters Patent, is—

1. The combination, with wheel A, of hub E, provided with cogs or teeth F and G, cam H, cam-lever or swinging part I J, provided with slot *h*, and sliding part J′ K, substantially as and for the purposes set forth.

2. A hinged locking device for holding sand-paper, &c., upon wheels or rolls for polishing purposes, consisting of the parts I J J′ K, operated by a hub, E, provided with suitable cogs F and G, and a cam or cams, H, substantially as shown and described.

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FREDERICK W. ADAMS.

Witnesses:
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ALBERT A. BARKER.