

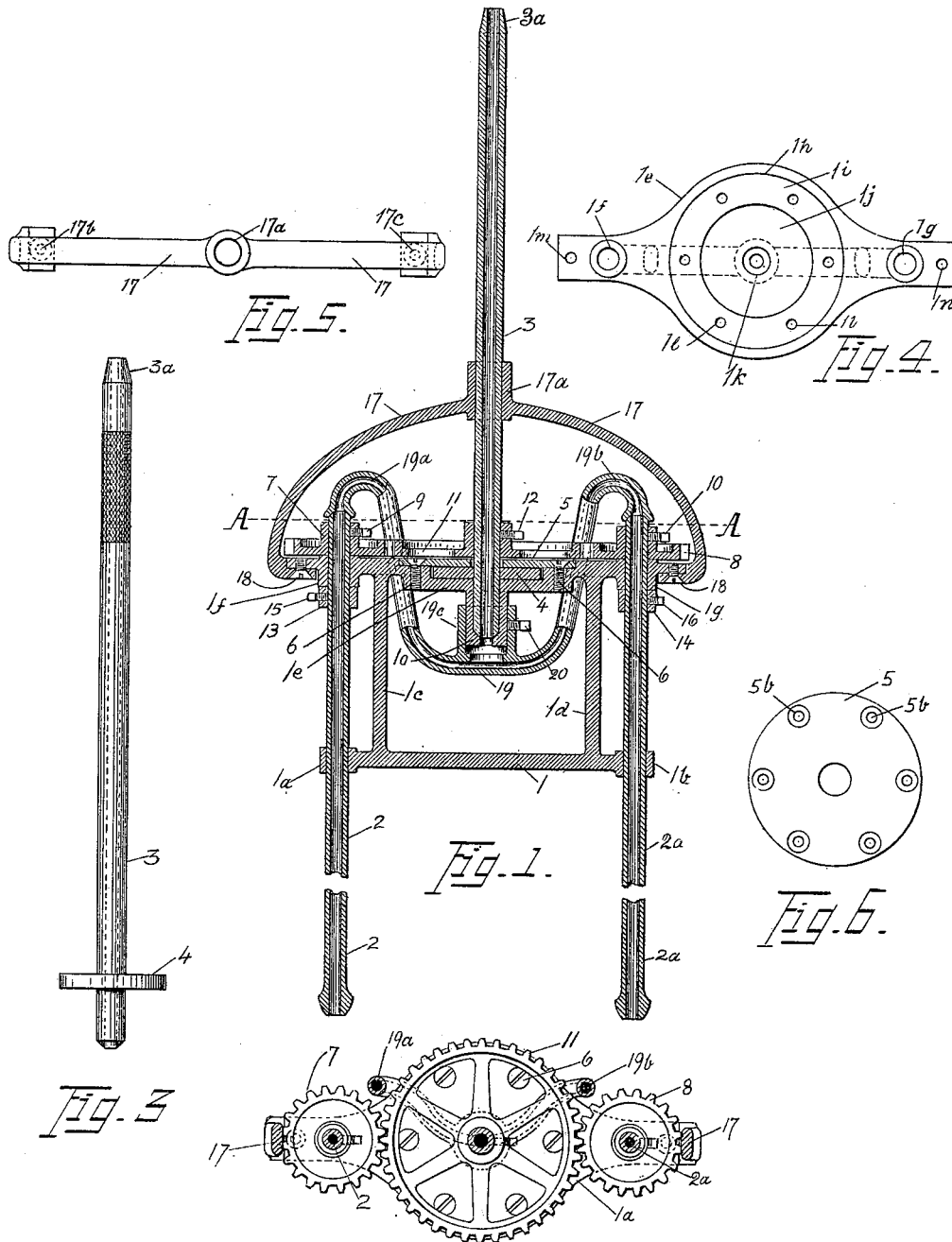
No. 646,038.

D. F. RICHARDSON.
GATHERING IRON.

Patented Mar. 27, 1900.

(Application filed Jan. 12, 1898.)

(No Model.)



Witnesses.
A. H. Raymond.
A. M. Polley.

Fig. 2.

Inventor.
Dana F. Richardson;
By J. A. Osbourne & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

DANA F. RICHARDSON, OF TOLEDO, OHIO.

GATHERING-IRON.

SPECIFICATION forming part of Letters Patent No. 646,038, dated March 27, 1900.

Application filed January 12, 1898. Serial No. 666,465. (No model.)

To all whom it may concern:

Be it known that I, DANA F. RICHARDSON, a citizen of the United States, residing at Toledo, in the county of Lucas, State of Ohio, have invented certain new and useful Improvements in Gathering-Irons, of which the following, with the accompanying drawings, is a full, clear, and exact description.

My invention relates to gathering-irons used by glass-blowers in working glass, and has for its object certain improvements in construction, as will fully appear by the detailed description thereof, of a mechanism and supporting-frame for working two or more gathering-irons simultaneously.

My invention consists in the construction and combination of parts, substantially as defined by the claims, to which reference is here made for a full statement of my invention.

In the drawings, Figure 1 is a central longitudinal section of a multiple gathering-iron embodying my improvements. Fig. 2 is a plan thereof on the line A A of Fig. 1. Fig. 3 is an enlarged view of the blowpipe with disk fixed thereto. Fig. 4 is an enlarged view of the top of the frame free of its attachments. Fig. 5 is an enlarged top view of the blowpipe-brace, and Fig. 6 is an enlarged top view of the cap that keeps the blowpipe in place. In the preferred construction of my improvements the frame consists of the lower cross-bar 1, having bearings 1^a and 1^b, in which the tubular gathering-irons 2 and 2^a turn, the vertical braces 1^c and 1^d, and the upper cross-piece 1^e, provided with the bearings 1^f and 1^g, in which the gathering-irons rotate, and having a circular center 1^h. Said circular center has two depressions 1ⁱ and 1^j and an axial bore 1^k, through which the blowpipe 3 passes.

Brazed or otherwise fixed to the blowpipe 3 is a disk 4, that fits in the circular depression 1^j when the blowpipe is in position in the frame, and within which depression said disk has a rotary movement. To secure the blowpipe in place in the frame, a plate 5, having a central bore 5^a, fits over the blowpipe down upon the disk 4 and is secured in place by screws 6 6, that pass through the screw-holes 5^b and pass into the holes 1ⁱ in the frame. When so secured, the blowpipe

may be rotated in the frame, but has no longitudinal movement relatively thereto.

Fixed upon the upper ends of the gathering-irons 2 and 2^a are gears 7 and 8, secured thereto by set-screws 9 and 10, and fixed to the blowpipe 3, immediately above the plate 5, is a central gear 11, that is in mesh with the gears 7 and 8. The central gear is fixed to the blowpipe by means of a set-screw 12. It will be seen that by turning the blowpipe the gathering-irons are simultaneously rotated through said gears. When the gears 7 and 8 are fixed to the gathering-irons, they prevent any downward movement of the said irons. To prevent any upward movement of the gathering-irons, collars 13 and 14 are secured thereto by set-screws 15 and 16, as illustrated. By loosening the set-screws 9 and 10 in the gears 7 and 8 and the set-screws 15 and 16 in the collars 13 and 14 the gathering-irons may be removed by pulling them out of the gears and frame and gathering-irons of other form or size may be substituted therefor.

To give to the device increased strength and stability, a brace 17, having a central bearing 17^a, through which the blowpipe 3 passes, has its ends lapped under the outer ends of the upper cross-piece of the frame and secured thereto by screws 18 18, that pass through the holes 17^b and 17^c in the brace and enter the screw-holes 1^m and 1ⁿ in the frame.

A connection-pipe 19, having two upwardly-curved branches 19^a and 19^b, connects the lower end of the blowpipe with the gathering-irons. Said pipe is provided with an upwardly-projecting connection-piece 19^c, that fits tightly over the downwardly-projecting nipple 1^o, attached to or made integral with the frame and secured to the nipple by a set-screw 20. The blowpipe has a rotary movement in the nipple 1^o. To provide tight connections between the ends of the connection-pipe 19 and the upper ends of the gathering-irons, one of each of said parts is provided with a conical end, and the other is provided with a conical recess to receive its as illustrated by the drawings, Fig. 1. It will be seen that when the operator blow into the blowpipe the air passes simultaneously through both gathering-irons. The

free end 3^a of the blowpipe is shaped to turn easily between the lips of an operator.

It will be seen that the blowpipe is projected in the same direction as the gathering-irons, that the device is adapted to be easily and freely manipulated by hand-in-hand work, as single gathering-irons have heretofore been used, and that two or more such irons may be used simultaneously, thus greatly increasing the effective work of an operator. The improvements covered by the claims of this application present a simple and an effective construction of great strength and utility.

When the device shall be used for work in which "blowing" is not done, the pipe 3 may be made solid, if desired, and thus become a shaft, and the gathering-irons may also be made solid, instead of hollow or tubular, in such case. The said device may also be used in work where blowing is not done by having said parts hollow or tubular, as illustrated, simply not passing air through them.

What I claim as my invention is—

1. The combination of two or more rotatable hollow gathering-irons adapted to be rotated simultaneously, a frame upon which said gathering-irons are journaled, a blowpipe adapted to be rotated relative to the frame, air connections between the blowpipe and the several gathering-irons, and a driving connection between said blowpipe and the gathering-irons whereby the gathering-irons are simultaneously rotated by turning the blowpipe.

2. The combination of a frame, two or more rotatable gathering-irons journaled therein, a

rotatable shaft journaled upon the frame, and a disk fixed to the shaft and loosely clamped to the frame whereby the shaft is capable of a rotative movement, and driving connection between the shaft and the several gathering-irons.

3. The combination of a frame, two or more rotatable hollow gathering-irons adapted to be rotated relatively thereto, of a rotatable blowpipe, connections between the blowpipe and the gathering-irons, to form an air-passage, said connections being provided with a connection-piece into which the blowpipe projects, and operative connection between the blowpipe and the gathering-irons.

4. The combination of two or more rotative hollow gathering-irons, a frame upon which the gathering-irons are journaled, said frame being provided with a hollow nipple, a rotatable blowpipe projecting into said nipple, a pipe provided with a connection-piece forming an air-tight connection with said nipple, the said pipe communicating with the gathering-irons, a disk fixed to the blowpipe, a plate secured to the frame and engaging the disk to allow a rotative movement, and operative connection between the blowpipe and the gathering-irons whereby said irons will be rotated simultaneously by turning the blowpipe.

In testimony whereof I affix my signature in the presence of two witnesses.

DANA F. RICHARDSON.

Witnesses:

L. M. MURPHY,

BLANCHE HUTCHINS.