

No. 670,051.

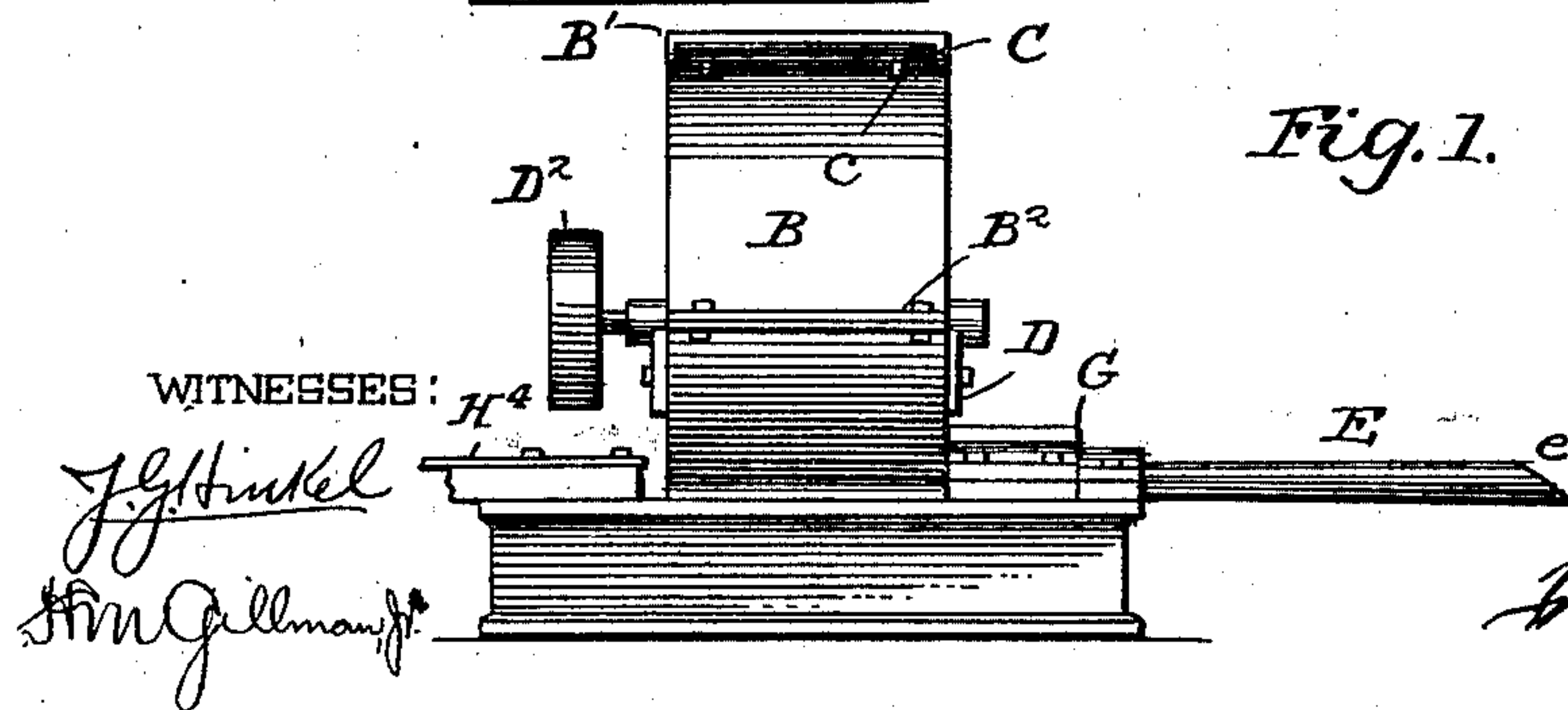
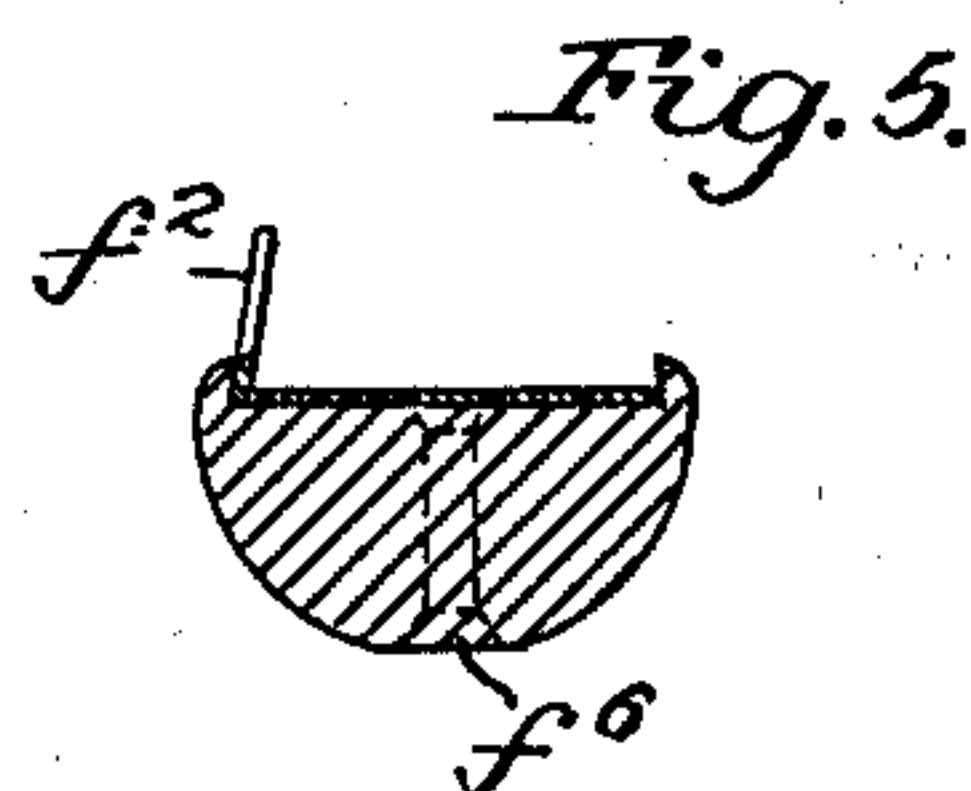
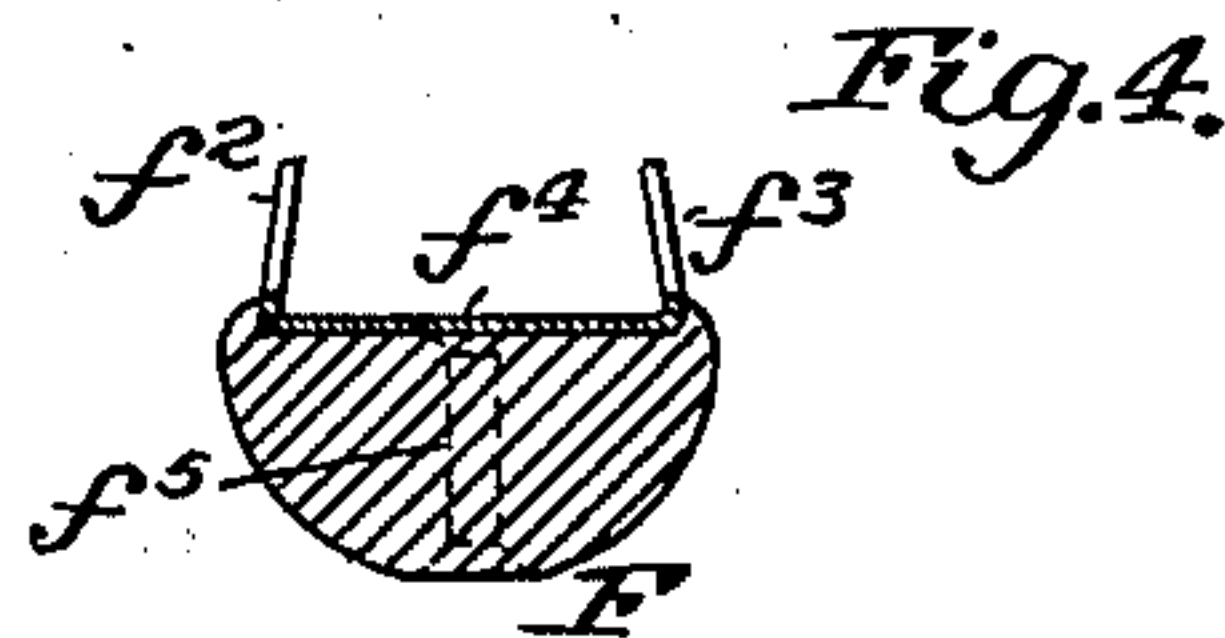
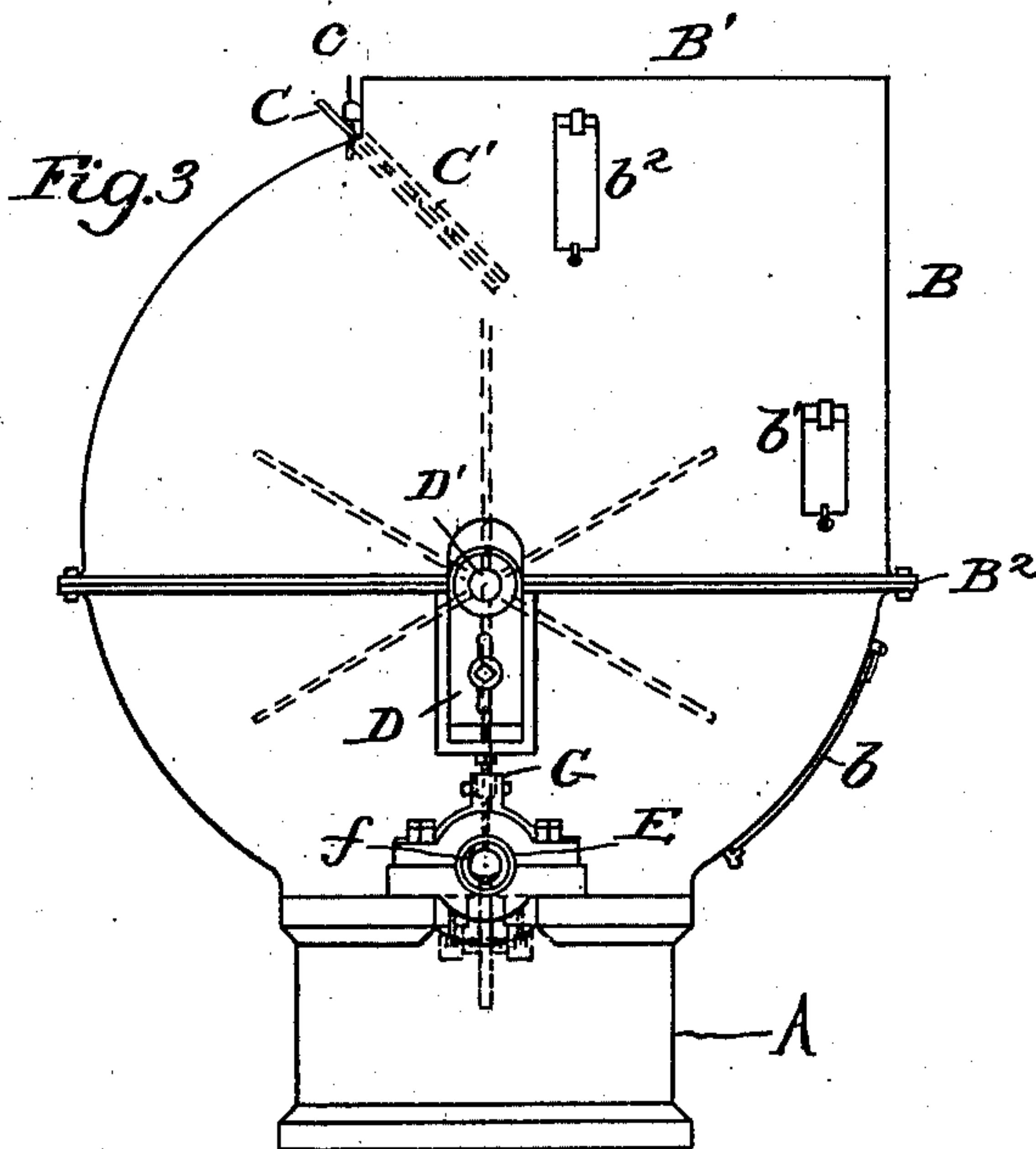
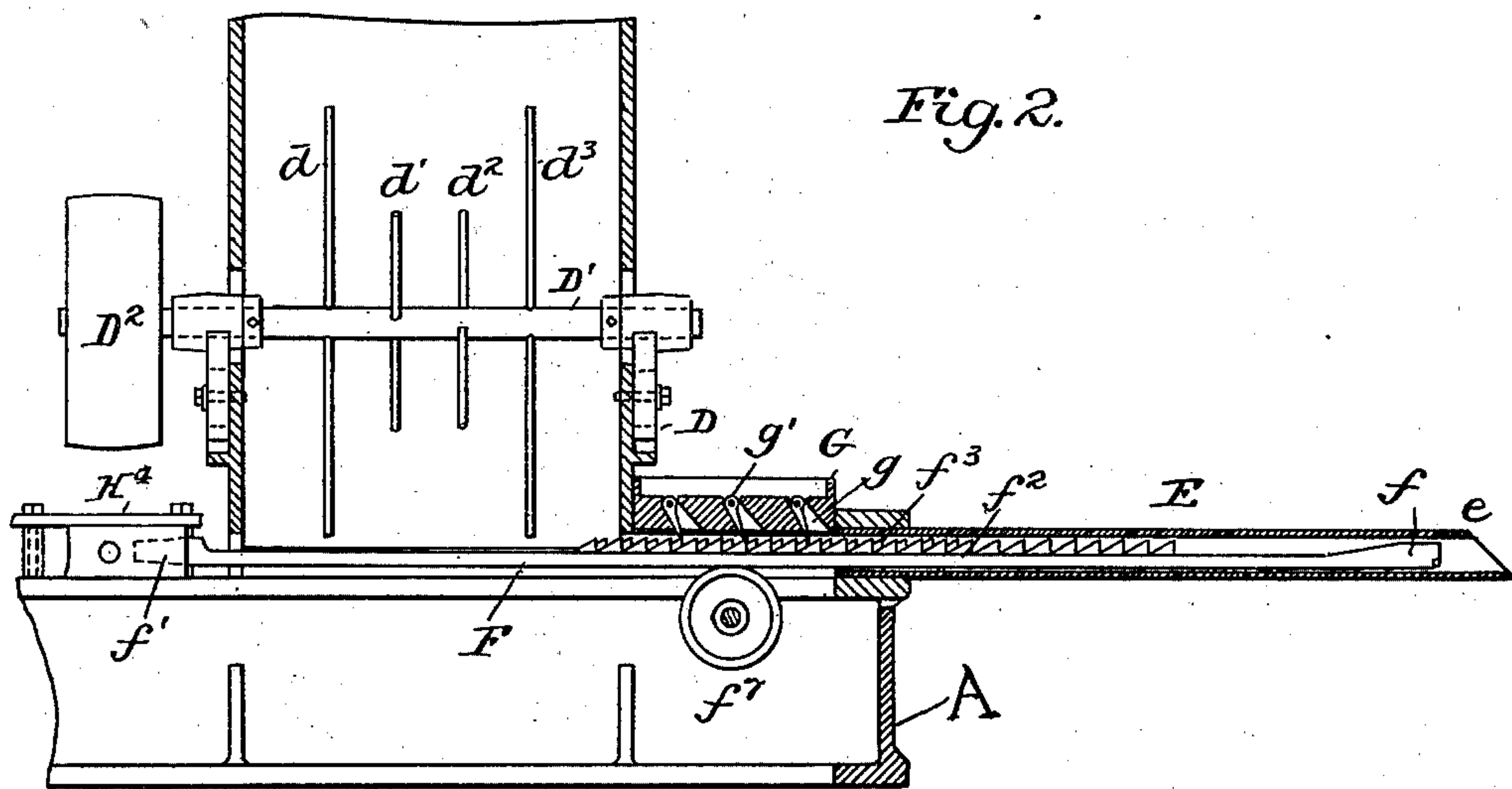
Patented Mar. 19, 1901.

O. JONES.

MACHINE FOR STUFFING HORSE COLLARS.

(Application filed May 7, 1900.)

(No Model.)



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MACHINE FOR STUFFING HORSE-COLLARS.

SPECIFICATION forming part of Letters Patent No. 670,051, dated March 19, 1901.

Application filed May 7, 1900. Serial No. 15,745. (No model.)

To all whom it may concern:

Be it known that I, OTIS JONES, a citizen of the United States, residing at Senoia, in the county of Coweta and State of Georgia, have
5 invented certain new and useful Improvements in Machines for Stuffing Horse-Collars, of which the following is a specification.

My invention relates to machines for stuffing horse-collars and the like, and has for its
10 object to provide an improved, simplified, and effective structure for accomplishing this result; and it consists in a machine embodying the various features of construction and arrangement of parts having the general mode
15 of operation substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, wherein I have shown a preferred embodiment of my invention, Figure 1 is a side elevation of the machine. Fig. 2 is an enlarged longitudinal section through the hopper, stuffing-tube, and other devices, other parts being broken away and omitted for convenience of illustration. Fig. 3 is an end view, and
25 Figs. 4 and 5 are enlarged transverse sectional views of the stuffing-rod.

While my invention is intended more particularly for stuffing horse-collars, pads, and the like, of course it can be used for stuffing
30 other articles, its form and shape being varied, if necessary, to adapt it to the particular work intended.

It is one of the objects of my invention to provide a machine which will effectively do
35 the work in a rapid manner and which will operate in connection with various materials—such as hair, moss, cotton, wool flock, straw, pine fiber, and the like—and while the machine is adapted to use all these substances I
40 will describe it in connection with the use of cotton.

In the accompanying drawings, A represents a suitable bed or frame, and mounted on the bed is a hopper B, which may be made of
45 metal or other material and which has an open top B', through which the material, as the cotton, may be fed, it being conveniently delivered thereto by a tube or otherwise from the floor above the machine. The hopper, as
50 shown, is generally cylindrical in shape and is conveniently made of two parts secured to-

gether by flanges, as at B², and it may be provided with doors *b b'* b², by means of which access can be obtained to the interior for the purpose of inspection or repair. Mounted in the
55 hopper and extending transversely thereof is an adjustable slide or gate C, it being shown as moving in guides on the inside of the hopper and as being adjusted by a screw or bolt *c* and being inclined as shown. 60

Mounted in suitable bearings D is a shaft D', provided on its outer end with a driving-pulley D² and having projecting through the shaft a number of flails *d d' d² d³*, which are rotated within the hopper, and the bearings
65 D are preferably adjustable, as shown, so as to regulate the position of the shaft in the hopper, and more especially to adjust its relation to the stuffing-rod.

Extending from the lower portion of the
70 hopper there is a passage-way communicating with a stuffing-tube E, which may be of metal or other material and which is supported in suitable bearings on the frame, and its end *e* is preferably beveled, as shown in
75 Fig. 2, and this is of a shape or form adapted for the purpose designed, and when the machine is used for stuffing horse-collars and the like the collar is slipped over the tube and held thereon while it is being stuffed or
80 packed with the desired material.

Arranged to pass through the lower portion of the hopper and through the passage-way and tube is a stuffing-rod F, and this is arranged to be reciprocated in the tube and
85 passage-way and through the bottom of the hopper by any suitable means, one form of which will be described hereinafter. In the present instance this rod, which may be of metal or other suitable material, is formed
90 with a practically round head *f* at one end and may be similarly or otherwise formed at the other end *f'*, where it is connected with the reciprocating mechanism, and between the two ends the top portion is flattened, as
95 shown in Figs. 4 and 5. Mounted on this flattened surface in any suitable way are a series of teeth *f²*, and these are arranged on one side of the flattened surface and extend a considerable distance between the ends of
100 the rod, which distance is preferably greater than the width of the hopper. Also mounted

on the rod on the other side of the flattened surface is another series of teeth f^3 , and these extend a less length than the teeth f^2 and preferably are about as great in extent as the width of the hopper. These two sets or rows of teeth are arranged in staggered relation to each other, as best seen in Fig. 2—that is, the tips of the teeth of one set are opposite the depressions between the teeth of the other set. While these rows of teeth or bars having teeth may be made separately and attached to the rod in any convenient way, in Fig. 4 I have shown a preferred form, wherein both sets of teeth are formed on the upturned edges of the plate f^4 , which is fitted into a recess in the face of the rod F and secured thereto in any suitable way, as by rivets or bolts f^5 . This construction is economical and efficient and the plate having the teeth can readily be removed for adjustment or otherwise when desired; but other ways of mounting the teeth in this general relation are within the scope of my invention. The under side of the rod is also preferably flattened, as at f^6 , and mounted in the frame upon a suitable support is a friction-wheel f^7 , on which the rod rests and over which it reciprocates, and this aids in avoiding friction between the rod reciprocating on the bed and in the tube.

It will be observed that the packing-rod is arranged to reciprocate beneath the flails in the tube and that the tube is connected to the hopper, so that its longitudinal axis is parallel to the axis of the flail-shaft. This is advantageous, as the flail rotates and passes transversely over the stuffing-rod, and thereby spreads the cotton or other material evenly and throughout the length of the stuffing-rod exposed to the flails. In this way the exposed teeth on the rod are all supplied with material. If the axis of the flails were transverse to the longitudinal axis of the rod, the flails would not evenly deliver the material to the rod and it would not be able to take up an even and well-distributed load of cotton or other material to be forced through the tube.

Mounted over the rod and supported on the frame is a box or block G , having a number of inclined openings g , in which are pivotally mounted the strippers g' , the points of which normally extend downward between the rows of teeth on the reciprocating rod; but the openings g are so arranged that when the rod moves to the right the ends of the strippers rise out of the path of the teeth or the material carried thereby; but when the rod returns in the opposite direction they normally fall into the position shown in Fig. 2 and strip the cotton or other material from the teeth.

Such being the general construction and arrangement of parts their operation will be largely understood. The machine being put in operation, cotton or other material is delivered to the hopper and the flails being rotated their ends come against the supply of cotton and strip it off from the bottom of the

supply, the slide C being properly adjusted to aid in this operation and the cotton, which forms a sort of roll or layer, carried by the flails is pressed against the saw-teeth of the rod, which is reciprocated so that the teeth come under the flails and move away from them to their outermost position, as shown in Fig. 2. These saw-teeth strip the cotton or other material from the flails, and thus take what may be called a "proper load" and convey it through the passage-way leading to the tube and into the same. As the rod moves outward the strippers g' , as before intimated, move into their inoperative positions, allowing the cotton or other material to pass into the tube; but as soon as the rod commences its return movement the strippers assume the positions shown in Fig. 2 and clean the cotton off from the teeth and prevent it from moving back into the hopper, where the rod moves so that its teeth receive a fresh supply of cotton. The purpose and object of the double row of teeth and making one row longer than the other will be now apparent. Supposing the rod reciprocates through a given stroke—for instance, fifteen inches, more or less—as it moves forward with its first load of cotton on the teeth the cotton is brought under the strippers and as the rod reciprocates the cotton is stripped therefrom and the extended portion of the row of teeth f^2 comes under the strippers and engages the material held thereby. On the next reciprocation a fresh load of cotton is passed under the strippers and the first load, which was held thereby, is carried forward by the extended portion of the teeth f^2 . On the next reciprocation another load of cotton is carried to the strippers and there delivered. The former load is carried forward by the extended portion of the teeth f^2 and the first load is now forced forward, so that it is delivered in front of the end of the rod, and a continuation of the reciprocations of the rod carries out this operation, the load of cotton or other material in front of the rod being delivered into the collar or other article mounted on the tube and securely pressed or packed therein. It will thus be seen that the operations are continuous, the flails taking a new quantity of cotton from the supply delivered to the hopper and delivering the same to the teeth of the reciprocating rod, and this load is carried forward step by step until it is finally delivered into the article for which it was intended. One advantage of setting the teeth on opposite sides of the rod in a staggered position is that the load is more evenly distributed over the teeth than if the teeth were opposite each other on opposite sides of the rod. When this is the case, the two teeth opposite each other are apt to take too heavy a load and it is apt to collect in and choke the tube; but when the teeth are staggered, as shown, each tooth takes its proper load and carries it forward, and it distributes itself over the face of the rod in such a manner that choking does

not occur. The shaft D' being adjustable, the flails can also be adjusted so as to deliver the desired amount of cotton over the stuffing-rod, and the proper quantity will then be caught by the teeth and carried into the tube. Thus the flails revolve continuously, receiving and carrying the cotton or other material, and the rod reciprocates, taking its load therefrom and delivering it to the tube and into the article to be stuffed.

In utilizing some materials for stuffing there is more or less dirt in the material, and if there is too much friction the parts are liable to become heated and even set the cotton afire; but by the use of the friction-wheel this excessive friction is avoided and the machine operates with greater ease and without danger of fire.

Having thus described my invention and illustrated the same with sufficient clearness to enable those skilled in the art to make and use the same, without limiting myself to the precise construction shown, what I claim is—

1. In a machine for stuffing collars, the combination with a hopper, of means for distributing the material in the hopper, a tube connected with the hopper, and a rod reciprocating through the hopper and tube, said rod having two rows of teeth arranged on opposite sides, the teeth in one row being staggered in relation to the teeth of the other row, substantially as described.

2. In a machine for stuffing collars, the combination with a hopper, of means for distributing the material in the hopper, a tube connected with the hopper, and a rod reciprocating through the hopper and tube, said rod having two rows of teeth, one row being longer than the other, substantially as described.

3. In a machine for stuffing collars, the combination with a hopper, of means for distributing the material in the hopper, a tube connected with the hopper, and a rod reciprocating through the hopper and tube, said rod having an upper flattened surface, two sets of teeth arranged on opposite sides of the flattened surface, and the rod having a flattened portion on each end beyond the teeth and enlarged at the packing end, substantially as described.

4. In a machine for stuffing collars, the com-

bination with a hopper and means for distributing the material, of a tube connected with the hopper, a block interposed between the tube and hopper, pivoted strippers mounted in said block, and a rod reciprocating in the tube and hopper and beneath the strippers, substantially as described.

5. In a machine for stuffing collars, the combination with a hopper and means for distributing the material, of a tube connected with the hopper, strippers interposed between the tube and hopper, and a rod reciprocating in the tube and hopper and beneath the strippers the rod having two sets of teeth and the strippers being pivoted and projecting between the sets of teeth on the rod, substantially as described.

6. In a machine for stuffing collars, the combination with a hopper, of a shaft adjustably mounted in the hopper, flails mounted on the shaft, a tube connected to the hopper the longitudinal axis of which is parallel to the shaft carrying the flails, and a rod having teeth arranged to reciprocate beneath the flails and in the tube, substantially as described.

7. In a machine for stuffing collars, the combination with a hopper, of a slide, a shaft mounted in the hopper, flails mounted on the shaft, a tube connected to the hopper the longitudinal axis of which is parallel to the axis of the flail-shaft, strippers interposed between the tube and the hopper, and a reciprocating rod having teeth arranged to move under the flails and strippers and in the tube, substantially as described.

8. In a machine for stuffing collars, the combination with a hopper, of a shaft, flails mounted on the shaft, a tube connected to the hopper, a block interposed between the hopper and tube, pivoted strippers mounted in the block, and a reciprocating rod having two rows of teeth and arranged to reciprocate under the flails and strippers and in the tube, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTIS JONES.

Witnesses:

L. L. HUTCHINSON,
G. D. POLLOCK.