(No Model.) 2 Sheets—Sheet 1.

S. H. BROOKS.

MANUFACTURE OF BUFFER WHEELS.

No. 572,243. Patented Dec. 1, 1896.

Fig. 1.

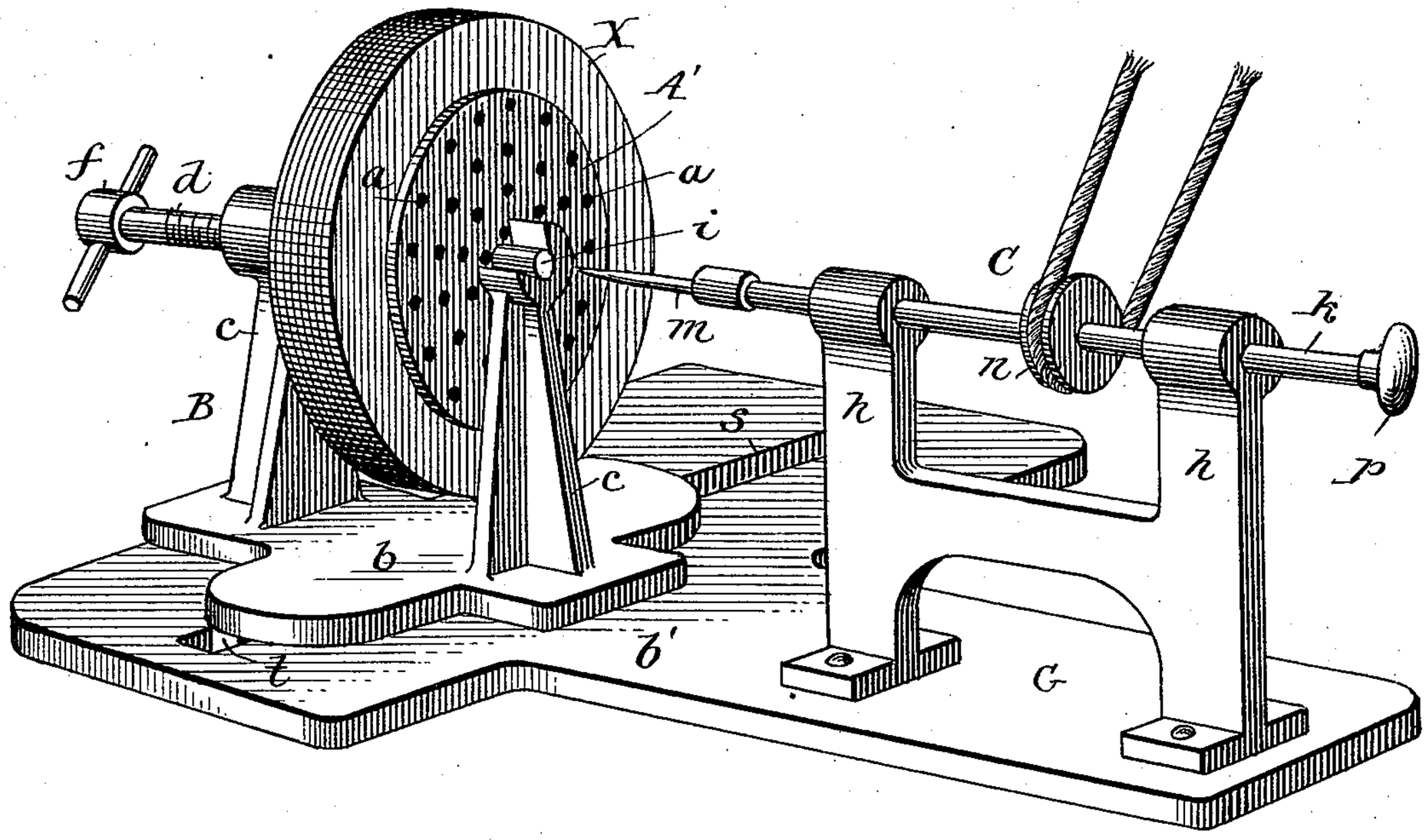
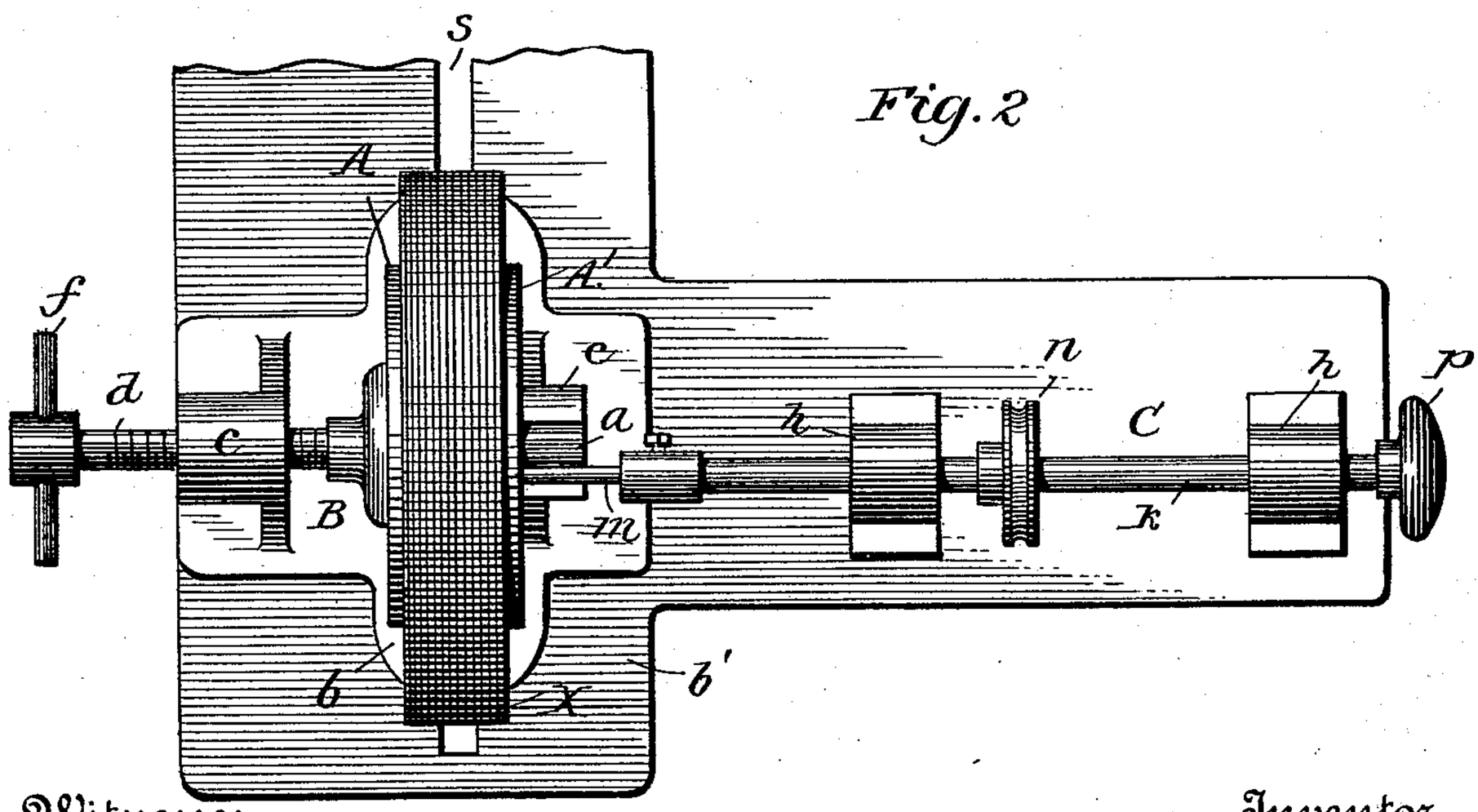


Fig. 2



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(No Model.) 2 Sheets—Sheet 2

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Fig. 3.

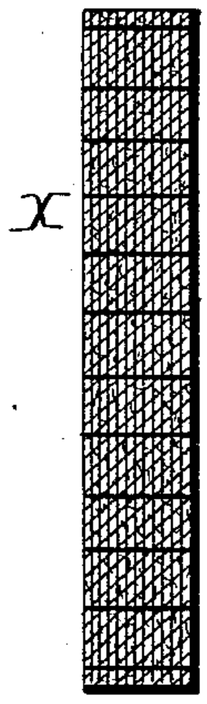


Fig. 4.

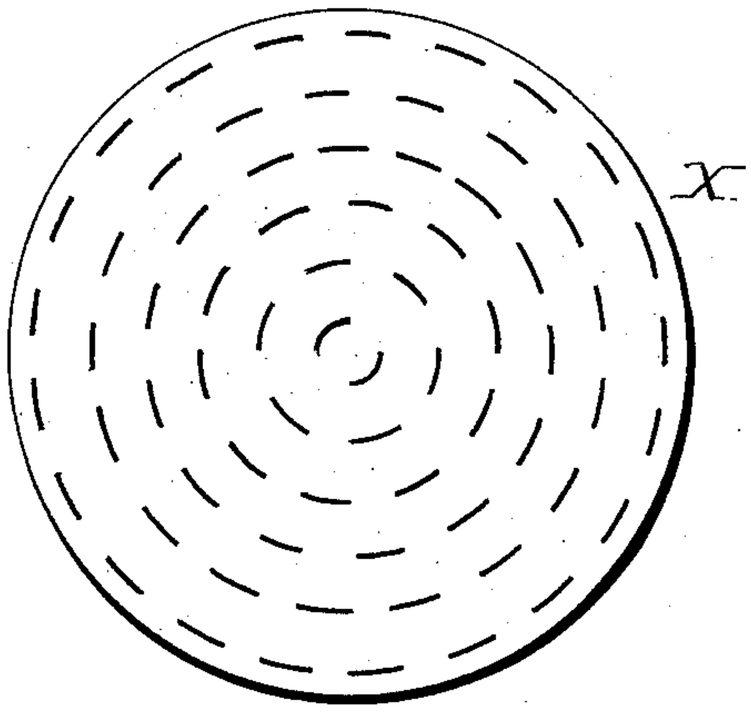


Fig. 5.

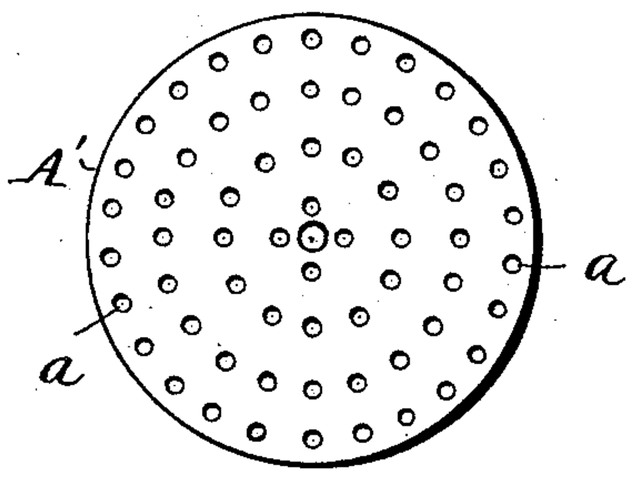
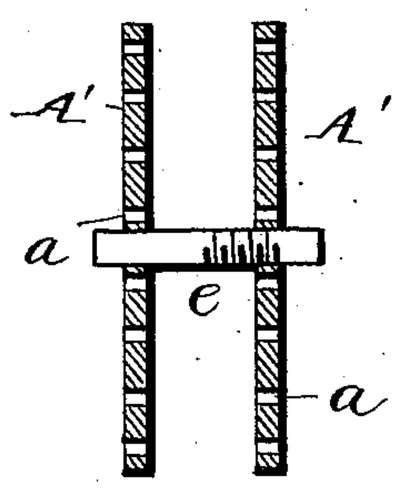


Fig. 6.



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UNITED STATES PATENT OFFICE.

STEPHEN H. BROOKS, OF NEW YORK, N. Y., ASSIGNOR TO THE FOOT & BROOKS COMPANY, OF SAME PLACE.

MANUFACTURE OF BUFFER-WHEELS.

SPECIFICATION forming part of Letters Patent No. 572,243, dated December 1, 1896.

Application filed May 11, 1895. Serial No. 549,000. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. BROOKS, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Buffer-Wheels, of which the following is a specification.

My invention relates to the manufacture of that class of "buff-wheels" or "polishing-wheels" consisting of disks of fabric or other material sewed together; and my invention consists in the means hereinafter fully set forth for firmly holding the disks in position, accurately perforating, and rapidly sewing the same together.

In the accompanying drawings, Figure 1 is a perspective view illustrating the apparatus employed. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a transverse section of the buff-wheel completed. Fig. 4 is a side view of the same. Fig. 5 is a face view of one of the templets. Fig. 6 is a transverse section of the templets, illustrating a modification.

The body X of the wheel consists of a series of disks, generally of cotton cloth or canvas, although it may be of chamois-skin or other material, and is generally formed by superposing a number of layers of the material and cutting through all at once in a circle.

After cutting and assembling together the disks of material in any suitable manner it is necessary to sew them by transverse stitches, and to facilitate this operation I clamp each body of disks between two clamping-plates or templets A A′, which, as shown, are each circular, and each with several series of openings *a* arranged in concentric circles at the points where the concentric lines of stitching should be in the finished article.

The templets may be clamped upon the disk in any suitable manner. For instance, the disks may be punched through the center to receive a stem *e*, extending from the templet A and threaded to fit an opening in the templet A′, which, when in position, may be turned to bring the two plates to bear firmly upon the opposite sides of the disks. I prefer, however, to dispense with the necessity of perforating the disks by clamping the two plates, with the disks between them, in a portable clamp B, consisting of a base *b*, having two uprights *c c*, between which the plates and disks are placed, each upright with a socket at the upper end, one socket receiving a trunnion *i* upon the plate A and the other receiving a screw-shaft *d*, with a cross-bar or handle *f*, by means of which any desired pressure may be applied to press the disks between the plates.

The socket to receive the trunnion *i* is cut away at one side, so as to permit a drill or other suitable perforating instrument to be passed readily into the inner row of openings around the trunnion.

To facilitate the drilling of the openings, I adapt the clamp B to bearings of a boring-machine or drill C, having standards *h h* to receive the spindle *k* of the drill *m*, and on the spindle, which slides freely in the standards, is a grooved pulley *n* for receiving a driving-band, and on the end of the spindle is a loose hand-grasp or handle *p*, by means of which the spindle *k* may be pushed back and forth.

In the base *b′* of the drill is a transverse slot *s* for receiving a rib *t* at the bottom of the clamp B, and which serves to hold the clamp in position upon the base *b′* and also to guide it when sliding back and forth opposite the tool *m*.

After a body of disks has been clamped between the plates A A′ in a clamp B the latter is placed in position on the base *b′* of the drill and the operator by pressing upon the handle *p* introduces the end of the tool *m* into one of the inner rows of holes *a* and passes it quickly through the same, then withdraws it, turns the plate and disk to bring another hole in line with the tool, and repeats the operation until the tool has passed through all of the inner row of openings. The operator then slides the clamp B to bring one of the next row of openings opposite the tool and turns the plates and disks as before, perforating the disks upon the next row, and these operations are repeated until the disks have been perforated through all of the holes of the plates, after which another series of perforations are made by the operator around the outer edges of the plates. The clamp is now removed from the drilling-machine and its place supplied by another containing a

like series of disks, which are operated upon in like manner as the first, after which a third clamp, with a series of disks, is placed in position and operated upon, and so on with any desired number of clamps and disks. Where the plates are provided with means for clamping them together without the use of a separate clamping-frame, as in Fig. 6, the frame of the drilling-machine is provided with a suitable bearing or rest for the plates as the latter are presented to the tool. After each series of disks has been thus perforated it is carried, together with the clamping means, whatever the same may be, to the table of a "stitcher," who with a needle and thread sews directly through the outer series of openings, beyond the edges of the plates, thereby binding the disks firmly together in position, after which the clamping-plates or templets may be removed, and successive circles of stitches may be sewed through the successive series of holes in the disks, thereby completing the buff-wheel.

By the above-described appliances I am enabled to hold the disks closely compacted until they are sewed, to rapidly perforate the body of material composing each disk, and operate upon successive bodies of material without any delay between the operations in the drilling-machine, while the operations of the stitcher are in nowise delayed or impeded by the operations of the drilling-machine.

It will be evident that the character of the templets will depend to a very great extent upon the character of the stitching desired, and that the drilling-machine and the character of the tool used therein may be of different constructions.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

1. An apparatus for the manufacture of buff-wheels, consisting of a drilling-machine provided with a tool and means for operating the same, two perforated clamping-plates or templets, and means for clamping them upon a body of disks, and a movable support in the said machine for the said plates and disks, substantially as described.

2. The combination in an apparatus for making buffer-wheels, of perforated plates, and means for carrying the plates toward each other and for pressing them upon intermediate buffer-disks, and means for supporting the disks and plates to permit the same to be revolved together, and a drill, and means for presenting the different perforations of the plate opposite the drill, substantially as described.

3. The combination of the drill mechanism provided with a perforating-tool *m*, and means for operating the same and a clamp B, provided with bearings for the trunnions, of templets, one of said bearings cut away at one side to permit the tool to pass close to the trunnions, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STEPHEN H. BROOKS.

Witnesses:

GEO. W. CASE, Jr.,

ROBT. CONNOR.