Oct. 9, 1945. C. HOLLERITH 2,386,313

SPACER

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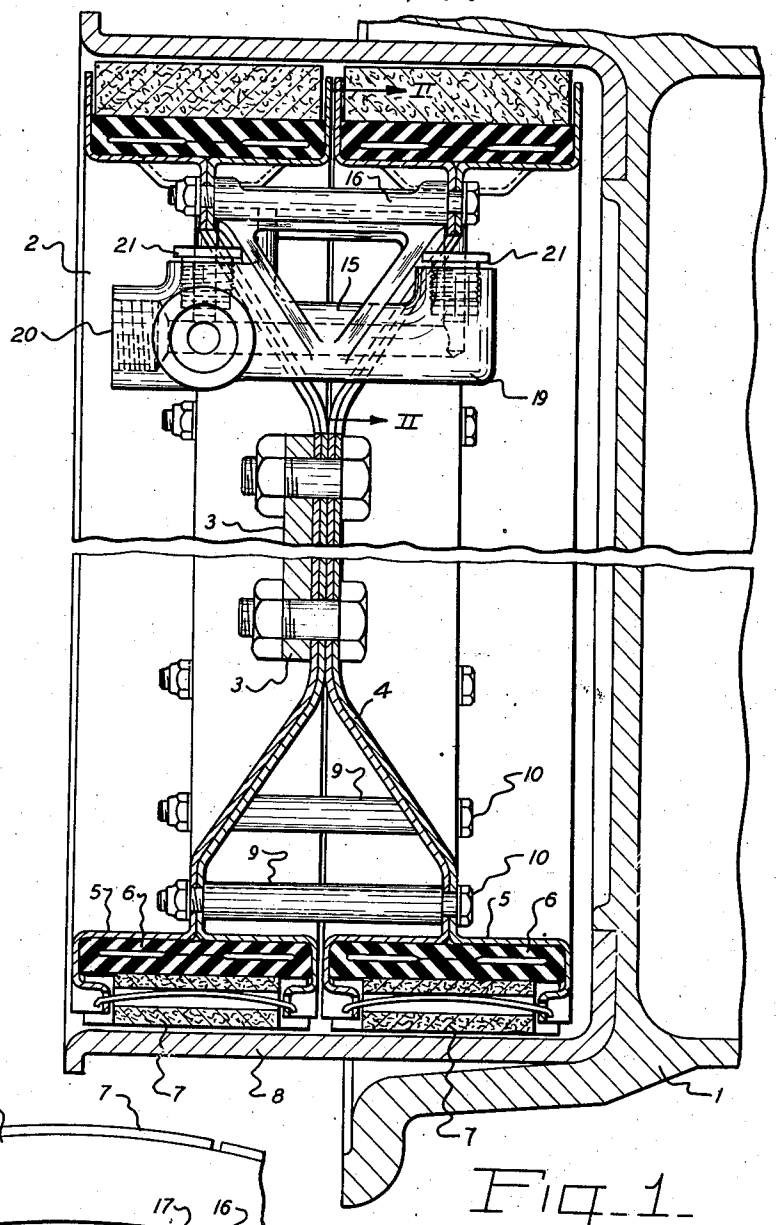



Fig. 1.

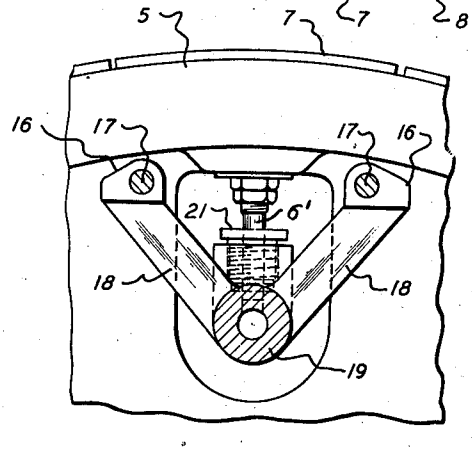



Fig. 2.

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## SPACER

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5 Claims. (Cl. 188—152)

The present invention relates to brake construction and more particularly to a detail thereof constituting a combination spacing member and hydraulic fluid supplying nozzle for association with dual brakes.

Dual brake structures of the hydraulic brake type are provided with rims for supporting the hydraulic expander tubes. The rims are supported by radially inwardly extending webs which are separated by spacers. A nozzle for conducting hydraulic fluid from a source to the expander tube is usually supported in some suitable manner from the supporting webs. According to the present invention, a unitary casting constituting a spacer for one circumferential section of the rim supporting web combined with a hydraulic fluid supplying nozzle is provided.

An object of the invention is to provide a combination spacer and hydraulic fluid conducting nozzle for dual brake expander tube rims.

Another object of the invention is to provide a casting having spacing portions for dual hydraulic brake expander tube rims and supported thereby providing a hydraulic fluid nozzle.

These and other objects residing in the arrangement, combination and construction of the parts will be apparent from the following specification when taken with the accompanying drawing, in which

Fig. 1 is a vertical section of a part of a wheel having a dual brake associated therewith, and

Fig. 2 is a section on the line II—II of Fig. 1.

Referring particularly to the drawing, the reference character 1 represents an airplane wheel having a dual brake structure generally indicated by the reference character 2. The wheel 1 is journaled upon an axle, not shown, in a conventional manner, the axle being supported by the landing gear 3. The landing gear 3 has secured thereto the webs 4 which support rims 5 respectively in which are arranged hydraulic brake expander tubes 6. Supported also by the rims 5 are brake blocks 7 arranged to be urged outwardly into braking relation with the brake drum 8 which is secured in some suitable manner to the wheel 1.

The webs 4 are brought into contact adjacent the central portions of the wheel for attachment to the landing gear 3. The outer portions of the webs 4 are flared outwardly to provide the proper spacing of the rims 5. The outer portions of the webs 4 are held in a fixed spaced relation by spacing tubes 9 spacing the webs 4 and through which extends bolts 10. The specific expander tube 6 and brake block construction 7 may take any suitable form, but preferably is constructed in accordance with the disclosure of my copending application Serial No. 275,355, filed May 24, 1939, now Patent No. 2,350,038, issued May 30, 1944.

The spacing tubes 9 serve to space the outer portions of the webs 4 in all positions with the exception of the two positions shown at the upper part of Fig. 1, and shown particularly in cross section in Fig. 2. In these positions the spacing is accomplished by a casting 15. The casting 15 is provided with a pair of tubular spacers 16 spacing the outer portions of the webs 4 and through which extends bolts 17 rigidly clamping the outer portions of the webs 4 and the tubular spacing members 16 together. As viewed in Fig. 2, there extend generally inwardly a pair of brackets 18 which meet at and are secured to a nozzle 19. The nozzle 19 extends transversely of the wheel as shown particularly in Fig. 1, and is provided with a connecting end 20 for connecting the same to a suitable source of hydraulic fluid.

Each of the hydraulic tubes 6 is provided with a tubular stem 6' communicating with the interior thereof. Each stem 6' extends downwardly into the nozzle 19 and is provided with a fluid tight connection thereof by means of stuffing boxes 21.

The castings 15 are particularly adapted to structures of the character described in that they not only serve as spacers for the expander tube rim webs, but also eliminate the necessity of providing any further connection between the connecting nozzle 19 and the webs 4. They have the further advantage that they reduce the number of parts of the brake structure.

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

1. In a brake construction, a pair of adjacent rims each having an expander tube associated therewith, a torque flange structure supporting each of said rims, said torque flange structures being spaced at their outer portions and in juxtaposition at their inner portions and separate means for spacing and supporting said structures in fixed spaced relation at their outer portions, said means having an integral member having a spacing portion for said structures to which said structures are secured and a nozzle portion for distributing fluid from a source to each of said tubes for expanding said tubes.

2. In a brake construction, a pair of adjacent rims having expander tubes associated therewith, a torque flange structure supporting each of said

rims, said torque flange structures being spaced at their outer portions and in juxtaposition at their inner portions and separate means for spacing and supporting said structures in a fixed spaced relation at their outer portions, said means comprising a pair of spacing portions located to abut opposed outer portions of said flange structure for spacing said structures to which portions said structures are secured and a nozzle portion supported by brackets projecting from said spacing portion for distributing fluid from a source to each of said tubes for expanding said tubes.

3. The invention as defined in claim 1 wherein each of said tubes is provided with a tubular stem communicating with the interior thereof, and wherein means are provided connecting said stems to said nozzle.

4. The invention as defined in claim 2 wherein each of said tubes is provided with a tubular stem communicating with the interior thereof, and wherein means are provided connecting said stems to said nozzle.

5. In a brake construction a pair of adjacent rims having expander tubes associated therewith, a tubular stem projecting from each of said tubes through said rims respectively, a structure supporting each of said rims, means for spacing and supporting said structures in a fixed spaced relation, said means comprising a pair of integral members having spacing portions for said structures to which said structures are secured, a nozzle portion for distributing fluid from a source to each of said tubes for expanding said tubes, said tubular stems projecting into communicating association with said nozzle, and brackets projecting from said spacing portions to and supporting said nozzle.

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