

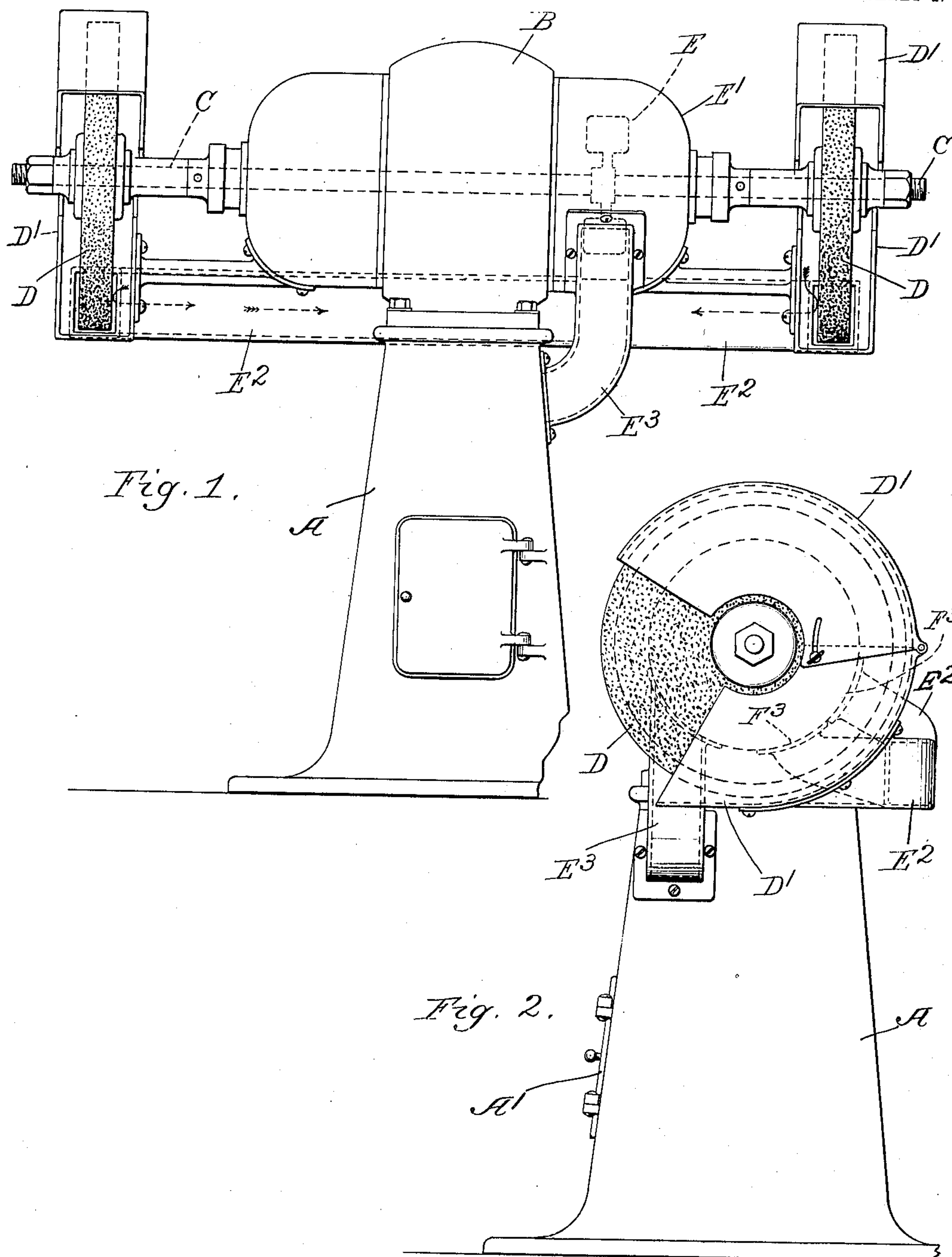
No. 897,603.

PATENTED SEPT. 1, 1908.

F. B. DUNCAN.
BUFFING AND GRINDING APPARATUS.

APPLICATION FILED JULY 9, 1900.

2 SHEETS—SHEET 1.



Witnesses.

Edward T. Wray.
Homer L. Kraft

Inventor.

Fredrick B. Duncan.

by Parker & Carter
his Attys.

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2 SHEETS—SHEET 2.

Fig. 3.

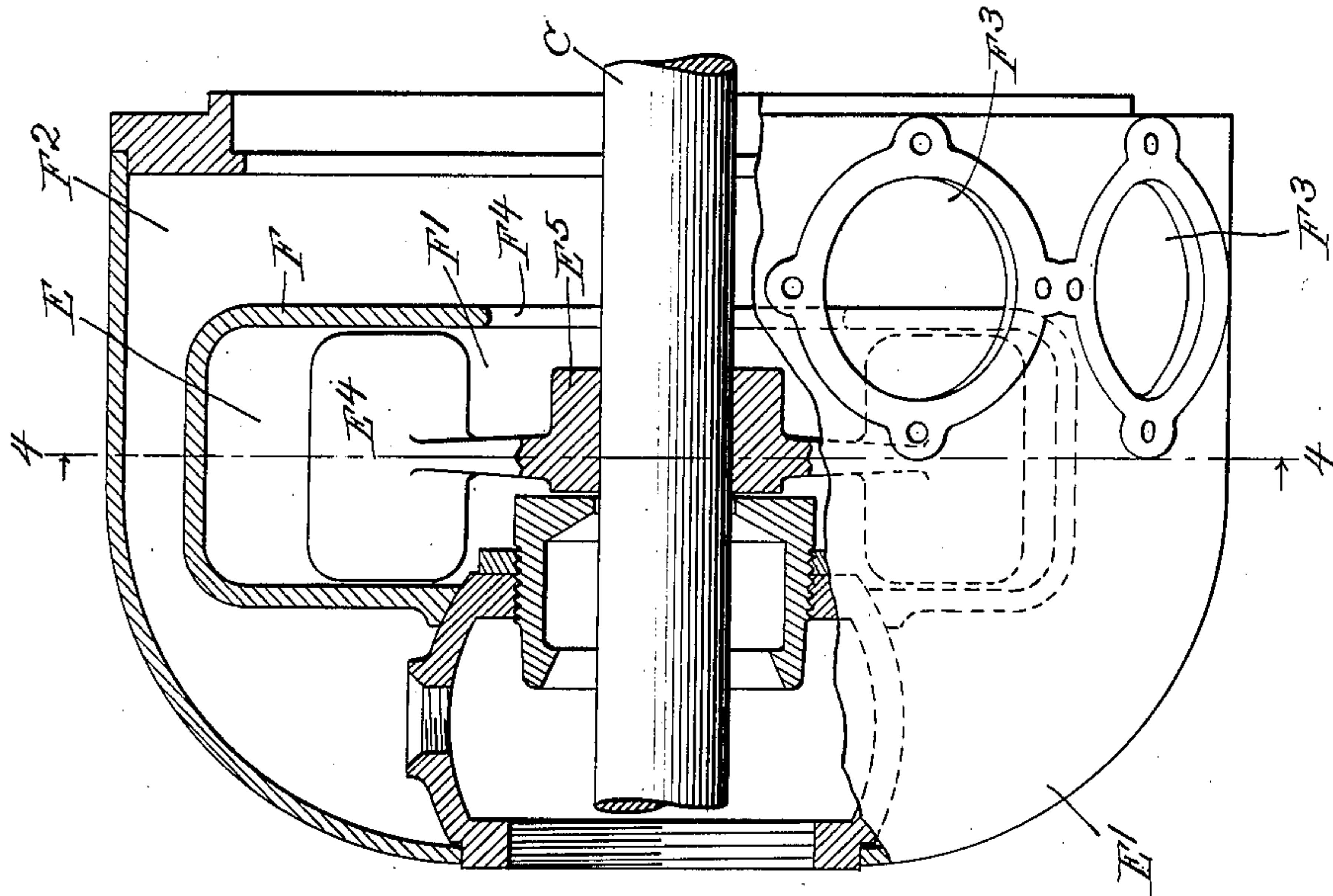
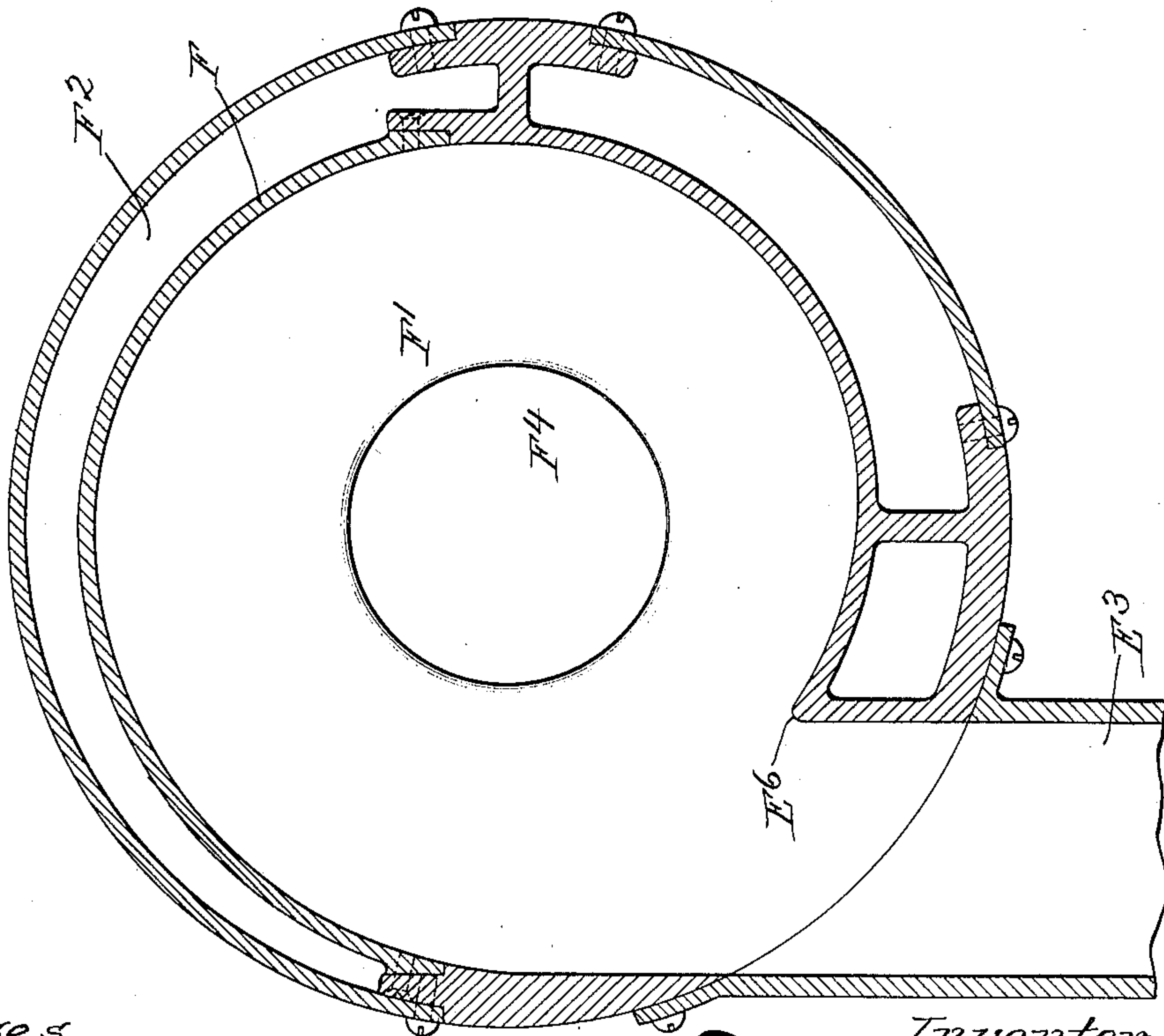


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

FREDERICK B. DUNCAN, OF MADISON, WISCONSIN, ASSIGNOR TO NORTHERN ELECTRICAL MANUFACTURING COMPANY, OF MADISON, WISCONSIN, A CORPORATION OF WISCONSIN.

BUFFING AND GRINDING APPARATUS.

No. 897,603.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed July 9, 1900. Serial No. 22,919.

To all whom it may concern:

Be it known that I, FREDERICK B. DUNCAN, a subject of the Queen of Great Britain, residing at Madison, in the county of Dane and State of Wisconsin, have invented a certain new and useful Improvement in Buffing and Grinding Apparatus, of which the following is a specification.

My invention relates to improvements in buffing and grinding apparatus and has for its object to provide a new and improved apparatus of this description.

My invention is illustrated in the accompanying drawings, wherein

Figure 1 is a front view of a device embodying my invention; Fig. 2 is an end view of Fig. 1; Fig. 3 is a longitudinal section through the fan shown in Fig. 1; Fig. 4 is a section on line 4—4, Fig. 3, with parts omitted.

Like letters refer to like parts throughout the several figures.

In the construction and operation of buffing and grinding machines, certain conditions are met with not present in the construction and operation of other classes of machinery. Buffing and grinding machines, for example, must be ordinarily run at a high rate of speed and when in use continuously produce a large amount of dust and grit, which must be properly taken care of and which produces many evil effects. If, for example, the device is run from a belt, considerable tension must be applied to the belt to keep it in position and obtain the proper speed. The dust and grit from the machine gets into the bearings and this tension causes a rapid deterioration, and hence the machine is soon destroyed.

My invention has as its object, among other things, to obviate these evils and to properly take care of the dust and dirt necessarily produced when the machine is in operation, and at the same time provide a self-contained machine.

Referring now to the drawings, I have shown one construction embodying my invention. In this construction, I provide a suitable base A of any desired form. Mounted upon this base is a motor B, preferably an electric motor, having an extended armature shaft C. Mounted upon this armature shaft so as to be rotated thereby is a suitable grinding or buffing wheel D provided with a

suitable protecting hood D¹. There is also mounted upon the armature shaft, so as to be operated thereby, a suitable air moving device, which in this case is illustrated as an exhaust fan E. This air moving device or fan is provided with a suitable inclosing bonnet E¹, having suitable admission and exhaust openings. The admission opening is connected with the air and dust conductor E² leading to the hood of the buffing or grinding wheel. The discharge opening is connected with the discharge conductor E³, which communicates with the hollow base A. As shown in Fig. 1, the armature shaft is extended in both directions and two buffing or grinding wheels are used, one placed on each side of the motor, both being provided with protecting hoods D¹ and having air and dust conductors E² leading therefrom to the air moving device.

The air moving device or fan E is illustrated in detail in Fig. 3 and consists of a series of vanes E⁴ attached to a suitable hub E⁵ mounted upon the armature shaft. This fan is located in an inclosing device F within the bonnet E¹. This inclosing device practically divides the bonnet into two chambers F¹ and F². The air and dust conductors E² leading from the hoods of the grinding and buffing wheels are connected with the chamber F² through the openings F³. The chamber F² is separated from the motor by means of a suitable partition and communicates with the fan chamber through the side opening F⁴. The discharge conductor E³ leads from the fan chamber F¹ (see Fig. 4). The radius of the fan chamber gradually increases from the edge E⁶ of the opening to the exhaust conductor, as shown in Fig. 4. At this edge E⁶ the radius is substantially the length of the radius of the fan, there being only sufficient room to permit the free movement of the vanes. When an electric motor is used, the controlling device or rheostat or the like is located in any suitable place, and hence each machine may be separately controlled. The hoods D¹ for the wheels D with the air and dust conductors leading therefrom provide a simple and efficient means for getting rid of the dust.

It will be seen that each device, when constructed as herein shown and described, is self-contained, is independent of any other machine or exterior piping arrangement and

can be moved whenever desired without in any manner disturbing other machines or any set construction or arrangement. It will also be seen that the evil effects of the dust on the bearings and the like are reduced to a minimum, there being no belt strain of any kind, and that the greatest efficiency of drive is produced, thus securing economy of power and convenience of handling.

The electric motor is provided with a protecting covering, which incloses it and protects it from the dust. I have not shown the construction of the motor in detail, as any desired electric motor may be used for this purpose.

I claim:

1. In a buffing or grinding device the combination of a supporting hollow base with a hood or cap or cover mounted thereon, suitable bearings mounted thereon provided with grinding wheels, one at each end of a shaft which is mounted in said bearings, an electric motor mounted upon said base and within said hood, its rotating part attached to said shaft, a fan attached to said shaft and driven thereby, air ducts leading from the grinding wheels to the fan, a connection from the fan space to the base so that the material drawn from the grinding wheels may be discharged into the base, a door for removing such material from the base, and a suitable partition in the hood to separate the moving parts of the motor from the fan, all substan-

tially as described and for the purposes specified.

2. In combination, an electric motor having a bonnet removably secured against one end of the motor frame, said bonnet having a space or chamber formed in it, a partition separating the space and the bonnet from the interior of the motor, a bearing for the armature shaft of the motor carried by said bonnet, a fan carried by the armature shaft of the motor between the bearing and partition, a tool carried by the outer end of the armature shaft, a hood for said tool, a pipe or conductor leading from said hood to the space within said bonnet, and a discharge conductor or pipe leading away from said bonnet.

3. In a buffing and grinding device, a motor, a grinding device mounted upon the motor-shaft, a hood about said grinding device, a bonnet arranged between the grinding device and the motor, a fan-chamber arranged within said bonnet and communicating with the interior thereof on the side adjacent the motor, a revolving fan mounted on the motor-shaft and arranged within said chamber, and means connecting the hood to the bonnet at a point adjacent the side of the fan-chamber nearest the motor.

FREDERICK B. DUNCAN.

Witnesses:

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