

No. 775,708.

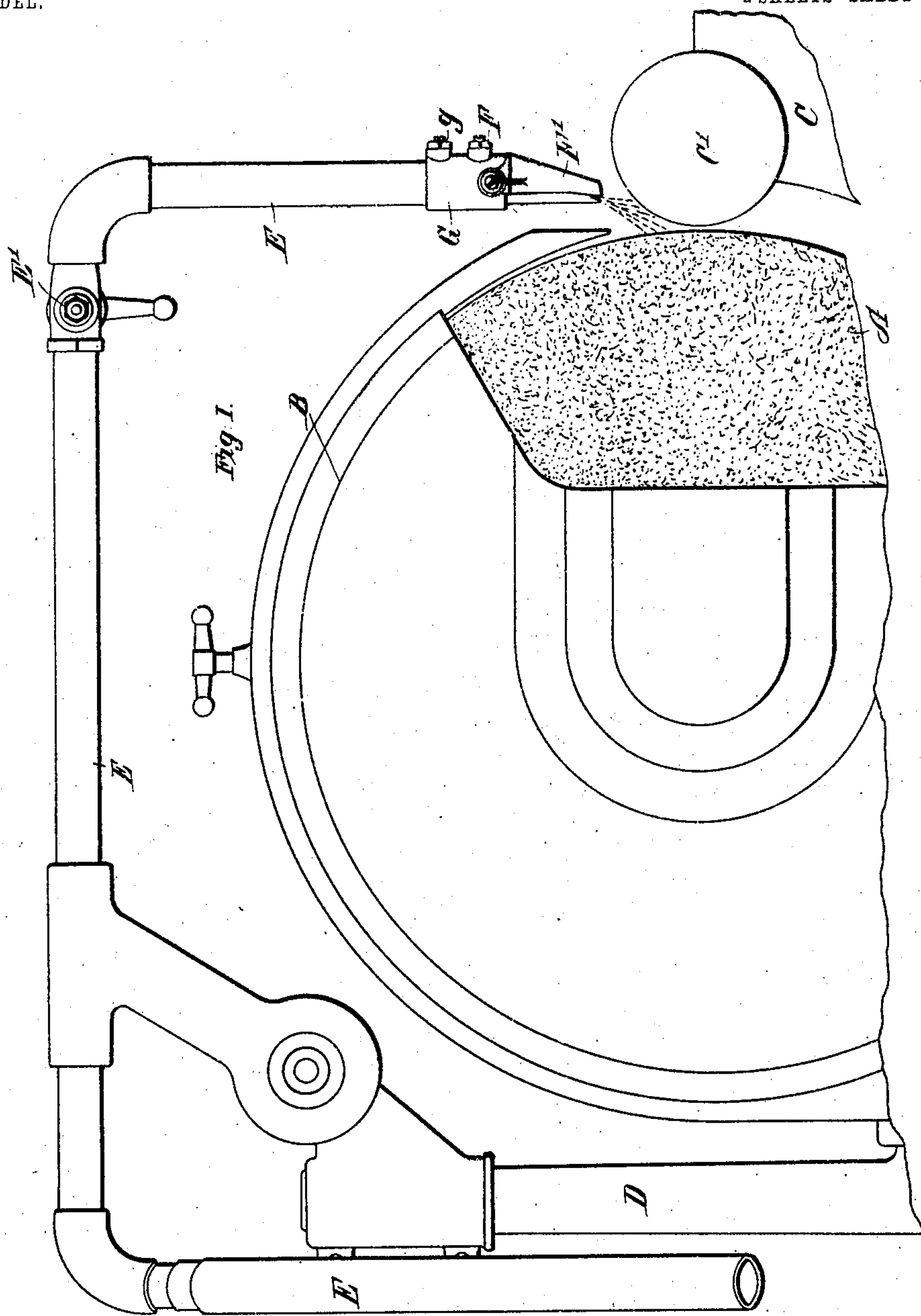
PATENTED NOV. 22. 1904.

C. H. NORTON.
SPOUT FOR GRINDING MACHINES.

APPLICATION FILED JUNE 6, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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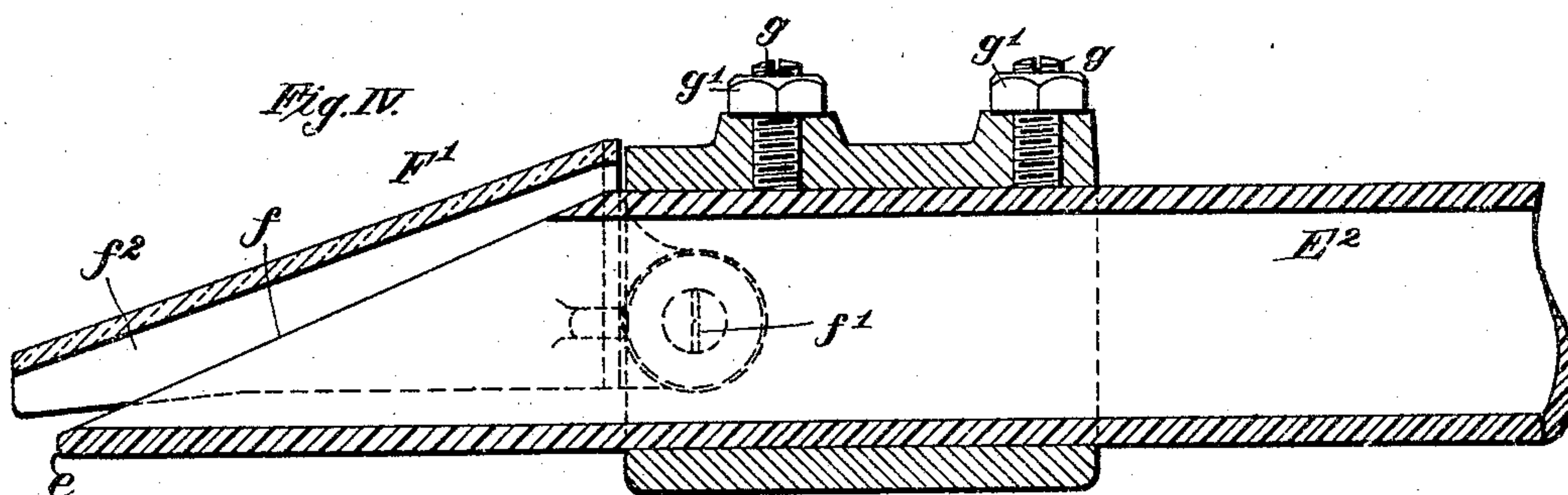
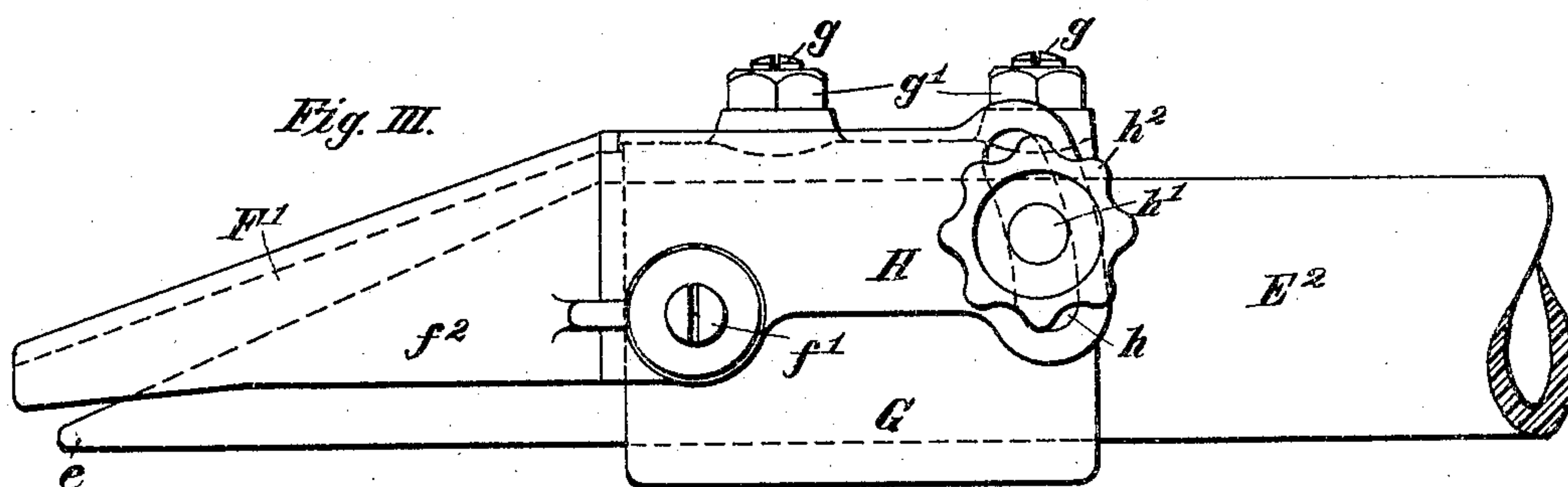
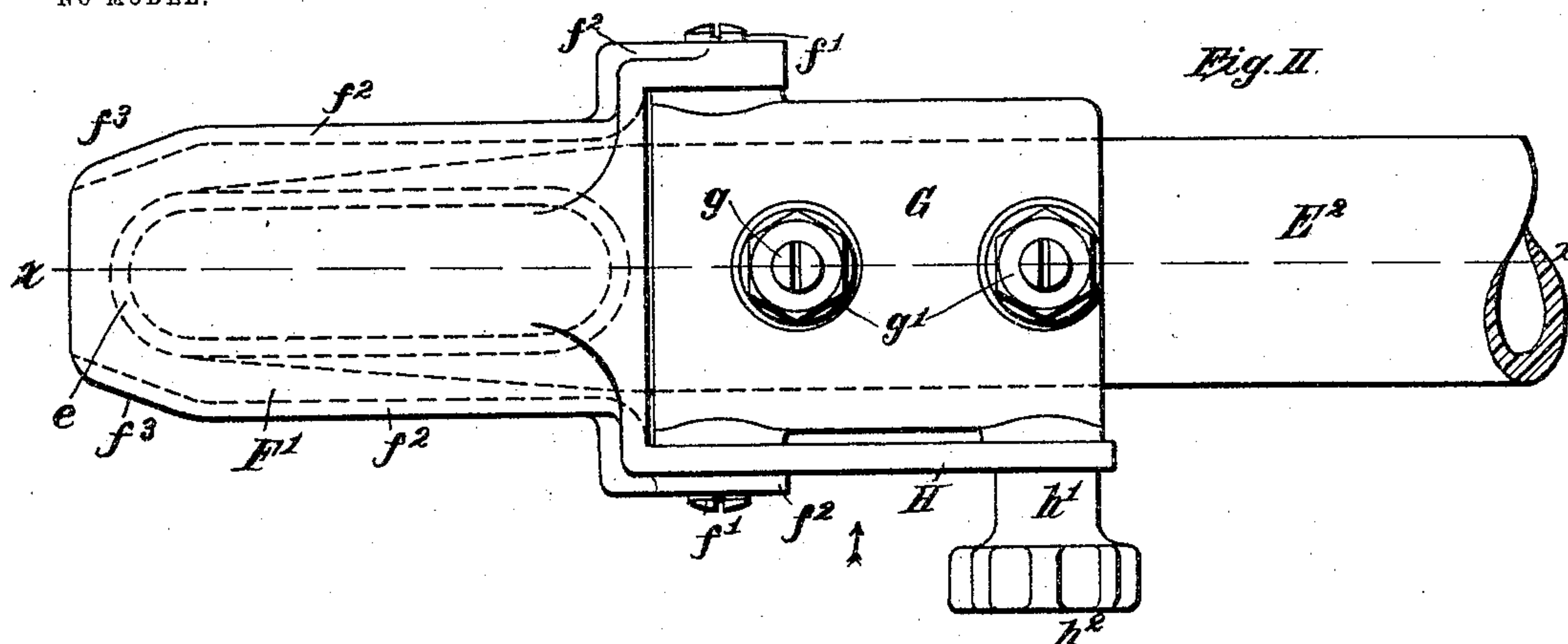
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CHARLES H. NORTON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
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SPOUT FOR GRINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 775,708, dated November 22, 1904.

Application filed June 6, 1904. Serial No. 211,288. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. NORTON, a citizen of the United States of America, and a resident of the city and county of Worcester, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Spouts for Grinding-Machines, of which the following is a specification.

The invention to be hereinafter described relates to grinding-machines, and more particularly to the spouts of such machines by means of which water or other fluid may be directed and supplied to the grinding-wheel during the treatment of metal or other surfaces. In such class of devices it is desirable that the water or other fluid may be supplied in regulated amounts suitable to the particular work being done and that the direction as well as the width of the fluid stream may be changed as circumstances dictate to secure the proper and efficient lubrication or washing effect. It is also a consideration of importance that the character of the fluid stream shall be such that the greatest amount of fluid will find its way into and be more or less confined by the space formed by the wheel, spout, and work, thus effectually and without unnecessary waste and expenditure of fluid keep the wheel and work at their points of contact well lubricated or washed.

With these generally-stated objects in view the invention consists of the parts and combinations, as will be hereinafter more fully described and then definitely pointed out in the claims.

In the drawings, Figure 1 is a partial side elevation of sufficient of a grinding-machine to show the general application of my invention thereto. Fig. 2 is a detached detail, on an enlarged scale, showing the spout as it appears looking toward the left in Fig. 1. Fig. 3 is a like detached detail view of the spout viewed in the direction of the arrow, Fig. 2; and Fig. 4 is a central longitudinal section of the spout and its pipe connections on the line *x x* of Fig. 2.

In the drawings, as shown clearly in Fig. 1, A represents any usual form of grinding-

wheel mounted in a suitable supporting-frame to rotate in the ordinary and well-understood manner, and B is a usual form of hood or covering generally employed in such devices. The work holder or rest C, on which the work C' is maintained during the grinding operation, is of any usual or preferred form or construction.

Mounted on the post or upright D is the water or other fluid conduit or pipe E, having at a suitable point in its length a shut-off cock E' of any desirable construction, and at the end of the downward extension E² of such conduit is the spout for directing the water or fluid to the grinding position between the wheel and work, and such spout will for general identification be referred to by the letter F.

In the formation of the spout and as a simple means of securing the objects hereinafter more fully set forth the lower end of the pipe E² is provided with a beveled end *f*, which may be produced by cutting the pipe at this point diagonally or at an incline to its longitudinal axis. Secured upon the pipe E² above the beveled end *f* is the collar G, which may be removably secured to the pipe E² by means of set-screws *g g* engaging screw-threaded openings in the collar G, and to prevent accidental turning or looseness of the collar on the pipe jam or lock nuts *g' g'* may be employed, as will clearly appear from Fig. 4.

Pivotally mounted on the collar G by means of the removable studs *f' f'* is the spout gate or lip F', having the side lugs *f² f²*, which embrace the collar G and engage the studs *f' f'* substantially in a plane passing diametrically through the pipe E². The spout gate or lip F' has the portion thereof extending over the beveled end *f* of pipe E² inclined substantially on the incline of the bevel and is provided with downwardly-projecting side flanges *f² f²*, which embrace between them the beveled end of the pipe. The forward end of the gate or lip F' is preferably somewhat narrowed by convergence of the side flanges *f² f²*, as at *f³ f³*, thus conforming in general to the contracted portion *e* at the extremity of the beveled end of the pipe E².

From the construction thus far described it will be apparent that the spout gate or lip B by being more or less opened controls the quantity of fluid that may pass from the pipe E^2 , and from the fact that the flanges $f^2 f^2$ confine the outflowing fluid in its sidewise tendency or motion there is formed at each side of the gate or lip a stream of increased bulk or quantity from what exists at the central portion of the gate or lip, the consequence of which will be that these increased side streams will act in the nature of walls to prevent the too rapid side flow of the fluid when it reaches the space bounded by the wheel, the spout, and the work, and increased efficiency in washing or lubricating effect is the result. Moreover, by adjustment of the gate or lip F' and by reason of the contracted portions $f^3 f^3$ thereof the width of the stream may be varied between certain limits determined by the distance or width between the inclines $f^3 f^3$ at the point where the stream emerges. By disposing the gate or lip F' in position as represented in Fig. 1—that is to say, with the said gate or lip on the side of the pipe E^2 remote from the wheel A—the direction of the stream into proper position between the wheel and work is readily controlled as will be obvious to one skilled in the art.

In order that the gate or lip F' may be readily adjusted to determine the character, direction, and quantity of fluid to be delivered between the wheel and work, said gate or lip is provided with an arm H, extending backward from the pivotal connection of the gate or lip with the collar G, and said arm is properly provided with a slot h , through which extends a set-screw h' , of usual construction, operable by the hand-wheel h^2 . By loosening the set-screw the arm H, and consequently the gate or lip F' , may be moved about the studs f' and then held in adjusted position by setting up such screw, all as will be readily understood by one skilled in the art.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A spout for grinding-machines, comprising a pipe having a beveled end, a gate or lip pivotally mounted upon said pipe and having a portion extending over said beveled end and side flanges extending about the sides of said beveled end, and means for adjusting said gate or lip on its pivotal connections.

2. A spout for grinding-machines, comprising a pipe having a beveled end, a collar, means for securing said collar to said pipe, a pivotally-mounted spout gate or lip having an inclined portion corresponding to and extending over said beveled end, said gate or lip hav-

ing side flanges embracing the sides of the pipe and means for adjusting the gate or lip on its pivotal mounting to vary the character and direction of the stream.

3. A spout for grinding-machines, comprising a pipe having a beveled end, a gate or lip pivotally mounted upon said pipe and having a portion inclined in substantial accordance with the beveled end of the pipe and extending over the same, side flanges extending from the inclined portion and embracing the sides of the pipe, the end of said gate or lip being contracted in width, and means for adjusting the gate or lip on its pivotal connections.

4. A spout for grinding-machines, comprising a pipe having a beveled end, a gate or lip pivotally mounted upon said pipe and having a portion inclined in substantial accordance with the beveled end of the pipe and extending over the same, side flanges extending from the inclined portion and embracing the sides of the pipe, the end of said gate or lip being contracted in width, an arm extending from said gate or lip and a set-screw for securing the arm and consequently the gate or lip in adjusted position.

5. A spout for grinding-machines, comprising a pipe having a beveled end, a collar, means for securing said collar to said pipe, a pivotally-mounted spout gate or lip having an inclined portion corresponding to and extending over said beveled end, said gate or lip having side flanges embracing the sides of the pipe, and the forward end of said gate or lip being contracted in width, and means for adjusting the gate or lip on its pivotal mounting to vary the character and direction of the stream.

6. In a grinding-machine, the combination of a grinding-wheel, a work-holder, a spout disposed intermediate said wheel and work-holder and comprising a pipe having a beveled end, a gate or lip holder pivotally mounted on said pipe and disposed on that side of said pipe remote from the grinding-wheel to thereby direct the fluid between the wheel and work, said gate or lip having a portion inclined substantially as and extending over the beveled end of the pipe, side flanges extending from said inclined portion and embracing the ends of the pipe, and means for adjusting the gate or lip to vary the character and direction of the fluid stream.

Signed by me at Worcester, Massachusetts, this 3d day of June, 1904.

CHARLES H. NORTON.

Witnesses:

ALDUS C. HIGGINS,
HERBERT DUCKWORTH.