

May 6, 1924.

J. M. GORDON ET AL

1,492,792

LINED FEED COLLET

Filed Oct. 5, 1921

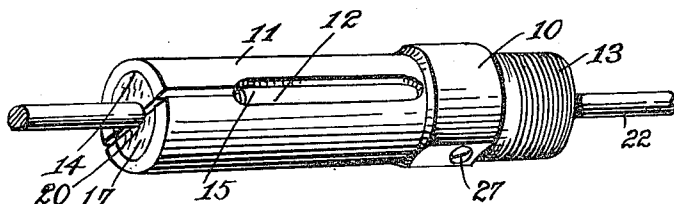


Fig. 1.

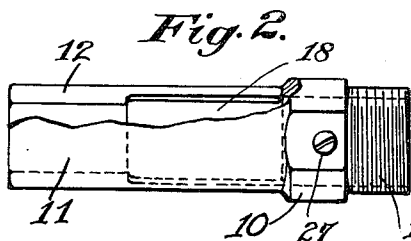


Fig. 2.



Fig. 3.

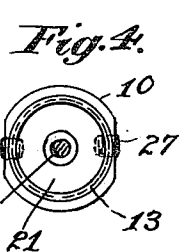


Fig. 4.

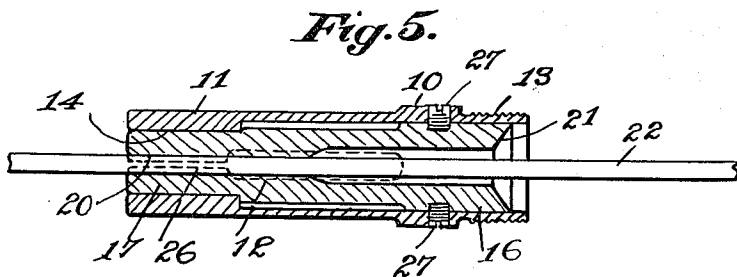


Fig. 5.

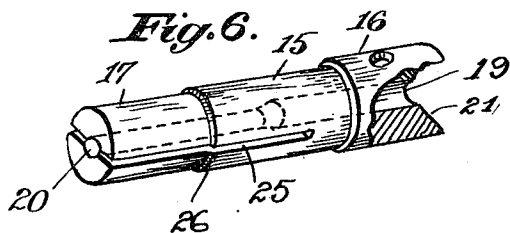


Fig. 6.

Inventor
Joseph M. Gordon
By their Attorneys: Robert T. Miller
Weed & Gray

UNITED STATES PATENT OFFICE.

JOSEPH M. GORDON AND ROBERT T. MILLER, OF CLEVELAND, OHIO, ASSIGNORS TO
THE NATIONAL ACME COMPANY, A CORPORATION OF OHIO.

LINED FEED COLLET.

Application filed October 5, 1921. Serial No. 505,536.

To all whom it may concern:

Be it known that we, JOSEPH M. GORDON and ROBERT T. MILLER, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lined Feed Collets, of which the following is a specification.

This invention relates to improvements in feed collets designed particularly for attachment to the end of a stock bar feed tube of a machine, such as a metal working machine, the object thereof being to provide an improved feed collet and also to provide a feed collet having means for preventing the collet from scratching or otherwise damaging the stock or work when it is intermittently fed through the feed tube and the collet.

In carrying out this object, it is also the purpose of this invention to provide at the same time a feed collet which will be both lighter and cheaper in construction and at the same time highly efficient, serviceable and durable in use.

Heretofore in practice, when the stock or work, such as soft brass wire, was fed back and forth through the feed collet, the metallic gripping surfaces thereof scratched or marred the surfaces of the wire, which has been found objectionable and disadvantageous, and it is the object therefore, of this invention, to do away with these disadvantages and provide a feed collet which will grip and feed wire or stock formed from relatively soft metal or even hard metal without scratching or injuring the surfaces of the same. In pursuance thereof the feed collet is provided with a lining, preferably of hard wood, fibre or other suitable material, the lining having substantially the same construction and shape as the collet and suitably secured to the same whereby in operation the stock will be fed through the feed collet without any injury to the same.

Other objects of this invention will appear in the following description thereof, reference being had to the accompanying drawing forming a part of this specification, wherein like reference characters indicate corresponding parts in the several views, and wherein Fig. 1 is a perspective view illustrating an embodiment of our invention; Fig. 2 is a side view of the same and partly broken away; Fig. 3 is a front

end view thereof; Fig. 4 is a rear end view thereof; Fig. 5 is a side view in section of the construction illustrated in Fig. 1; and Fig. 6 is a perspective view partly broken away of the lining or core member.

Our invention is of course not limited in the adaptation thereof to any particular form or style of feed collet, nor to a feed collet formed or constructed in accordance with any preferred method or process of manufacture, and in the drawing we have illustrated, by way of example only, one form of feed collet, which comprises a tubular metallic body 10 having slots 12 forming forwardly projecting resilient gripping fingers 11. Rearwardly of the body portion 10 the collet is provided with a reduced or shoulder formed portion 13 which, as illustrated, is threaded in order to permit attachment of the feed collet to the feed tube of the machine. In the present instance, the feed collet is shown with a pair of gripping fingers, although it is to be understood that any desired number may be provided. These fingers 11 terminate at their forward ends in the usual gripping portions 14. The outer metallic member of the feed collet is provided with a lengthwise extending bore therethrough, and within this bore is inserted a suitable lining or core member 15, which is preferably shaped substantially in accordance with the shape of the body member of the collet, and which is adapted to cover the major portion of the inner surface of the same. The lining or core 15 is provided with a shoulder formed portion 16 adapted to lie in juxtaposition to the inner surfaces of the body member and the forward portion of this lining is slotted as at 25 to form resilient gripping fingers 26 corresponding to the gripping fingers 11 of the outer member. The gripping portions 17 of the lining or core member are shaped so as to conform substantially to the shape of the gripping parts 14 of the fingers 11, and the core is also provided with a lengthwise extending bore of any preferred diameter in order to permit the stock or work to be fed therethrough. The inner surfaces 20 of the gripping portions 17 are shown in the present instance as substantially cylindrical in configuration, but it is of course obvious that the same in practice will be shaped in accordance with the shape of the

work to be gripped and intermittently fed therethrough.

As illustrated in the drawing, the lining or core 15 may preferably terminate somewhat short of the rear end of the collet and the same is provided with tapered surfaces 21 in order to facilitate the entrance of the work into the collet. The lining or core member may be secured to the outer metallic member in any preferred manner, and in the present instance the parts are secured together by means of set screws 27, which project through the body portion 10 a suitable distance into the core or lining.

It will be seen therefore, that we have provided an improved feed collet comprising an outer member formed from steel or other metal and an inner member adapted to cover the surfaces thereof and formed of any suitable soft or softer material, the result of this construction being to permit the work to be gripped by the collet and fed therethrough without any injury or damage to the surfaces thereof. Furthermore, we have provided a feed collet wherein the amount of metal used is considerably reduced, thereby reducing the cost of the article and at the same time resulting in the provision of a feed collet which is considerably lighter in construction, and at the same time equally as durable and serviceable as collets heretofore constructed entirely of metal.

From the foregoing it will be seen that we have provided an improved collet comprising an inner member and an outer member each comprising a body portion and a resilient gripping portion, one member therefor substantially corresponding in shape to that of the other, the result being that the resilient action of one member is reinforced by that of the other and when the inner member is formed of some suitable soft material, it not only prevents the marring of the work but it assists in polishing the work as it passes therethrough and can be used on either steel or brass rods or thread rods without marring the threads and effectually grips the work since even when made of wood the resilient fingers of the inner member spring with the fingers of the outer member.

We claim as our invention:

1. A feed collet comprising a tubular inner member and a tubular outer member, each substantially conforming in shape one to the other and secured together and each comprising a body portion having longitudinally projecting resilient portions, the resilient portions of the inner member being in position to grip the work.

2. A feed collet comprising a metal outer member and an inner member of relatively soft material, each of said members comprising a body portion having a slotted

portion forming a plurality of resilient fingers and means for detachably securing said members together.

3. A feed collet comprising a metal outer member and an inner member of relatively soft material, each of said members comprising a body portion having a slotted portion forming a plurality of resilient fingers, said inner member being held in fixed position in the body member.

4. A feed collet comprising a metal outer member and an inner member of relatively soft material, each of said members comprising a body portion having a slotted portion forming a plurality of resilient fingers, said inner member substantially conforming in shape to the body and slotted portions of the outer member.

5. A feed collet comprising a metal outer member and an inner member of wood, each of said members comprising a body portion having a slotted portion forming a plurality of resilient fingers, said inner member substantially conforming in shape to the body and slotted portions of the outer member and secured to said outer member.

6. A feed collet comprising a hollow member having a resilient portion and a one-piece tubular lining member formed of relatively soft material secured in said body member and having a corresponding resilient portion for gripping the work.

7. A feed collet formed from a pair of members one secured within the other, and each comprising a tubular formed member comprising a body portion having resilient longitudinally projecting portions.

8. A feed collet comprising an outer metal member and an inner wood member secured together against independent movement, each thereof having resilient projecting fingers.

9. As an article of manufacture a feed collet comprising a body portion having a plurality of resilient gripping members having a bore therethrough, and an expandable and contractible lining conforming in shape to said body and gripping members and held in fixed position within said bore.

10. As an article of manufacture, a feed collet formed from a pair of dissimilar members having a bore therethrough, one of said members comprising a tubular core having a plurality of resilient fingers of relatively soft material terminating in gripping surfaces shaped to conform to the work to be fed.

11. As an article of manufacture, a feed collet comprising a metal body member, and a core member of relatively soft material secured thereto, one of said members having means for positioning the collet on to the end of a feed tube and both of said members having a plurality of correspondingly formed projecting resilient gripping fingers.

12. As an article of manufacture, a feed the core member having a tapered end at
collet comprising a metal body member, and the bore thereof. 10
a core member of relatively soft material
secured thereto, one of said members having
5 means for positioning the collet on to the
end of a feed tube and both of said members
having a plurality of correspondingly
formed projecting resilient gripping fingers,

Signed at Cleveland, county of Cuyahoga,
State of Ohio, this 22nd day of September,
1921.

JOE M. GORDON.
ROBERT T. MILLER.