

(No Model.)

2 Sheets—Sheet 1.

W. H. DIVINE.
BUFFING WHEEL.

No. 563,459.

Patented July 7, 1896.

Fig. 1

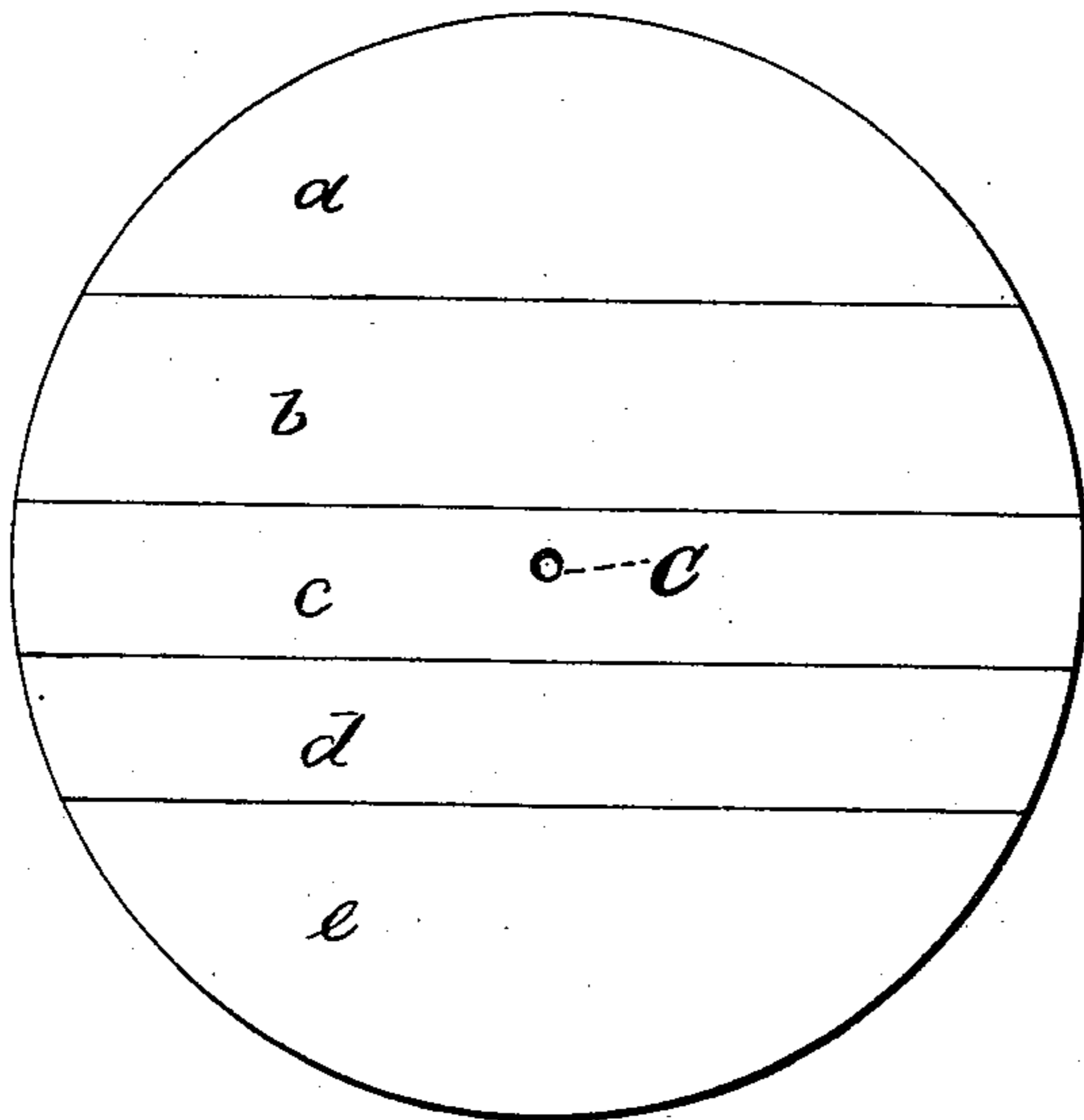
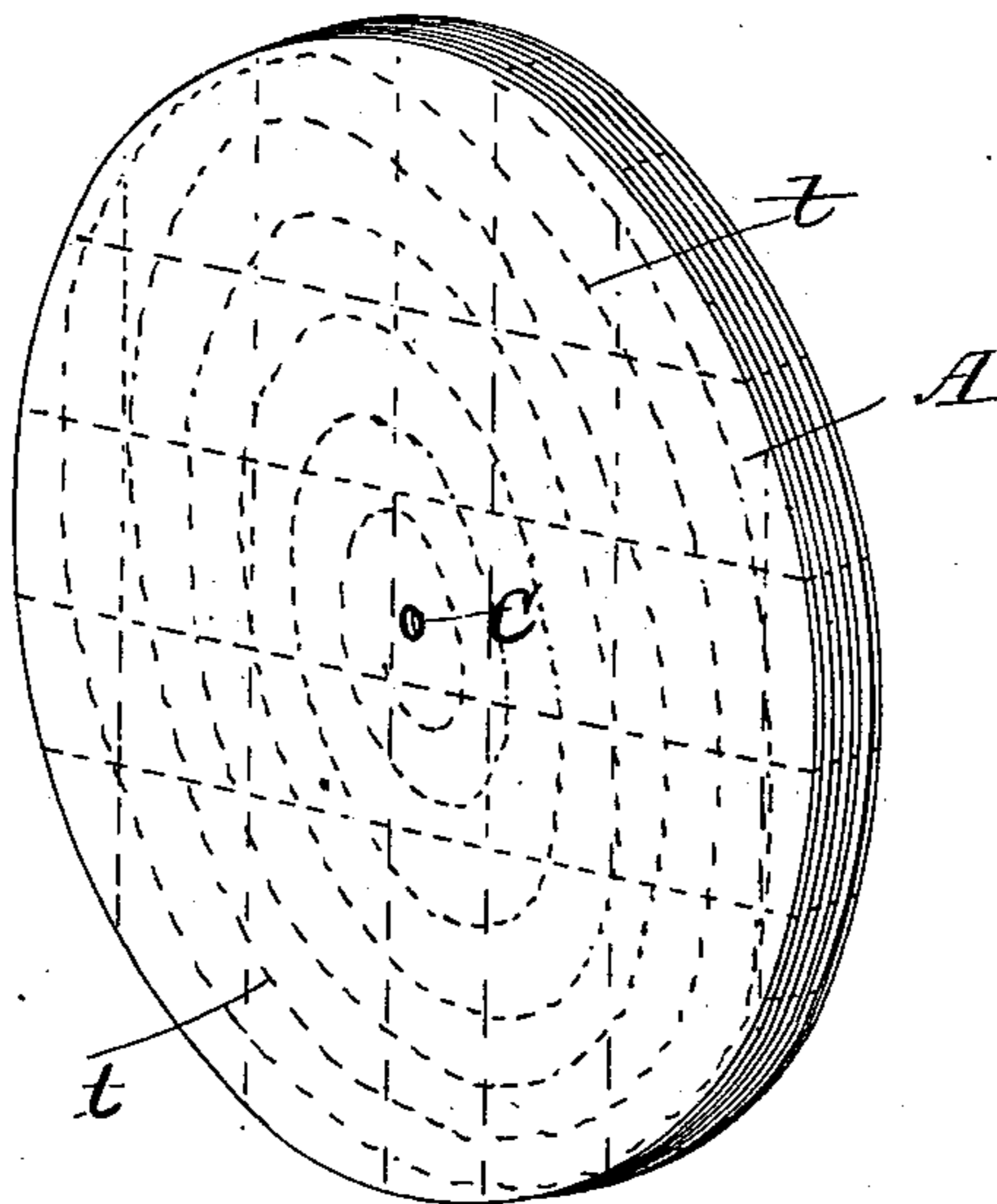


Fig. 4.



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Inventor
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by George C. Wing,
his Attorney

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2 Sheets—Sheet 2.

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Fig 2.

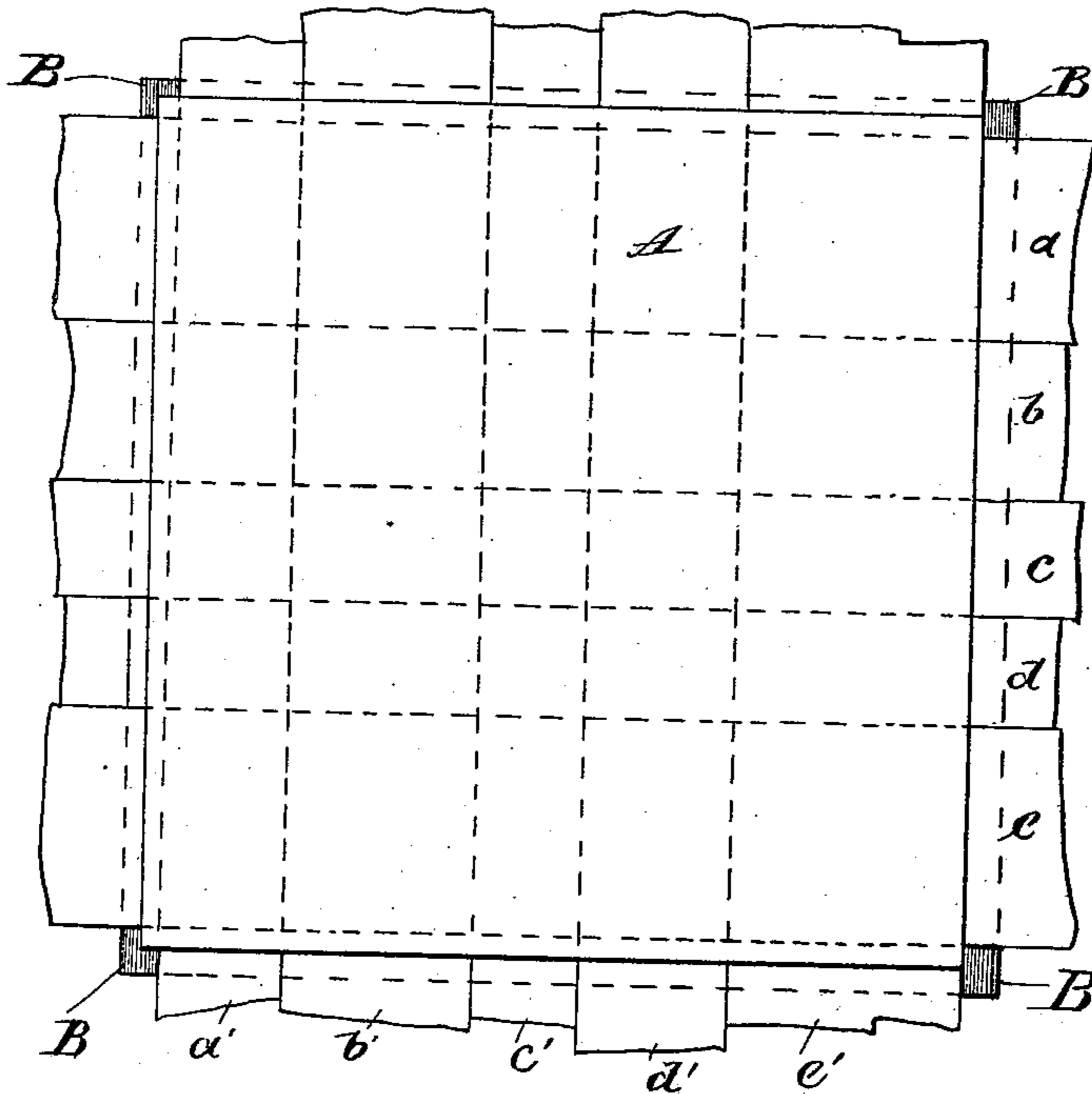
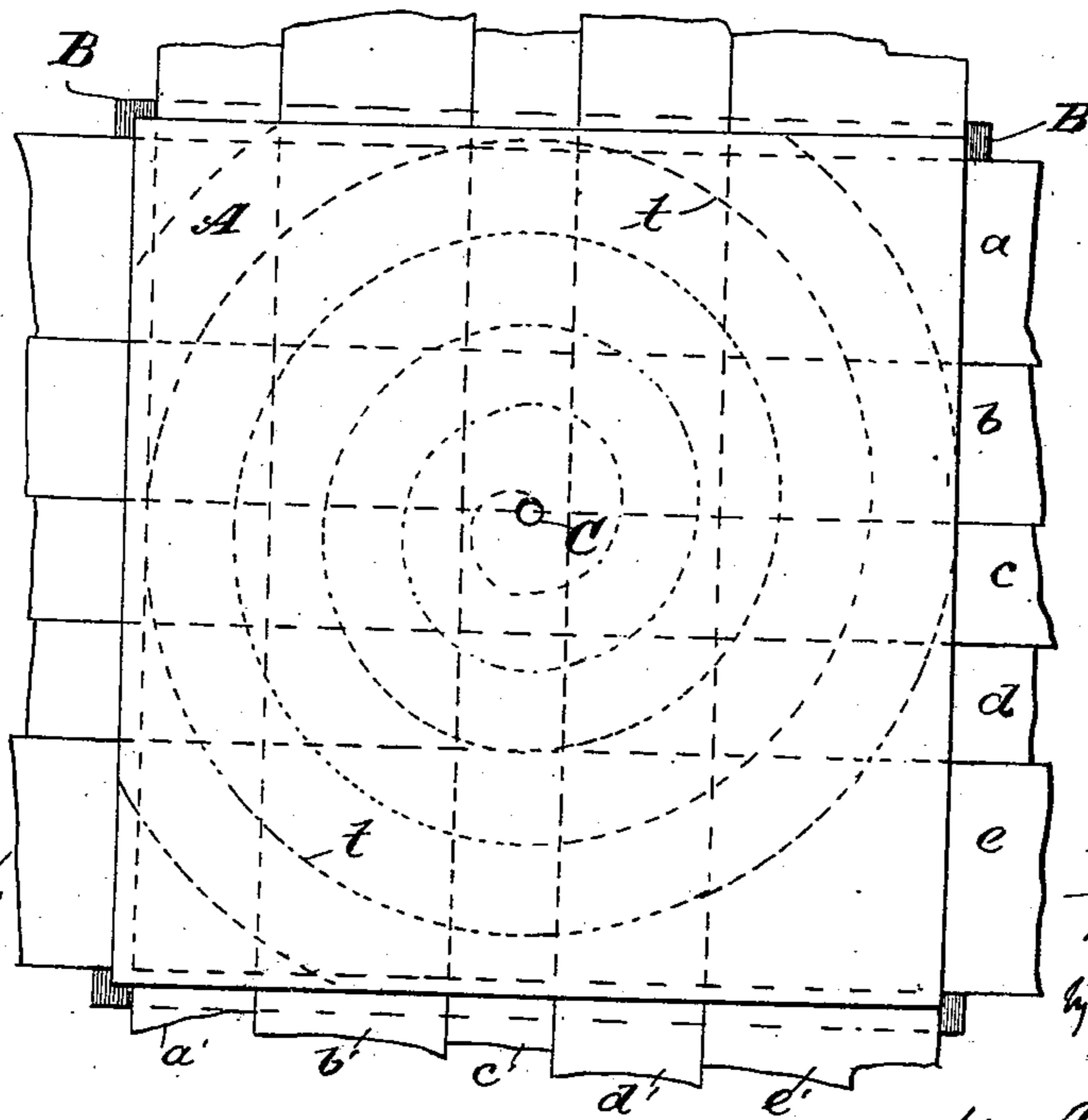


Fig 3.



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by George C. Wing,
his Attorney

UNITED STATES PATENT OFFICE.

WALLACE H. DIVINE, OF UTICA, NEW YORK, ASSIGNOR TO B. H. DIVINE,
OF SAME PLACE.

BUFFING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 563,459, dated July 7, 1896.

Application filed March 30, 1896. Serial No. 585,391. (No model.)

To all whom it may concern:

Be it known that I, WALLACE H. DIVINE, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented a new and useful Improvement in Buffing-Wheels, of which the following is a specification.

As is well known to those versed in the art of buffing or polishing metals, a certain class of wheels employed for the purpose are composed of disk-like layers of cotton, woolen, or like fabrics bound to a convenient thickness and adapted in such form to be assembled on the mandrel in groups of any desired number. It is equally well known that it is desirable for the sake of economy to utilize scrap or waste material so far as is practicable in the construction of buffing-wheels of this class, and that various modes of building up these devices from such scrap and waste material have accordingly been devised. These modes are reducible to those in which the scraps to be used are indiscriminately matted or massed between exterior pieces, and thereafter secured by stitching, or where the component scraps or pieces, having first been prepared, in V or sector like forms are piled in courses one upon the other to the desired thickness, and the wheel is then completed by through-and-through stitching between appropriate exterior pieces. This stitching is usually in spiral lines about one-half an inch apart extending from the center of the wheel to the circumference, as it is found that by such course a more equal fastening is secured.

Buffing-wheels of the peculiar type above described are open to several objections. When made from scraps having no uniform size or shape, and which necessarily can be laid according to no definite rule, the resultant is apt to be unbalanced, and will wear down unequally on the mandrel. An element of extreme danger to those operating these wheels is also present in proportion to the number and irregularity of shape of the component scraps or pieces in the same, inasmuch as when the parts are small and irregular in form and location throughout the wheel there are fewer points of connection in the same, and more numerous ends and free

edges to catch the work applied, and either hurl the same off with great force or be itself torn from place.

An additional objection to the type of scrap-wheel above specified, and especially to that constituted of V-shaped parts, as described, is the considerable time and attention required for the making of the same. In wheels of the latter type, for instance, all the numerous sector-like pieces must be first prepared and thereafter be separately laid by special and independent processes. From the nature of the construction there are several steps to the same and which cannot well be united.

It is the chief purpose of my present invention to provide a buffing-wheel which shall utilize cloth scraps and waste of the kind that universally abounds, and in such manner as to combine great ease of construction with a high degree of strength and efficiency in the finished implement. I accomplish the said purpose by the method of constructing buffing-wheels hereinafter particularly described, and illustrated by the drawings accompanying and made a part of this application.

In the drawings, Figure I is an outline of the shapes of a particular set of cloth pieces when assembled to constitute a single sheet or disk-like layer of my said wheel. Fig. II is a perspective view downwardly upon a pile of said scrap material when in position to be sewed together. Fig. III is a similar view after the same has been sewed and indicating the course of the stitches. Fig. IV is a semiperspective view of a completed wheel.

In said figures similar letters denote similar parts in each case.

Referring now more particularly to the said drawings, *a, b, c, d,* and *e* indicate the form of the component pieces or scraps of one of the disk-like layers constituting my said buffing-wheel. Said pieces or scraps are clearly segmental in shape, and adapted, when laid side by side, to complete a circular layer or sheet. It is plain that unless my said invention carried with it some principle of construction not apparent upon a mere view of Fig. I and the special requirement as to the shapes of the scraps or pieces therein indicated, its ad-

vantage over previous inventions of the sort would not be obvious. It is therefore necessary to understand the remaining figures of the drawings and the peculiar process which they disclose in order to fully realize the improvement I have obtained. To this end and with further reference to the drawings I now proceed to explain the method by which my said wheel and the parts required therein, as shown in Fig. I, can be derived by a ready and very simple process. I use in this process for the purpose any suitable fabric or material decided upon and in the form of narrow rectangular strips or pieces approximating in length the diameter of the wheel to be constructed. It will be found advisable to use two outside or exterior pieces of whole cloth between which to build up the several layers of strip pieces. Upon one of said exterior pieces I lay a series of the said rectangular strips side by side until a square of the material in question (in which the diameter of the wheel may be inscribed) is thereby obtained and wherein the strips are all extended longitudinally in the same direction. I next superimpose, across this square and at right angles to the several strips composing the same, a similar row of like strips, and thereafter repeat the operation of piling said strips in layers transversely one to the other until the required thickness of the wheel is thereby reached. The second of the exterior pieces is then superimposed, and the result is as indicated in Fig. II. In said Fig. II, A is the top of the said two exterior pieces used, and B the bottom piece. Immediately below A are ranged the several strips *a b c d e*, as indicated by the dotted lines and the extremities of the said strips at the sides of the drawings. Similarly are indicated the second row of strips *a', b', c', d', and e'*, beneath the said row of strips *a, b, c, d, and e* and at right angles thereto. A third and other rows are supposed to have been in like manner laid beneath the two rows, as indicated, until the

lower row upon the bottom exterior piece B is reached. It is evident that no special care is required in building up a pile for the said purpose as just described, but that the operation can be proceeded with without any special preparation of the material used and in a purely routine and rapid manner. The said pile having been built up as shown in Fig. II, it is in convenient form to be fastened together, which preferably may be done by sewing, and along a spiral course, as indicated by the line *t* in Fig. III.

When the several parts have been secured in the relations just explained, and shown in Figs. II and III, it only remains to stamp or cut the wheel therefrom and puncture its center for its seat on the mandrel. Fig. IV represents such a wheel when thus obtained, the dotted lines in this, as well as in the other figures, being intended to show the edges of the several pieces in the two layers immediately below the exterior piece A.

I do not intend to limit my invention to the precise form and dimensions of the parts herein shown and described, nor, as broadly claimed, to the relative location of the strips in one of the said layers at a right angle to those in other layers; nor do I confine my said invention to any particular class of fabric or material or mode of securing the various parts to their required positions.

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

A buffing, or polishing wheel, consisting of a series of disks, severally composed of segmental-like strips, or pieces of suitable material, arranged longitudinally, as described, and superimposed upon, and secured to like strips or pieces similarly arranged in transverse directions thereto, substantially as shown and described.

WALLACE H. DIVINE.

Witnesses:

B. C. DIVINE,
B. H. DIVINE.