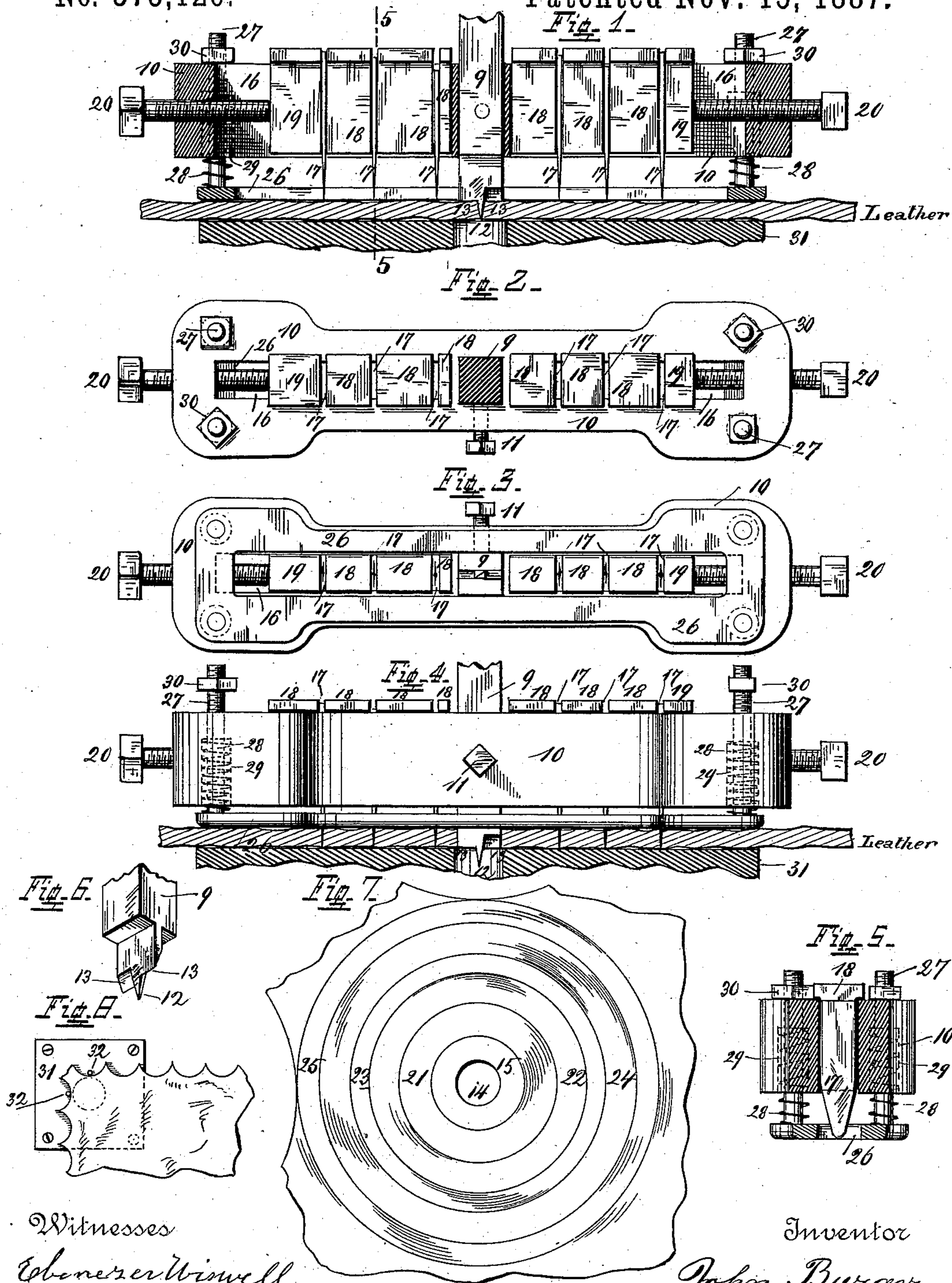


(No Model.)

J. BURGER.
WASHER CUTTER.

No. 373,126.

Patented Nov. 15, 1887.



Witnesses
Ebenezer Wiswell
Aaron E. Moore

Inventor
John Burger
By his Attorney
Carl Spengel

UNITED STATES PATENT OFFICE.

JOHN BURGER, OF CINCINNATI, OHIO, ASSIGNOR OF ONE HALF TO EBENEZER
WISWELL, OF SAME PLACE.

WASHER-CUTTER.

SPECIFICATION forming part of Letters Patent No. 373,126, dated November 15, 1887.

Application filed September 1, 1887. Serial No. 248,447. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURGER, a citizen of the United States, residing at Cincinnati, Hamilton county, State of Ohio, have invented a new and Improved Washer-Cutter, of which the following is a specification.

My invention relates to such tools as are used to cut washers out of leather or similar material, and the object is to have a tool which enables one to cut a number of washers at once without any material waste. I attain the objects of my invention by a construction illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section of the tool. Figs. 2 and 3 are top and bottom views, respectively. Fig. 4 is an elevation. Fig. 5 is a cross-section on line 5 5 of Fig. 1. Fig. 6 is a perspective view of the lower end of the shank. Fig. 7 is a plan view of a nest of washers after being cut and before separated. Fig. 8 is a similar view of my gage-plate on a smaller scale.

The tool, which is a revolving one, is to be used in connection with a drill-press, or a special machine might be devised for it. It is connected with the mandrel of such a machine by its shank 9 in the customary way, like any other tool. The shank 9, being square, passes through a corresponding hole in the knife-holding frame 10 and holds it in position by means of a set-screw, 11. At its lower end the shank is provided with a center point, 12, which passes into the leather, in order to hold it before any of the knives begin to cut. (See Fig. 1.) Next to the center point and a little higher up are two cutting-edges, 13, which cut out the central hole, 14, of the smallest washer, 15. (See Fig. 7.) To both sides of the central hole of the knife-holder, through which shank 9 passes, are slots 16, which receive the knives 17 and spacing-blocks 18 19.

The knives consist of thin flat blades, (see Figs. 1 and 5,) and are kept apart as far as the width of the washers is desired to be by suitable spacing-blocks, 18. Against the end blocks, 19, are bearing two set-screws, 20, clamping spacing-blocks and knives tightly together and holding the latter firmly in place. Each knife cuts one washer—that is, the first knife

to the left from the central shank cuts washer 15, (the central shank cutting out the hole in it.) The first knife on the right side from the central shank, sitting farther out from the center than the knife mentioned previously, cuts washer 21. The second knife to the left from the center cuts washer 22, the corresponding knife to the right cuts washer 23, and so on.

Instead of having the central hole, 14, cut out by the cutting-edges 13 of the central shank, a knife similar to the other ones and properly set might be used. In this case the shank would only be provided with the central point, 12.

The mode of operation is as follows: The mandrel of the machine holding the tool is lowered by its lever (like in any drill-press) down to the leather, as shown in Fig. 1, the point 12 entering it. The tool is set to rotating and at the same time pressed down automatically by the machine or by hand. The knives having cut through the leather, the rotation of the machine is stopped and the tool is raised, leaving the washers as shown in Fig. 7. They are pushed apart, assorted, and are now ready for use or sale.

26 is a stripping-plate guided and held in place by four pins, 27. It is always pressed down by four spiral springs, 28, sitting in corresponding sockets, 29. As the knives penetrate the leather it yields upwardly, (see Fig. 4,) compressing its springs, which, when the tool is raised, expand again, and, pushing the plate down, strip the washers off of the knife-blades, in case they should stick thereto.

30 are nuts on the pins 27, which prevent their dropping out and at the same time may be used to regulate the drop of the stripping-plate. The lower edges of the former are preferably rounded off next to the leather, so as to present no resistance.

By having a large assortment of spacing-blocks of different size, any variety of washers as to number, width, and size may be cut out.

In order to be enabled to feed the material very quick under the tool and have as little waste as possible, I have provided a gage-plate, 31, being secured by countersunk screws to the table or bench of the machine and hav-

ing two pins, 32. This plate has to be of soft material, preferably of lead, so as not to injure the knives. The pins 32 must be lower than the thinnest leather to be used, so as not to be struck by the tool. They are ninety degrees apart with reference to the center of the tool and fit in the skeleton of the material, as shown in Fig. 8. Their radial distance from the center varies according to the different sizes of the largest washer in the nest, and consequently an assortment of gage-plates is necessary. The operator shaves the material against the two pins in a position, as shown in Fig. 8, as far as he can, which gives him a close cut with almost no waste.

I claim and want to secure by Letters Patent—

1. In a washer-cutter, the combination of a central shank, 9, having a center point, 12, and cutting-edges 13, a knife-holder, 10, suitably connected therewith, a series of knives, 17, a series of spacing-blocks, 18 19, and set-screws 20 to hold them together, as and for the purpose explained.

2. In a washer-cutter, the combination of a central shank, 9, having a center point, 12, and cutting-edges 13, a knife-holder, 10, suit-

ably connected therewith, one or more knives, 17, the necessary corresponding number of spacing-blocks, 18 19, set-screws 20 to hold them in position, and a spring-actuated stripping-plate, 26, as and for the purpose set forth.

3. In a washer-cutter, the combination of a shank, 9, having a center point, 12, and cutting-edges 13, a knife-holder, 10, suitably connected therewith, a series of knives, 17, a series of spacing-blocks, 18 19, means for holding blocks and knives together and in place in slots 16 of knife-holder, stripping-plate 26, guide-pins 27, and adjusting-nuts 30.

4. In a washer-cutter, the combination of a central shank, 9, having a center point, 12, a slotted knife-holder, 10, a series of knives, 17, a series of spacing-blocks, 18 19, means to hold knives and blocks in position, and a spring-actuated stripping-plate, 26, as and for the purpose described.

In testimony of which invention I hereunto set my hand.

JOHN BURGER.

Witnesses:

CARL SPENGEL,
AARON E. MOORE.

Correction in Letters Patent No. 373,126.

It is hereby certified that in Letters Patent No. 373,126, granted November 15, 1887, upon the application of John Burger, of Cincinnati, Ohio, for an improvement in "Washer Cutters," an error appears in the printed specification requiring correction as follows: In line 12, page 2, the word "shaves" should read *shoves*; and that the said Letters Patent should be read with this correction therein to make it conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 29th day of November, A. D. 1887.

[SEAL.]

D. L. HAWKINS,

Acting Secretary of the Interior.

Countersigned:

BENTON J. HALL,

Commissioner of Patents.