July 25, 1939. J. F. WHITE 2,167,059

BUFFING WHEEL

Filed Aug. 12, 1938 2 Sheets-Sheet 1

Fig. 1.

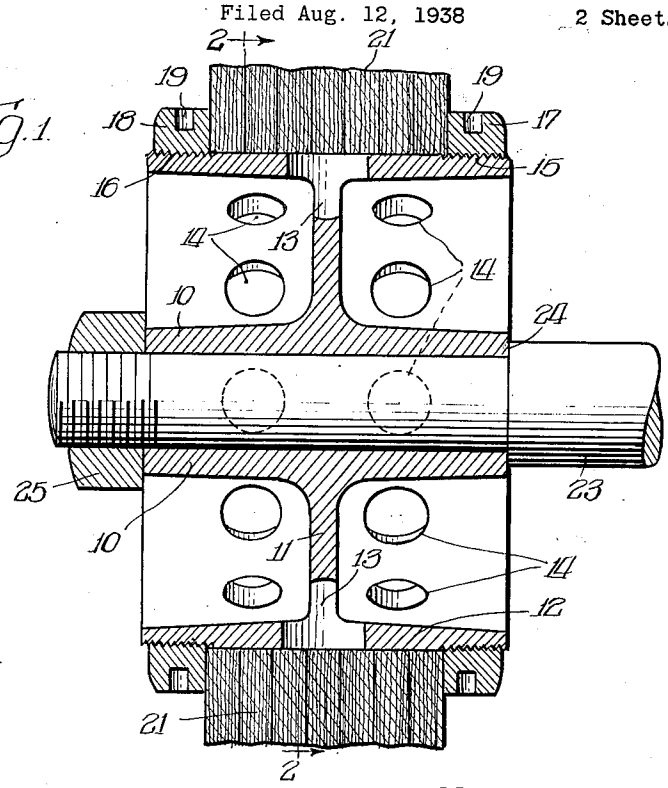
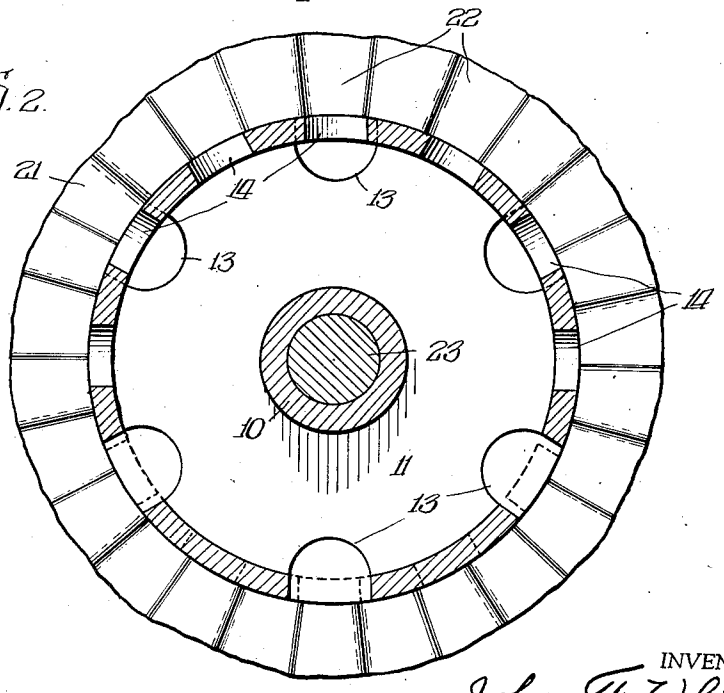


Fig. 2.



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Filed Aug. 12, 1938 2 Sheets-Sheet 2

Fig. 3.

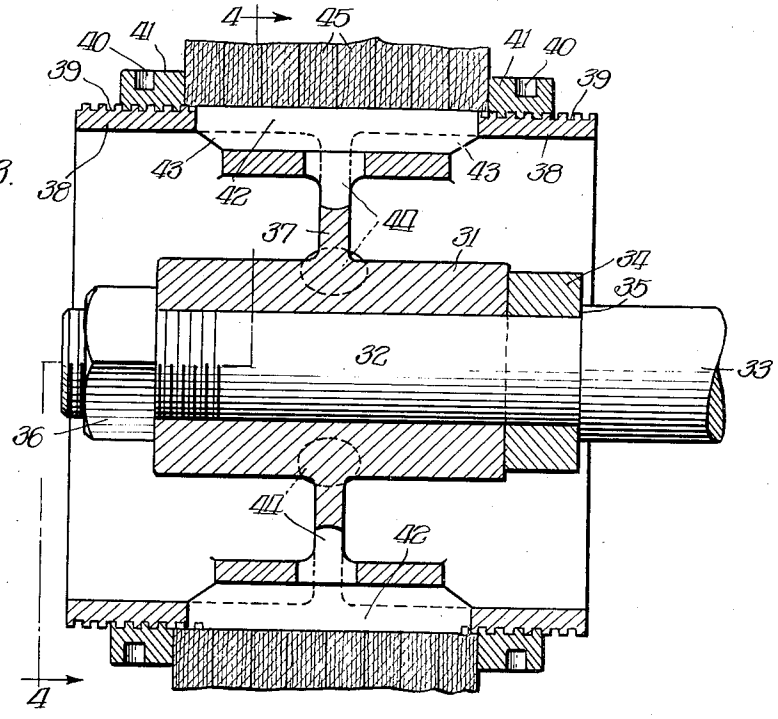
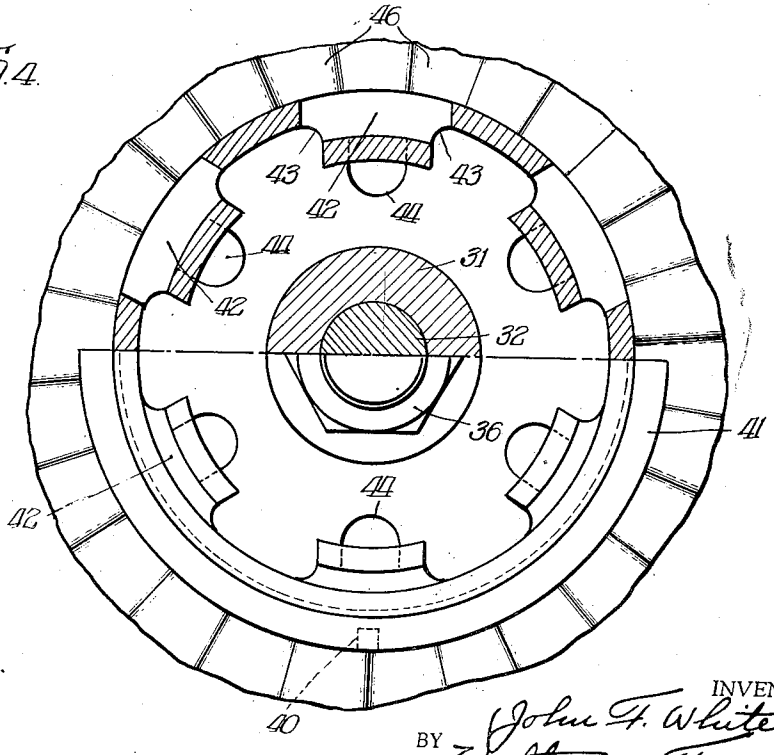


Fig. 4.



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2,167,059

BUFFING WHEEL

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Application August 12, 1938, Serial No. 224,598

5 Claims. (Cl. 51—193)

My invention pertains to certain novel and improved structural and functional betterments in ventilated or cooled buffing-wheels and their mountings, one leading object of the invention being to provide a new type of structure which more adequately controls the temperature of the fabric-elements of the wheel while in operation, and more particularly the inner or middle portion of the wheel.

Another aim of the invention is to supply a buffing-wheel of the style referred to which is relatively simple in construction, and hence comparatively economical to manufacture.

A further purpose of the invention is the provision of a buffing-wheel which is efficient in operation and which is unlikely to become damaged or injured in ordinary service.

An added design or intention of the invention is the furnishing of a buffing-wheel which may be mounted on, and demounted from, its supporting and operating spindle or shaft with ease and dispatch.

To enable those acquainted with this art to understand the invention fully, two present desirable embodiments of the same have been illustrated in the accompanying drawings to which reference should be had in connection with the following detailed description, and, for simplicity, like reference numerals have been provided throughout the several views to designate the same parts of the construction.

In these drawings:

Figure 1 is a central, vertical section through one type of the new buffing-wheel;

Figure 2 is a section through the wheel on line 2—2 of Figure 1;

Figure 3 is a similar, central, vertical section through the second embodiment of the invention; and

Figure 4 is a section on line 4—4 of Figure 3.

Referring to these drawings, and more particularly to Figures 1 and 2 thereof, it will be perceived that in its current most preferred form, the buffing-wheel may be made from an ordinary, straight-face, pulley, modified or changed to adapt it to perform the necessary functions.

As is usual, such pulley has a central, apertured, supporting hub **10**, a middle, circular web **11** outstanding from such hub, and an outer, cylindrical main-body portion **12** supported by the web, all three parts, **10**, **11** and **12** being of metal, such as aluminum, alloy or the like, and all integral with one another.

So far as thus described, the structure is nothing more than that of an ordinary commercial pulley.

To change or reform such pulley to adapt it to carry the fabric buffing-elements and to ventilate or cool them in suitable and adequate degree, an appropriate number of holes **13** are drilled through the central part of the portion **12** at the same time removing some of the web **11**, all as is fully and clearly illustrated.

Also a suitable number of holes or apertures **14**, **14** are drilled through the part **12** on opposite sides of the medial web **11**.

In addition, the two opposite margins of the outer face of such modified pulley are provided with suitable screw-threads **15** and **16**, right and left hand if desired, on which may be screwed two collars or round nuts **17** and **18** which may have recesses **19** for the accommodation of the prong of a spanner-wrench by means of which the collars or nuts may be screwed and tightened into place.

These collars **17** and **18** securely hold or clamp between them the inner, marginal portions of centrally-apertured fabric-buffing-elements **21**, **21** which have a considerable number of radially-disposed ventilating-passages **22** in their opposite faces around their central openings.

When such metal mounting and its fabric buffing-members have been applied to the operating shaft **23** with one end of the hub bearing against a shoulder **24** of the shaft and a nut **25** threaded in the end of the shaft and engaging the opposite end of the hub, the buffing-wheel is ready for action upon rotation thereof by the revolution of the shaft.

As will be readily understood, during the rapid rotation of the buffing-wheel, air present at opposite sides of the web, due to centrifugal force, flows or is forced outwardly through the several holes **13**, **14** and through the passages **22** in the sides of the fabric-members, thus adequately and properly cooling the latter elements against the otherwise destructive action of the heat generated by the buffing-operation.

A somewhat different type of structure is presented in Figures 3 and 4 in which case the mounting for the fabric buffing-elements comprises a hub **31**, adapted to be supported and clamped on the reduced-diameter portion **32** of the drive-shaft **33**, between a collar **34**, on the part **32** and bearing against a shoulder **35**, and a nut **36** screwed on the threaded end portion of the shaft section **32**.

As in the previously-described structure, outstanding from the center of, and integral with,

the hub is a circular web **37** forming a part of an integral with the outer portion of the mounting comprising two, end, cylindrical parts **38, 38** externally-screw-threaded at **39, 39** for the retention of complementarily-threaded collars or nuts **41, 41**, having spanner-wrench prong-receiving cavities **40**.

The portion of the mounting between such end-members **38, 38** is cut away or omitted at intervals to provide parallel, spaced, external, longitudinal grooves **42, 42** each open at its opposite ends at **43, 43**, and, as in the case of the other type of appliance, holes **44, 44** may be provided at centers of such grooves with removal of portions of the web so that air may directly enter the middle portions of such grooves from opposite sides of the web as well as at their opposite ends.

As will be readily understood, the open-center, textile-fabric buffing-members **45, 45** with permanent, radially-disposed ventilating or cooling passages **46, 46** at their sides are supported on the mounting and clamped firmly and securely between the readily-adjustable, threaded collars or nuts **41, 41** all as is clearly illustrated, and, when the complete buffing-wheel, as thus constituted, is rotated at the usual high speed, air is drawn in through the grooves **42, 42** and is delivered therefrom to the several connecting passages **46, 46** through which it is discharged outwardly between the fabric members, thereby maintaining the latter at a suitable temperature to preclude undue or damaging heating and burning of the cloth which is performing the buffing and polishing action.

Those acquainted with this art will understand that the invention is not necessarily limited and restricted to the precise features illustrated and described and that various modifications may be resorted to without departure from the heart and essence of the invention as defined by the appended claims, which should be construed as broadly as permitted by the state of the prior art, and without the loss or sacrifice of any of the benefits accruing from the employment of the invention.

I claim:

1. In a buffing-wheel mounting, the combination of a member having a hub adapted to be applied on the shaft designed to rotate the wheel, a substantially-central circumferential web outstanding from said hub, and a cylindrical main body-portion supported on the outer part of said web in outwardly spaced relation to said hub, said hub having an outstanding flange at one end and an external screw-thread at its other end, a screw-threaded collar adapted to cooperate with said screw-threaded end and to clamp between said flange and collar a series of concentric open-center fabric buffing-elements, having outwardly-directed ventilating-passages at the inner portions of their sides, the middle part of said body-portion having a row of openings therethrough arranged to communicate with the ventilating-passages of said buffing-elements and opening at both sides of said web, whereby said connected openings and passages afford conduits for the flow of cooling air therethrough to prevent overheating of said buffing-elements by flowing outwardly between them.

2. The buffing-wheel mounting presented in claim 1 in which said main body-portion has other openings therethrough at opposite sides of said web and said first row of openings and also arranged to communicate with the ventilating-passages of said buffing-elements.

3. The buffing-wheel mounting presented in claim 1 in which the external surface of said main body-portion has longitudinally-arranged circumferentially-spaced grooves communicating with said row of openings and with said ventilating-passages.

4. The buffing-wheel mounting presented in claim 1 in which the external surface of said main body-portion has longitudinally-arranged circumferentially-spaced grooves communicating with said row of openings and with said ventilating-passages, said grooves being open at their opposite ends on opposite sides of said web.

5. The buffing-wheel mounting presented in claim 1 in which each of said openings eliminates a part of said web thereby providing an opening therethrough, and in which the external surface of said main body-portion has a series of longitudinally-arranged circumferentially-spaced grooves the middle of each of which is in communication with one of the openings of said row, and in which each said groove is open at its two ends on opposite sides of said web.

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