F. A. BRASSILL.

GUARD AND WATER FEED COMBINATION.

APPLICATION FILED MAR. 8, 1918.

1,286,518.

Patented Dec. 3, 1918.

Fig. 2

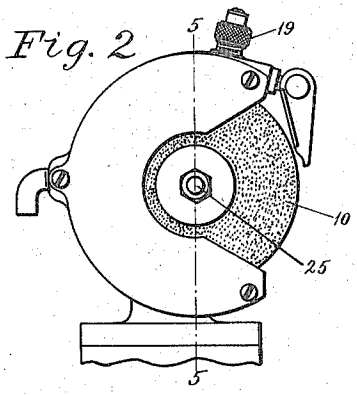



Fig. 1

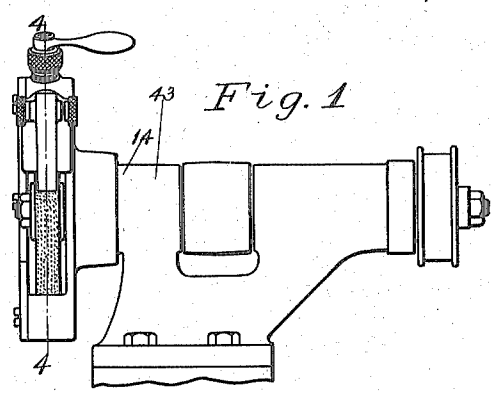



Fig. 3

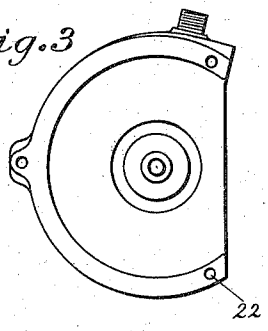



Fig. 6

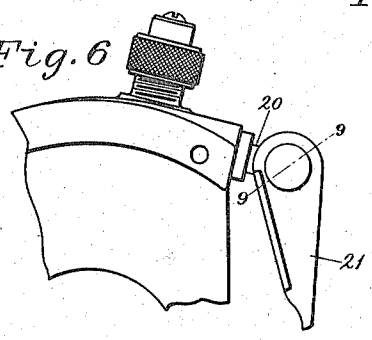



Fig. 7

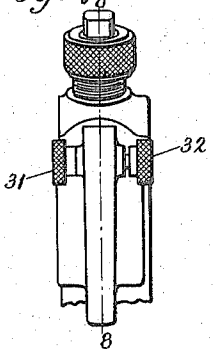



Fig. 4

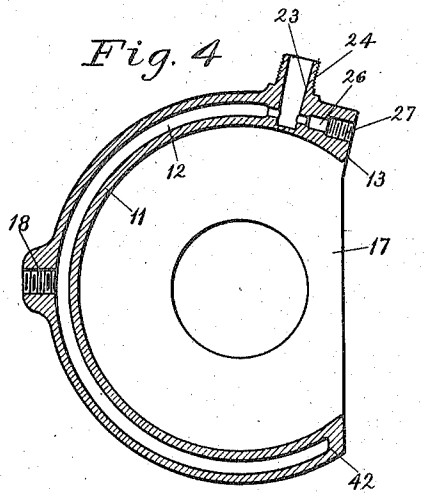



Fig. 9

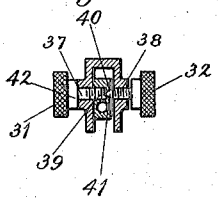



Fig. 5

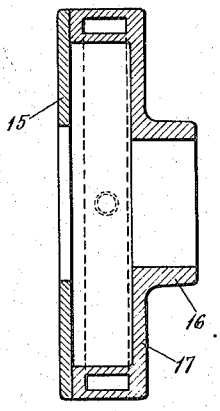
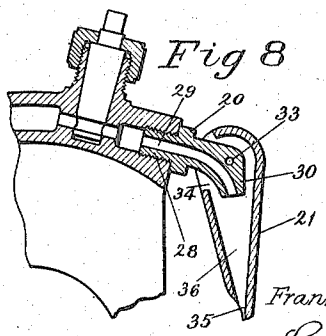



Fig 8




Inventor.

Frank Aloisious Brassill

per Louis N. Schmidt

Attorney.

# UNITED STATES PATENT OFFICE.

FRANK ALOISIOUS BRASSILL, OF HARTFORD, CONNECTICUT.

## GUARD AND WATER-FEED COMBINATION.

1,286,518. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed March 8, 1918. Serial No. 221,120.

*To all whom it may concern:*

Be it known that I, FRANK ALOISIOUS BRASSILL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Guard and Water-Feed Combinations, of which the following is a specification.

My invention relates to improvements in guard and water feed combinations suitable for use on grinding machines of the type generally such as shown and described in the patent application filed by Oscar Werner Nilson and myself on March 6, 1917, Serial No. 152,709, and allowed on date of September 25, 1917, and the object of my improvement is simplicity and economy in construction and convenience and efficiency in use.

In the acompanying drawing:—

Figure 1 is a side elevation of the head portion of a grinding machine of the type referred to above that is equipped with my improved guard and water feed combination.

Fig. 2 is an end elevation of the same.

Fig. 3 is an end elevation of the guard and water feed combination with the cover removed, showing the main part that is mounted on the head of the grinding machine.

Fig. 4 is a sectional view of the main part on the line 4—4 of Fig. 1.

Fig. 5 is a sectional view on the line 5—5 of Fig. 2.

Fig. 6 is a fragmentary view, on an enlarged scale, of the delivery end portion and adjacent parts shown in Fig. 2.

Fig. 7 is a side elevation of the same.

Fig. 8 is a sectional view on the line 8—8 of Fig. 7.

Fig. 9 is a sectional view on the line 9—9 of Fig. 6.

My improved guard and water feed combination comprises a shell-like structure for inclosing the greater part of a grinding wheel 10, leaving a part of the wheel exposed to provide access thereto for the work, after the manner of guards in common use, and has a double-walled construction for the outer wall 11 so as to provide therein a channel 12 that serves as a passage for the water that is used when the grinding machine is used for wet grinding, and is composed of a main part 13 that is mounted on the head 14 of the grinder and a cover 15.

The main part 13 comprises a hub 16 that fits over and is mounted on the end portion of the head 14, a web portion 17 that extends radially from the outer end of the hub 16, and the outer wall structure 11 that is supported by the web portion 17 and overhangs the grinding wheel 10.

The cover 15 is generally plain and closes the outer end of the main part 13.

A water inlet 18 connects with some part of the water passage 12 and the flow of water is controlled by a cock 19 that is positioned in some part of the said passage 12, and the delivery of water is effected through a nozzle 20 that is positioned at one end of the passage 12 and has at the end a swinging spout 21 that can be adjusted in position relatively to the grinding wheel 10.

The main part 13 is made of a single casting and the cover 15 is secured thereto by a plurality of screws 22.

As shown, the water inlet 18 is positioned at the rear of the main part 13, connecting with about the middle portion of the water channel 12, the latter extending for substantially the entire length of the outer guard wall structure 11; the control valve or cock 19 is at the top, being operatively housed in a tapered seat 23 that extends across the passage 12 and is extended outwardly in a boss 24; the water passage 12 being curved, concentric with the axis of the shaft 25 for the grinding wheel 10; and the delivery outlet 26 for the passage 12 is at the upper front end, adjacent the cock 19, being directed as a tangential continuation and extension of the water passage 12, the end portion 27 being threaded to receive the nozzle 20.

The nozzle 20 is composed of the fixed body or nipple part 28 that screws into the threaded end portion 27 mentioned and has a longitudinal passage 29 that initially is a direct extension of the outlet portion 26 of the passage 12 and which at the front end is continued generally downwardly through a downwardly directed branch or arm 30.

The spout 21 is adjustably supported by a pair of screws 31 and 32, that serve as pivots and clamping members, and are positioned so that the axis for the movement of the spout 21 is at the junction 33 of the branch 30 and the nipple part 28, and the said spout 21 is, furthermore, a shell-like structure that incloses the branch 30 and the outer end portion of the nipple part 28, the

interior being generally open, suitably to serve as a water delivery passage in extension of the passages 12 and 29.

The spout 21 has an opening 34 at the upper, rear portion of the inclosing wall for admitting the nipple part 28 and has an opening 35 that serves as the discharge outlet, and is positioned at the rear side of the lower end portion, suitably to direct the water flow toward the front portion of the grinding wheel 10 that is exposed through the open portion of the guard structure.

Thus the junction portion or head 33 of the nozzle 20 serves as the support for the spout 21, and means of support and adjustment of the same are provided in the following manner:—The side walls 36 of the spout 21 fit against the sides of the head 33, and the two walls 36 have alining apertures 37 and 38 for the screws 31 and 32. The aperture 37 in the left wall 36, as shown in Fig. 9, is a fit for the body of the left screw 31, and the aperture 38 in the right wall 36 is an operative fit for the thread of the right screw 32. The head 33 has on the left side a threaded hole 39 that is an operative fit for the thread of the left screw 31 and has on the right side a conical depression 40 that serves as a seat for the tapered end 41 of the right screw 32.

In locking the spout 21 to the position desired the left screw 31 is screwed inwardly so that the head 42 thereof brings the left wall 36 into bearing engagement with the head 33 so as to support the spout 21 generally and then the right screw 32 is screwed inwardly so as to apply a holding or locking tension.

The structure, as described, is adapted to operate as a guard in substantially the same manner as guards in common use, and also, by reason of the double walled construction for the outer wall, provides extra protection as a guard against the liability to injury from the bursting of the grinding wheel, and I utilize the open channel of the said double walled construction as the passage for the water feed for wet grinding.

Although, as shown, only about the upper half of the channel 12 is actively used as the water passage, comprising the portion between the inlet 18 and the outlet 26, the lower portion, below the inlet 18, which is closed at the lower, front end 42, is filled with water when in use, so that the entire channel 12 is filled with water and the water contained therein is effective as a cooling medium that serves to cool the guard structure directly and also indirectly, by conduction of heat along the hub 16 and web 17, serves to cool the portion of the grinding machine head 14 on which the hub 16 is mounted. The said portion of the grinding machine head 43 serves as the housing for one of the bearings for the shaft 25, and as the said shaft is operated at high speed the water feed, applied in the manner described, operates to reduce the heating of the said bearing due to such operation of the shaft.

I claim as my invention:—

1. A guard and water feed combination for use with a grinding machine, comprising a shell-like structure for inclosing a grinding wheel and having a passage in the peripheral wall for the delivery of a liquid cooling medium to the periphery of the said grinding wheel, the said peripheral wall being extended circumferentially so as to cover the major portion of the said periphery of the grinding wheel, and the said peripheral wall, for substantially the entire length thereof, being in the form of a double-walled structure, suitably to provide the said passage between the two walls, and which passage is also extended circumferentially for the housing of cooling medium within the major portion of the circumferential length of the said peripheral wall.

2. A guard and water feed combination for use with a grinding machine as described in claim 1, and having the delivery portion of the said passage provided with a nozzle having an adjustable swinging spout for adjusting the direction of the delivery cooling medium relatively to the periphery of the grinding wheel.

FRANK ALOISIOUS BRASSILL.