

No. 883,400.

PATENTED MAR. 31, 1908.

R. GRIESER.
DIE CARRIER.

APPLICATION FILED JAN. 11, 1907.

Fig. 1.

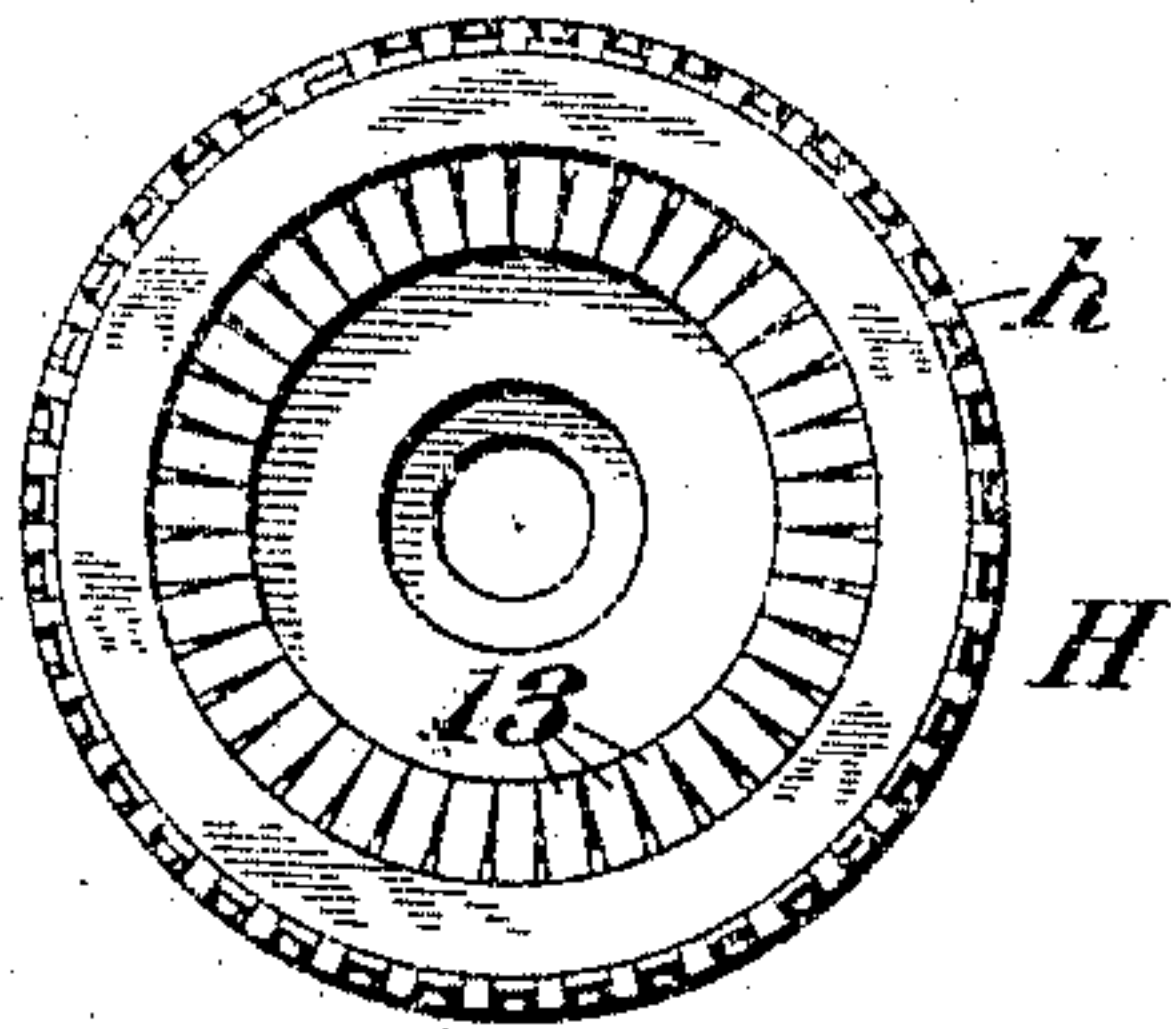


Fig. 2.

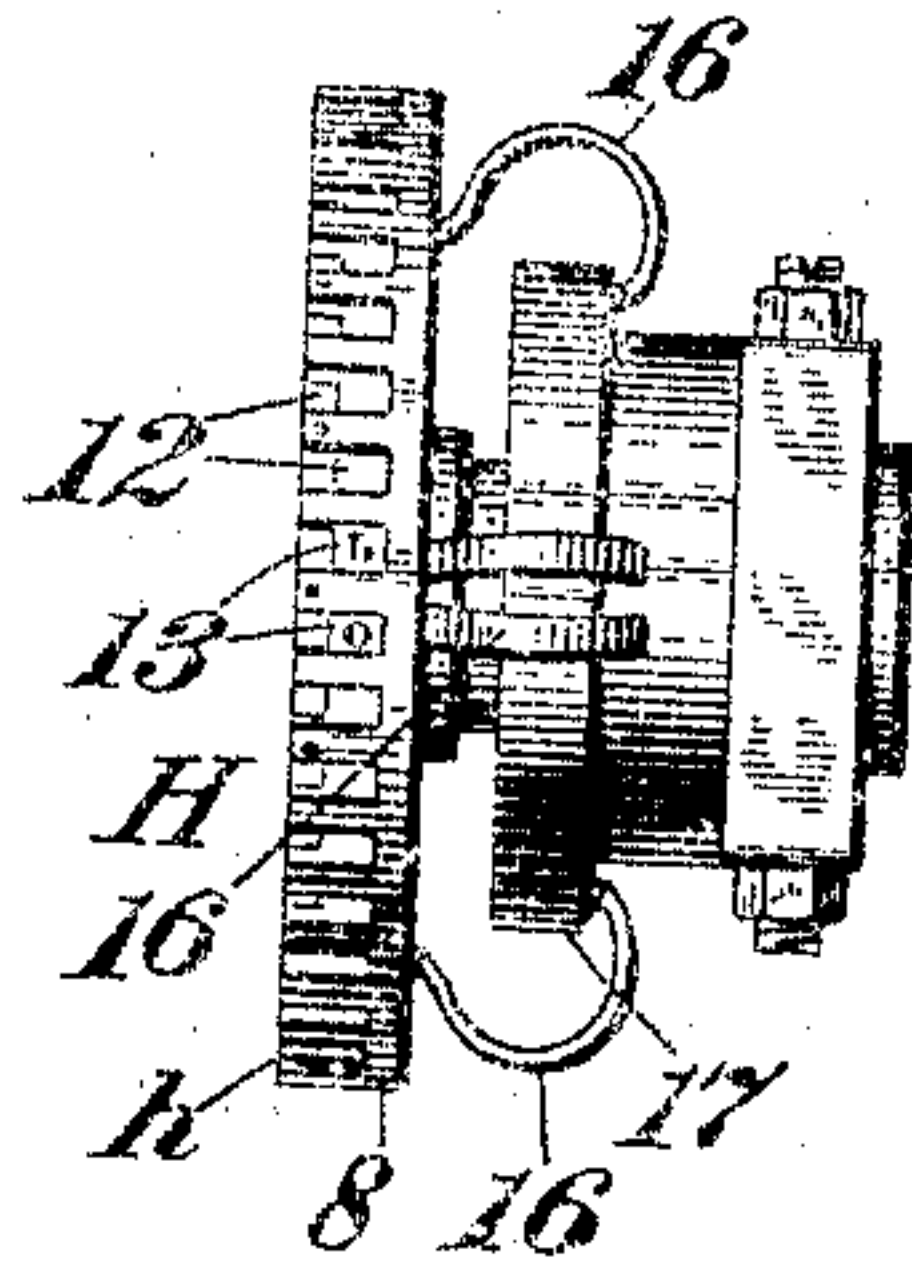


Fig. 3.

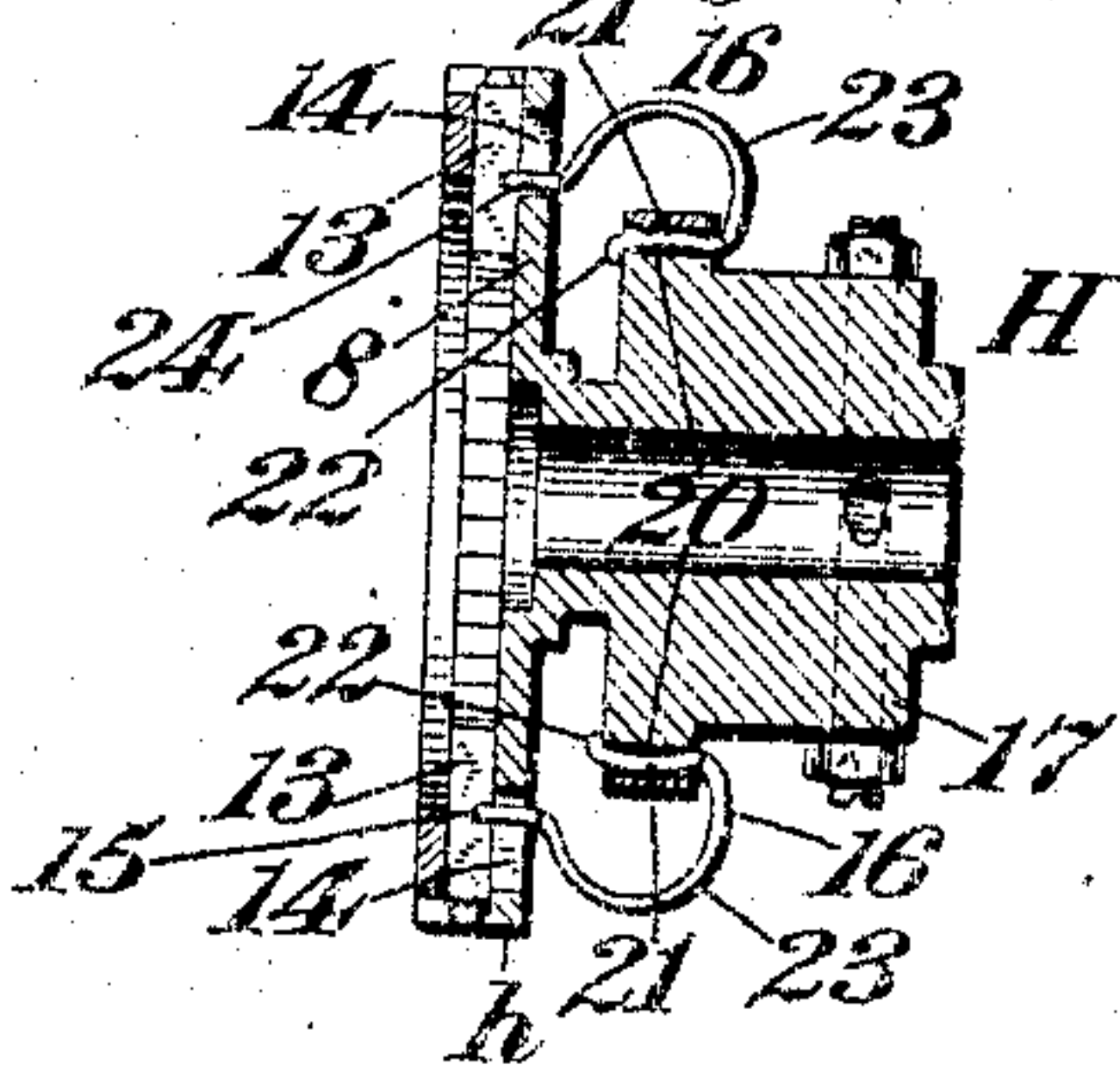


Fig. 4.

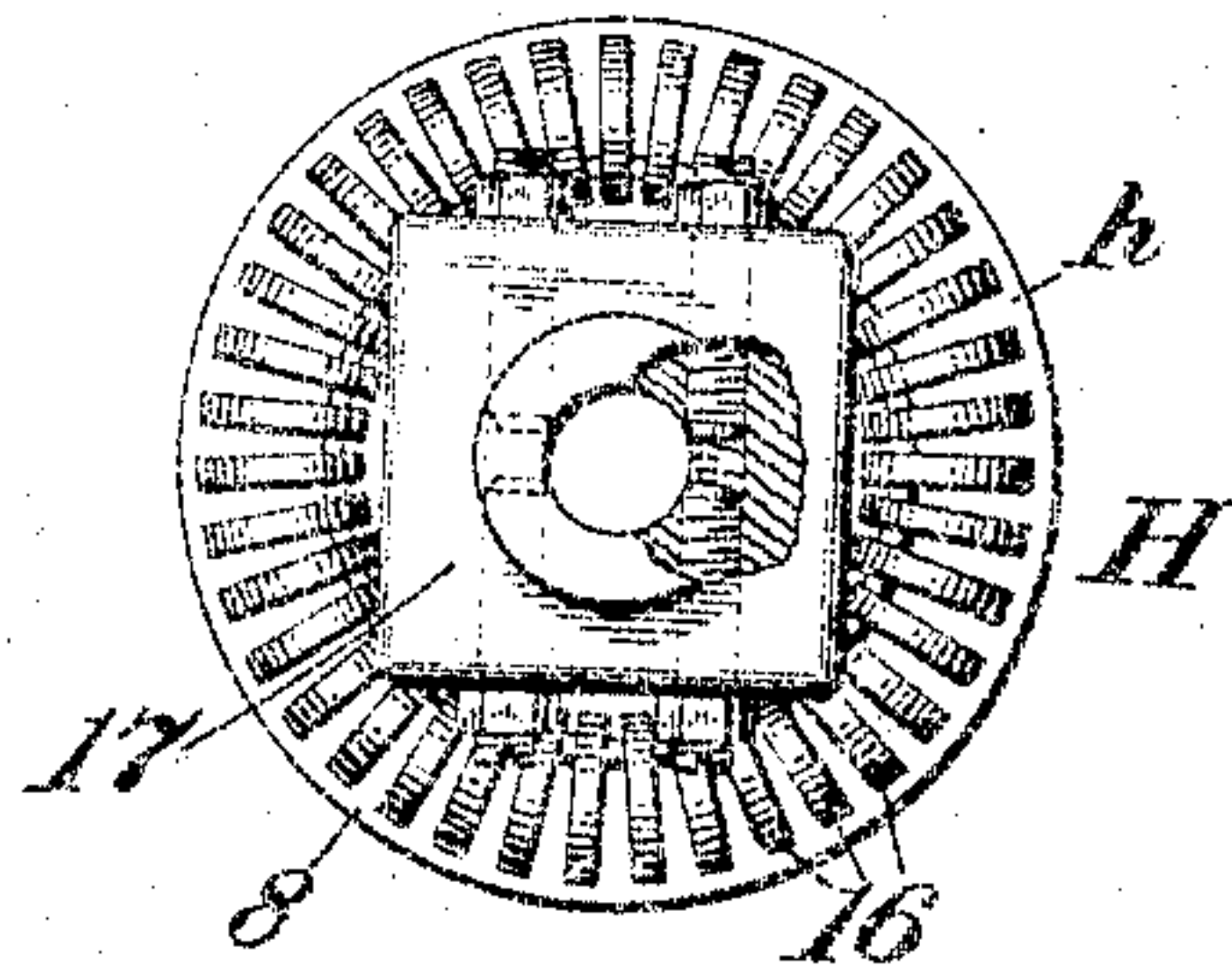


Fig. 5.

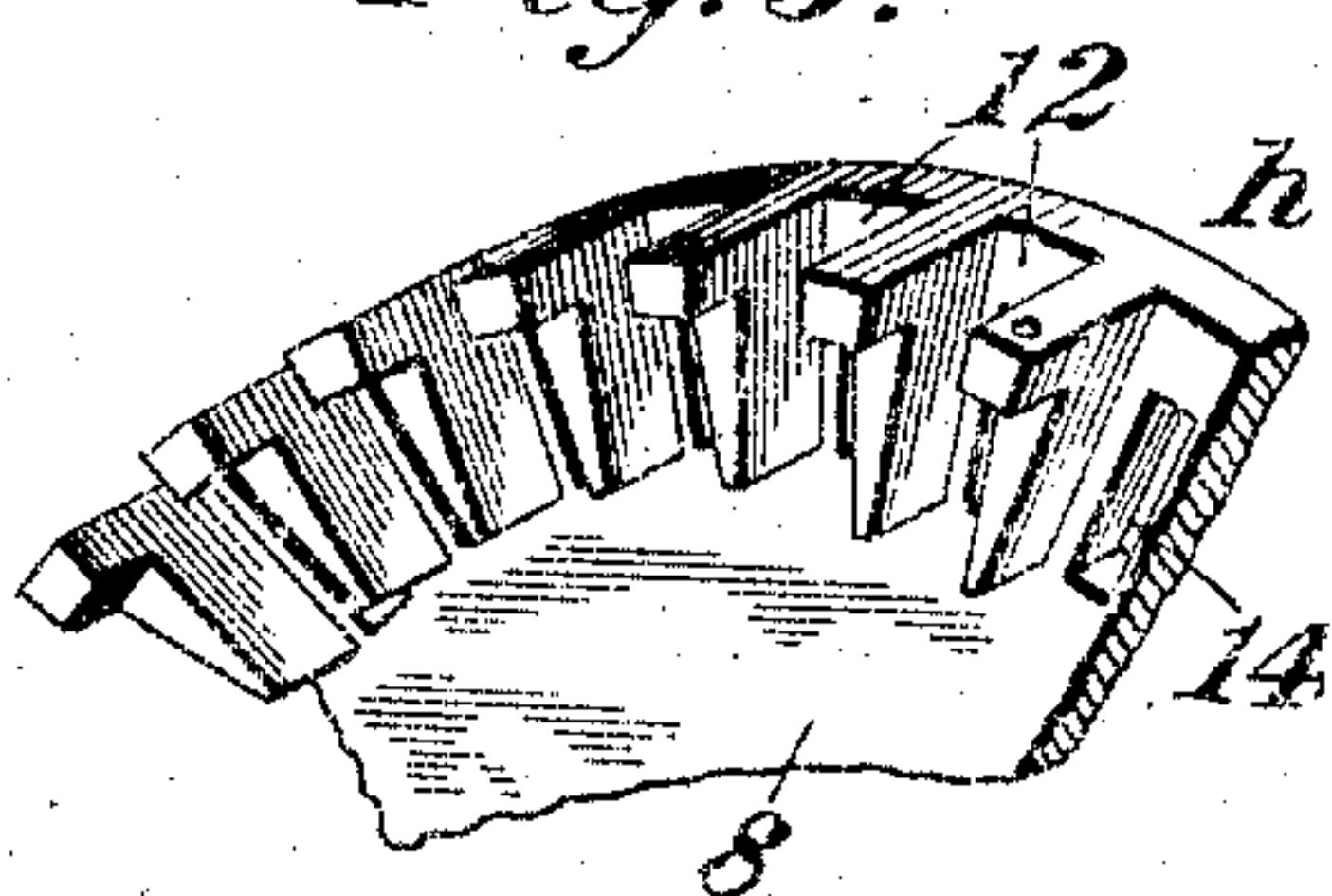


Fig. 6.

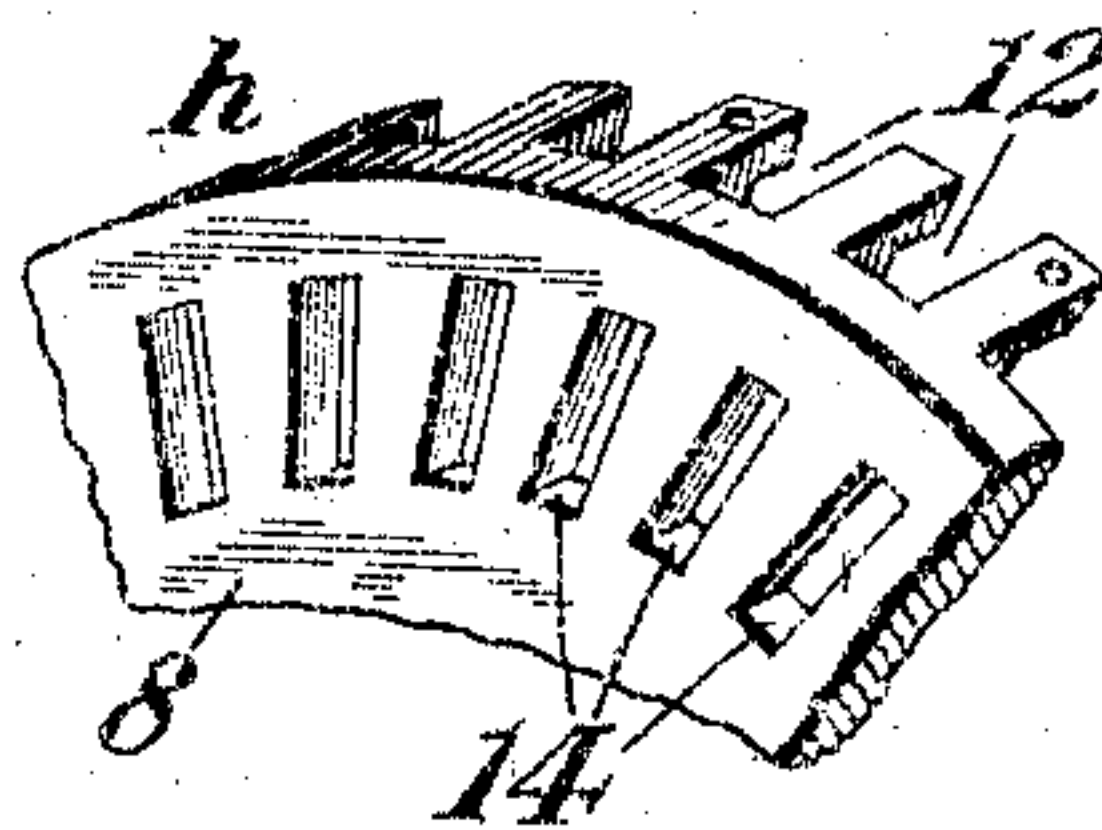


Fig. 7.

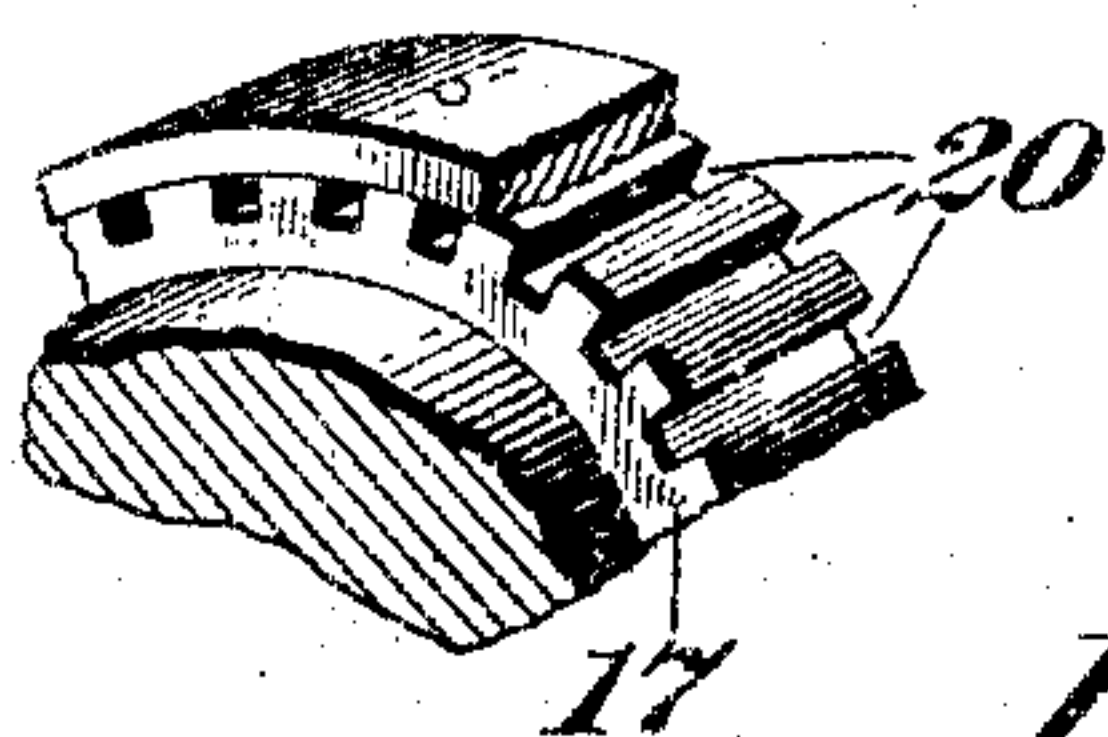


Fig. 8.

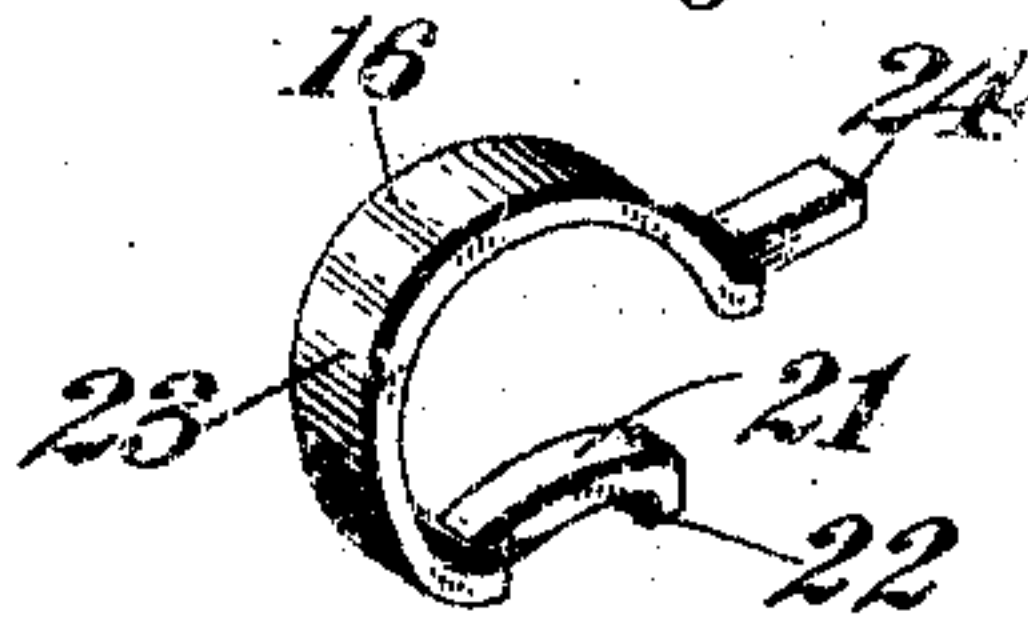


Fig. 9.

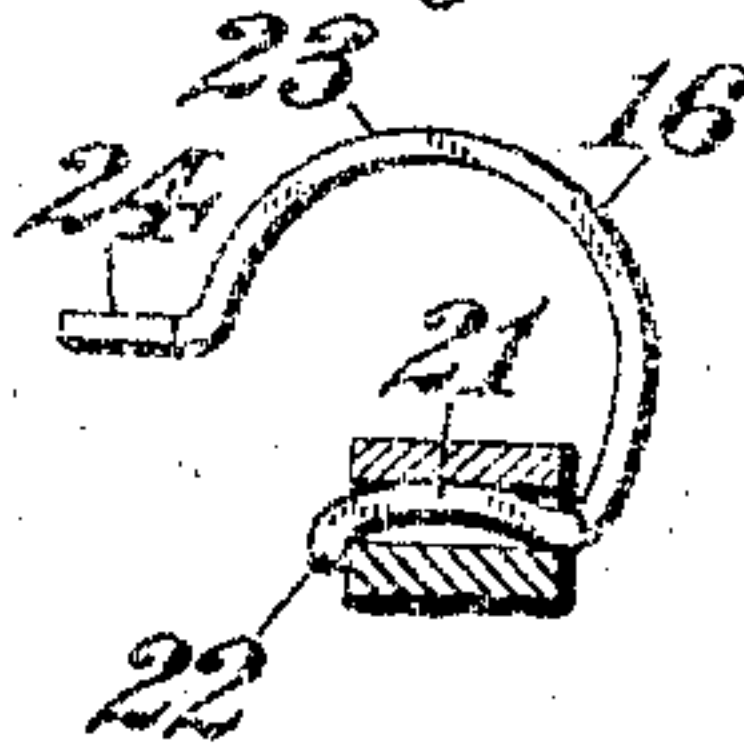
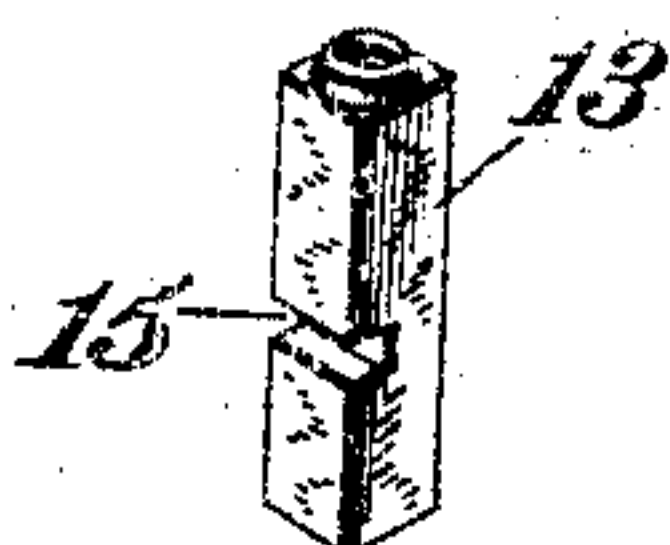


Fig. 10.



Witnesses:

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UNITED STATES PATENT OFFICE.

RICHARD GRIESER, OF NEW YORK, N. Y., ASSIGNOR TO POLLARD-ALLING MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DIE-CARRIER.

No. 883,400.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed January 11, 1907. Serial No. 351,795.

To all whom it may concern:

Be it known that I, RICHARD GRIESER, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Die-Carriers, of which the following is a specification.

This invention relates to type wheels, and has for its object to provide a structure in which a series of type members or type bars are yieldably retained in normal position, to be advanced from such position when the type wheel has different type-bars brought to printing position to permit the type to be advanced to engage the work, and thereupon to be retracted, a separate spring member being provided to retract each type-bar and yieldably retain it in normal position. By making the type-bars separate from the springs, each of these two members can be made of the requisite material, the spring members being formed from spring steel possessing the necessary resiliency; while the type-bars can be formed of metal that possesses the required degree of hardness instead of elasticity. A further object of the invention is to provide such a construction of the springs and type-bars whereby any one of either members can be readily detached without disturbing any of the others, and a new one substituted; the springs being retained in position, by means of the exertion of a comparatively small amount of force to position them in their socket portions of the holder, and the springs serving to retain the type-bars in their normal position yet permit free operation of the type-bars. The type-bars being removable from the device by slightly bending the springs without necessitating their removal.

In the accompanying drawings showing a device embodying my invention, Figure 1 is an end elevation. Fig. 2 is a side elevation, with a number of the springs and type-bars removed. Fig. 3 is a vertical axial section. Fig. 4 is an end view showing the opposite end to that shown in Fig. 1. Figs. 5, 6 and 7 are fragmentary views showing the construction of the holder. Fig. 8 shows enlarged a view of one of the springs detached. Fig. 9 shows one of the springs with its support in the holder; and Fig. 10 shows enlarged one of the type-bars detached.

The holder denoted generally by H is in the nature of a sleeve or hub, and is pro-

vided with a disk portion *h* adjacent one end containing a circular series of radial sockets 12 in each of which slides a type-bar 13 shown separately in Fig. 10. In the side of the disk 8 opposite each of the sockets 12 is a slot 14, and each of the type-bars 13 is provided with a recess 15 that registers with the slot 14 during the travel of the type-bar.

A plurality of spring members 16 have one end suitably secured to the body portion of the holder 17, and the other end portion of each spring projects through the slot 14 and engages the recess portion 15 of the type-bar. The spring is so shaped and mounted as to normally retain the type-bar in the position shown, and to permit radial outward movement of the type-bar. Upon such movement the spring is flexed, and its end portion will move through the slot 14; but immediately upon the type-bar being released it will be retracted in the socket by the spring. Furthermore, the spring is so shaped as to have its end pressed into engagement with the recess and retained in such position, by reason of its resilient structure. But to remove any of the type-bars, it is merely necessary to bend the spring to move its end out of the recess, when the type-bar is free to be removed. This does not require the removal of the spring.

Suitable means are provided for removably retaining the spring in the hub portion 17 of the holder. The construction shown is similar to that shown and claimed in a United States application for Letters Patent, Serial Number 326,205, filed July 14th, 1906. The hub portion 17 is provided with a series of longitudinal sockets 20, and the other end portions of the springs 16 are somewhat bowed at 21 from one side, and the other side is provided with a ledge 22. This end portion of the spring is assembled by inserting the ledge end of the spring in the socket at its end not adjacent the disk portion *h*. Upon passing through the socket, the ledge of the spring will engage the end of the socket wall, and tend to prevent removal of the spring, except upon the application of considerable force. Yet the spring can be removed by merely exerting a strong pull upon it by means of a pair of pliers or otherwise. After this end of the spring has been inserted, its bowed portion 23 will bring the other end of the spring, that is somewhat flattened at 24 into the slot 14

in the disk, and upon bringing its end opposite the recess 15 in the type-bar, this end will be forced into the recess and retained in such position. It will be observed that the outward movement of the type-bar will produce a flexure of the spring, that will tend to force the ledge 22 into stronger engagement with the end wall of the socket, that will resist displacement of the spring, also the spring may be bent to permit removal of the type-bar without its being disengaged from the socket portion at 20.

Having thus described my invention, I claim:

1. In a type wheel, a holder containing a series of sockets, type-bars slidable in the sockets, a second series of sockets in the holder, a series of spring members having one end arranged to engage each type-bar, the other end portions of the springs being bent from one side and provided with a ledge at the opposite side of such end, whereby upon insertion of this end of the spring in the second socket the bent portion of the spring will cause the ledge to engage the end portion of the second socket and removably retain the type-bar in such socket.

2. In a type wheel, a holder having a series of sockets with slots at one side of the holder at the intermediate portion of the socket, type-bars slidable in the sockets and each provided with a recess opposite said slotted portion, the holder being provided with a second series of sockets, and a plurality of spring members each being bent from one side near one end portion and having a lug projecting from the opposite side at said end, the springs being removably retained in the second set of sockets by said end portions, the other ends of the springs projecting through said slots and yieldably retained in engagement with the type-bars at their recessed portions.

3. In a type wheel, a holder having a series of sockets and having slots at one side of the holder, type-bars slidable in the sockets and each provided with a recess opposite said slotted portion, the holder having a flange portion provided with a series of sockets, a plurality of springs, each spring being bent from one side at one end portion and having a ledge on the opposite side at such end, the springs being removably retained in the flange sockets by such end portions, the springs being bowed and having their other ends projecting through said slots into the recessed portions of the type-bars, whereby the type-bars are yieldably retained in normal position and have their travel limited by the movement of the springs through such slots.

4. In a type wheel, a holder provided with a series of radially arranged sockets, a type-bar slidable in each socket and provided with a recess on one side, the holder having a slot

at the intermediate portion of each socket adjacent the recess of the type-bar, and a series of spring members each attached to the holder at one end and having the other end projecting through one of said slots respectively and engaging the recess in the type-bar, whereby a limited movement of the type-bar is permitted that is returned to normal position by the spring, the spring being retained in engagement with the type-bar by its resilient structure.

5. In a type wheel, a holder provided with a series of radially arranged sockets, a type-bar slidable in each socket and provided with a recess on one side, the holder having a slot at the intermediate portion of each socket adjacent the recess of the type-bar, and a series of spring members each attached to the holder at one end and having the other end projecting through one of said slots respectively and engaging the recess in the type-bar, whereby a limited movement of the type-bar is permitted that is returned to normal position by the spring, the holder being provided with a second set of openings, said spring having its other end removably retained in said openings.

6. In a type wheel, the combination of a holder provided with a series of radially arranged sockets and a slot leading into each socket at its intermediate portion, a type-bar slidable in each socket and having a recess on one side adjacent said slot, the holder being provided with a circular series of longitudinal sockets, and a plurality of bowed springs, each spring having one end removably retained in a longitudinal socket, the other end of the spring projecting through one of said slots into the recess portion of the type-bar whereby the type-bars are yieldably retained in normal position and the movement thereof limited by the travel of the spring through said slot.

7. In a type wheel, a holder having a disk portion containing a series of radially arranged sockets extending inward from the periphery, and having slots at one side of the disk at the intermediate portion of the sockets, type-bars slidable in the sockets and each provided with a recess adjacent the slotted portion, the holder having a flange portion provided with a series of longitudinal sockets, and a plurality of bowed spring members, each spring having one end fastened in a longitudinal socket portion, the other end of each spring projecting through a socket into a recess in the type-bar.

8. In a type wheel, the holder containing a series of sockets arranged in a circle, type-bars slidable in said sockets, a second series of sockets, a series of spring members, having one end arranged to engage each type-bar, the other end portions of the springs being bent from one side and provided with a ledge at the opposite side of such end where-

by upon insertion of this end of the spring in the socket, the bent portion of the spring will cause the ledge to engage the end portion of the socket and removably retain the type-bar in the socket portion.

9. In a type wheel, a holder provided with a series of radially arranged sockets, type-bars slidable in such sockets and provided with recesses in their sides, the holder also being provided with another set of sockets extending longitudinal, a series of springs, each spring having one end portion slightly bent from one side and containing a ledge projecting from the other side at such end, the springs being removably retained in the longitudinal sockets at such end portion, the springs being bowed and having their other end portions yieldably retained in engagement with the type-bars at their recessed portions.

10. In a type wheel, a holder having a disk portion containing a series of radially arranged sockets extending inward from the periphery with slots at one side of the disk at the intermediate portion of the sockets, type-bars slidable in the sockets and each provided with a recess opposite said slotted portion, the holder being also provided with a series of sockets, and a plurality of spring members, each being bent from one side near one end portion and having a lug projecting from the opposite side at said end, the

springs being removably retained in the second set of sockets by said end portions, the other ends of the springs projecting through said slots and yieldably retained in engagement with the type-bars at their recessed portion.

11. In a type wheel, a holder having a disk portion containing a series of radially arranged sockets extending inward from the periphery and having slots at one side of the disk, type-bars slidable in the sockets and each provided with a recess opposite said slotted portion, the holder having a flange portion provided with a series of longitudinal sockets, a plurality of spring members, each spring being bent from one side at one end portion and having a ledge on the opposite side at such end, the springs being removably retained in the longitudinal sockets by such end portions, the springs being bowed and having their other ends projecting through said slots into the recess portions of the type-bars, whereby the type-bars are yieldably retained in normal position and have their travel limited by the movement of the spring through such slots.

Signed at Nos. 9 to 15 Murray street, New York, N. Y., this 7th day of January, 1907.
RICHARD GRIESER.

Witnesses:

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F. E. BOYCE.