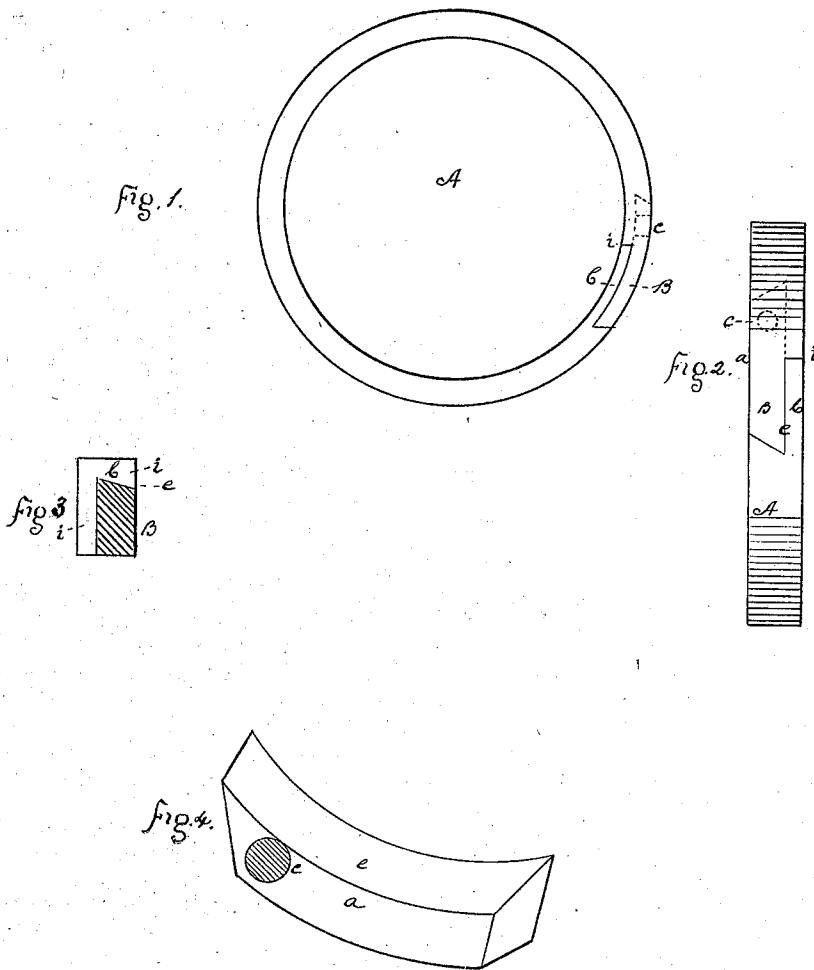


E. SULLIVAN.
Packing Rings.

No. 149,617.

Patented April 14, 1874.



WITNESSES

James L. Kay
Frederick Standish.

INVENTOR

Edward Sullivan
by Oakewell & Sons
his attys

UNITED STATES PATENT OFFICE.

EDWARD SULLIVAN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
WILLIAM REA AND GEORGE T. ROBINSON, OF SAME PLACE.

IMPROVEMENT IN PACKING-RINGS.

Specification forming part of Letters Patent No. **149,617**, dated April 14, 1874; application filed
December 13, 1873.

To all whom it may concern:

Be it known that I, EDWARD SULLIVAN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Packing-Rings; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an edge view of my improved packing-ring. Fig. 2 is a side view of the same. Fig. 3 is a section through *xx*, and Fig. 4 is a view of a detached portion of the ring.

Like letters of reference indicate like parts in each.

My present invention consists of an improvement in the manufacture of the packing-ring patented by me on October 26, 1869; and it consists in casting the ring proper upon a section forming one of the laps, the section being smoked at one end to prevent it from welding, so that when the ring is cut opposite to the smoked part it shall be free to expand. It also consists in forming the division-lines of the laps on a bevel.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

Hitherto these rings have been made by casting, and then planing or cutting the laps B and C. This method, on account of the extremely delicate work of finishing the laps to make their adjacent faces perfectly true, is very slow and costly.

To simplify, shorten, and cheapen the manufacture of these rings is the object of this invention.

I cut a curved piece, *a*, as shown in Fig. 4, which, having "smoked" at one end, I set in

the side of the mold in which the ring A is cast. The molten metal unites with the "un-smoked" end of the piece *a*, and flows around, but does not weld with the smoked end. When the casting is completed, I cut or sever the ring, as at *i*, opposite to the smoked part of the piece *a*; then the ring is free to expand. This way of forming the ring with its laps is easy and inexpensive, while the lines of division between the laps is perfectly true, and require no finishing.

I have found the old or plain lap is objectionable, because the end of the outer one throws up and admits the steam between them, which cuts off the corners, and causes the ring to leak. I prevent this by cutting the adjacent faces on a bevel, as shown at *e*. The overlapping edge of the lap C guides and holds the lap B as the ring expands. The follower, being bolted against the side of the lap, prevents its lateral displacement.

The piece *a* may be made by casting a ring with a beveled upper edge and cutting it in sections. The hole *e* is made to cause it to unite more readily in casting. This piece may be smoked in the middle, and left free to unite with the ring at both ends.

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

1. The method of forming the ring A with its laps B and C, by casting upon a section, *a*, properly smoked, and freeing the laps by cutting, as at *i*, substantially as described.

2. The laps B and C, having a beveled line of separation, *e*, substantially as described.

In testimony whereof I, the said EDWARD SULLIVAN, have hereunto set my hand.

EDWARD SULLIVAN.

Witnesses:

FREDERICK STANDISH,
T. B. KERR.