E. DOR-DELATTRE.

APPARATUS FOR CHARGING THE RETORTS OF ZINC AND OTHER ANALOGOUS FURNACES.

APPLICATION FILED MAY 6, 1910.

969,254. **Patented Sept. 6, 1910.**

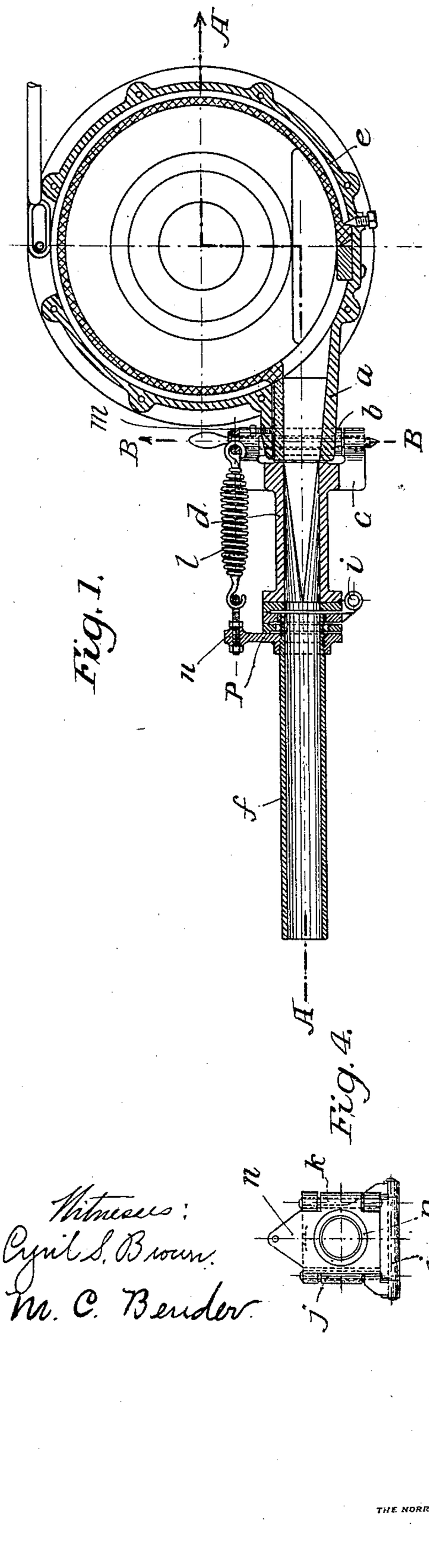

Fig. 1.

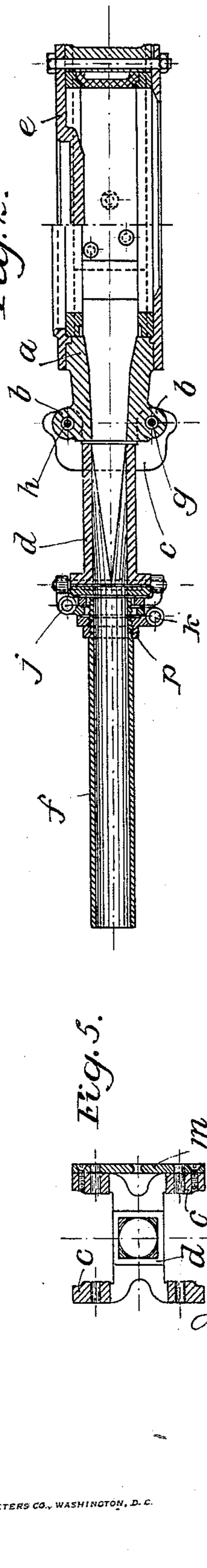

Fig. 2.

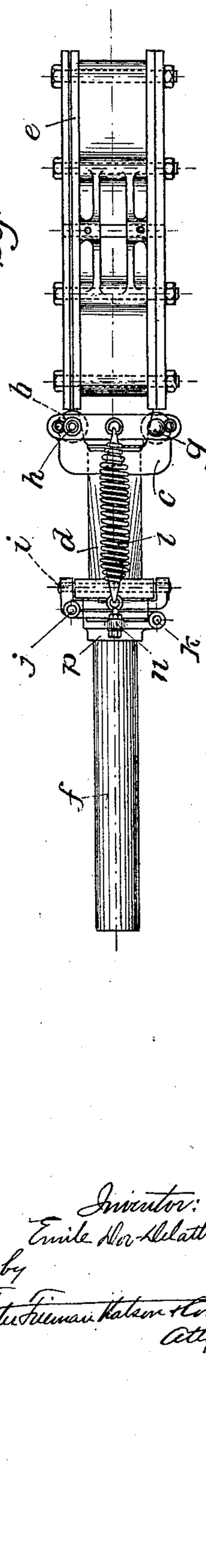

Fig. 3.

Fig. 4.

Fig. 5.

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APPARATUS FOR CHARGING THE RETORTS OF ZINC AND OTHER ANALOGOUS FURNACES.

969,254. Specification of Letters Patent. Patented Sept. 6, 1910.

Application filed May 6, 1910. Serial No. 559,857.

To all whom it may concern:

Be it known that I, EMILE DOR-DELATTRE, engineer, subject of the King of Belgium, residing at Liege, Belgium, have invented certain new and useful Improvements in Apparatus for Charging the Retorts of Zinc and other Analogous Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in apparatus for charging the retorts of zinc and other analogous furnaces comprising a propeller or feed wheel having radial blades, rotating within a casing carrying a charging tube. When such an apparatus, in which the charging tube is rigid and in one piece with the casing, is moved in front of the furnace, it may happen that the extremity of the charging tube fouls with the retorts, with the uprights of the furnace, or with the protecting screen which is generally placed in front of said furnace. When such fouling takes place, in the case where the charging tube is rigid with the casing, said tube breaks, or else damages the apparatus or the furnace.

In the arrangement which is the object of the present invention, the charging tube is jointed to the casing, so as to yield or move angularly in the event of fouling taking place. This arrangement has for its object not only to prevent the breakage or damage of the charging tubes, but it also facilitates and accelerates the charging operations, and permits of absolutely continuous working such that all the retorts of the furnace can be charged without stopping the propeller, since it is not necessary to withdraw the apparatus rearward when it is required to pass an upright of the furnace.

The accompanying drawing represents by way of example, one arrangement constructed in accordance with this invention.

Figure 1 is a vertical longitudinal section through the apparatus. Fig. 2 is a horizontal section on A—A (Fig. 1). Fig. 3 is a plan view. Fig. 4 is an end view of the tube and joints as seen from the front. Fig. 5 shows a section on B—B.

The casing *e* is provided with a discharge branch or neck *a*, of square section, through which the charging materials, thrown out by the blades of the wheel, are delivered. This branch *a* is provided with two sleeves or lugs *b* to which are connected the brackets or extensions *c* of a coupling piece or sleeve *d*, carrying the charging tube proper *f*. A pivot *g* passes through one of the sleeves *b* of the casing *e*, and also through the corresponding parts *c* of the sleeve or coupling *d*, so as to form a hinge, while the other sleeve *b* and the parts *c* which correspond are traversed by a pin *h* capable of being readily removed. This arrangement allows of the tube *f* and coupling sleeve *d* pivoting horizontally when the apparatus is not in use.

The coupling sleeve *d*, through which the material passes from the square neck *a* to the tube *f*, carries at its forward end a primary horizontal hinge *i*, which allows of the outer end of the tube *f* being lowered in a vertical direction with reference to the sleeve *d*. Vertical hinges *j* and *k* permit, on the other hand, of angular movements of the tube *f* respectively toward the right or left. Normally the tube *f* is kept as a prolongation of the sleeve *d* by means of a spring *l* capable of yielding in the event of the tube fouling. This spring *l* is fixed at one of its ends to a bar *m* arranged between the upper bracket parts *c* of the sleeve *d* and at its other end to a projecting part *n* of the front leaf *p* of the hinge *k*, to which the tube *f* is fixed. This single spring *l* thus acts upon the three hinges *i*, *j* and *k* at the same time, and tends to maintain these hinges constantly closed, as shown. If desired the charging tube may be connected by hinges directly to the casing itself.

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

1. An appliance for charging the retorts of zinc and other analogous furnaces comprising a charging tube connected to the casing containing the propeller or feed wheel, by means of hinges or joints permitting of the angular displacements of the tube, when same encounters an obstacle, both in a vertical and in a lateral direction, and means acting to automatically return said tube to normal position after passing an obstacle.

2. An appliance for charging retorts comprising a charging tube connected to a suitable supply device, by means of two vertical

hinges and a horizontal hinge, so that the tube can pivot or swing to one side or downward, in combination with a spring maintaining the charging tube in its normal position.

3. An appliance for charging retorts comprising a charging tube connected to the casing containing the propeller or feed wheel, by means of hinges or joints permitting of the angular displacements of the tube, in combination with an intermediate coupling piece interposed between the discharge branch of the casing and the charging tube proper, this coupling being connected to the discharge branch by means of a pivot and a pin capable of being readily removed.

4. An appliance for the purpose described comprising a charging tube, a suitable supply device, connected with the tube by means permitting the latter to move either vertically or laterally, and a spring acting to maintain the tube in normal position, and to restore it to such position after it has been deflected in any direction.

5. An appliance for the purpose described comprising a casing, a charging tube supported from the casing by means permitting it to move to and from alinement with an outlet from the casing, and means acting to retain the tube in alinement with said outlet.

6. An appliance for the purpose described comprising a casing, a charging tube supported from the casing by means permitting it to move to and from alinement with an outlet from the casing, and a spring acting to hold the tube in alinement with said outlet.

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

EMILE DOR-DELATTRE.

Witnesses:

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