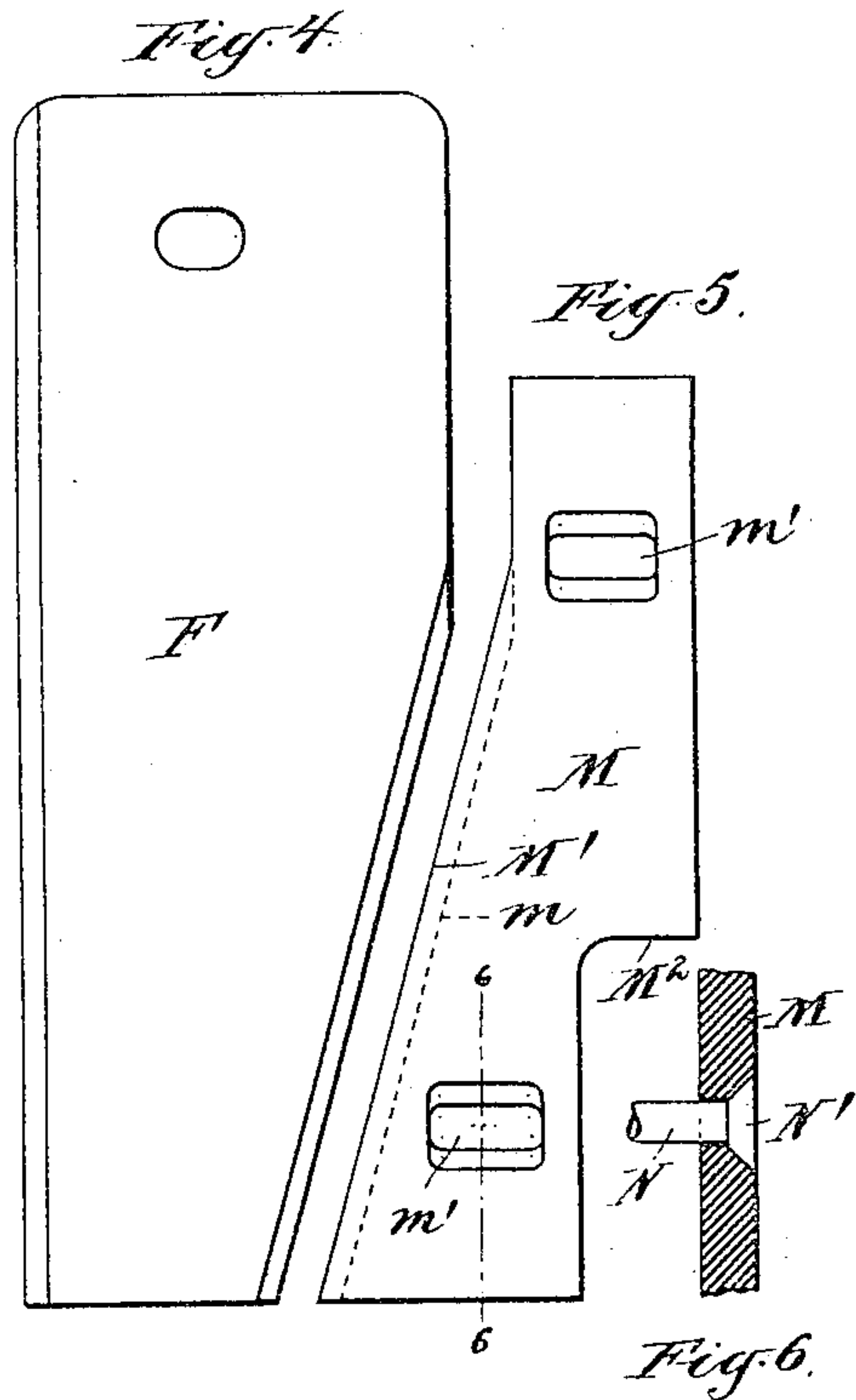
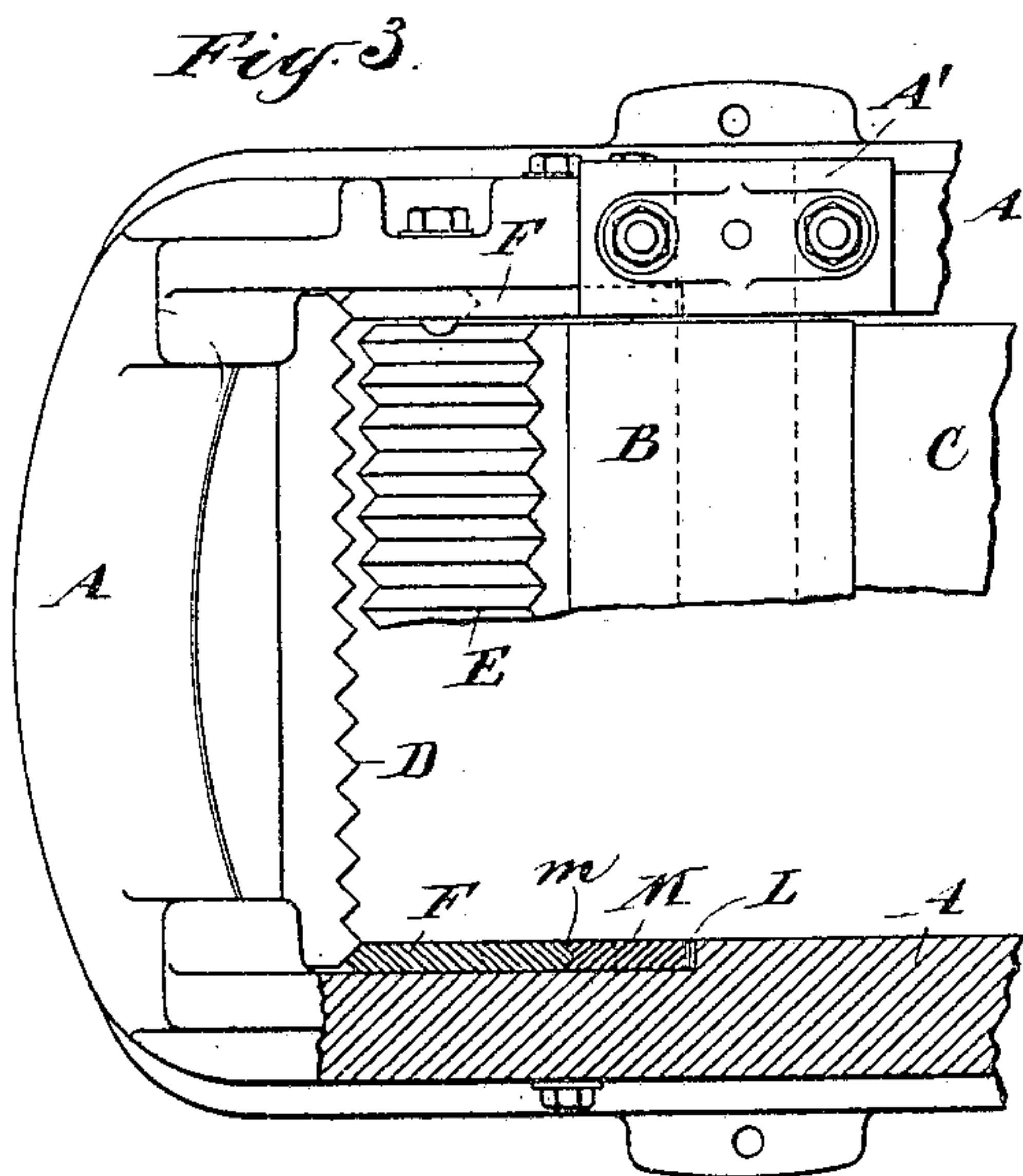
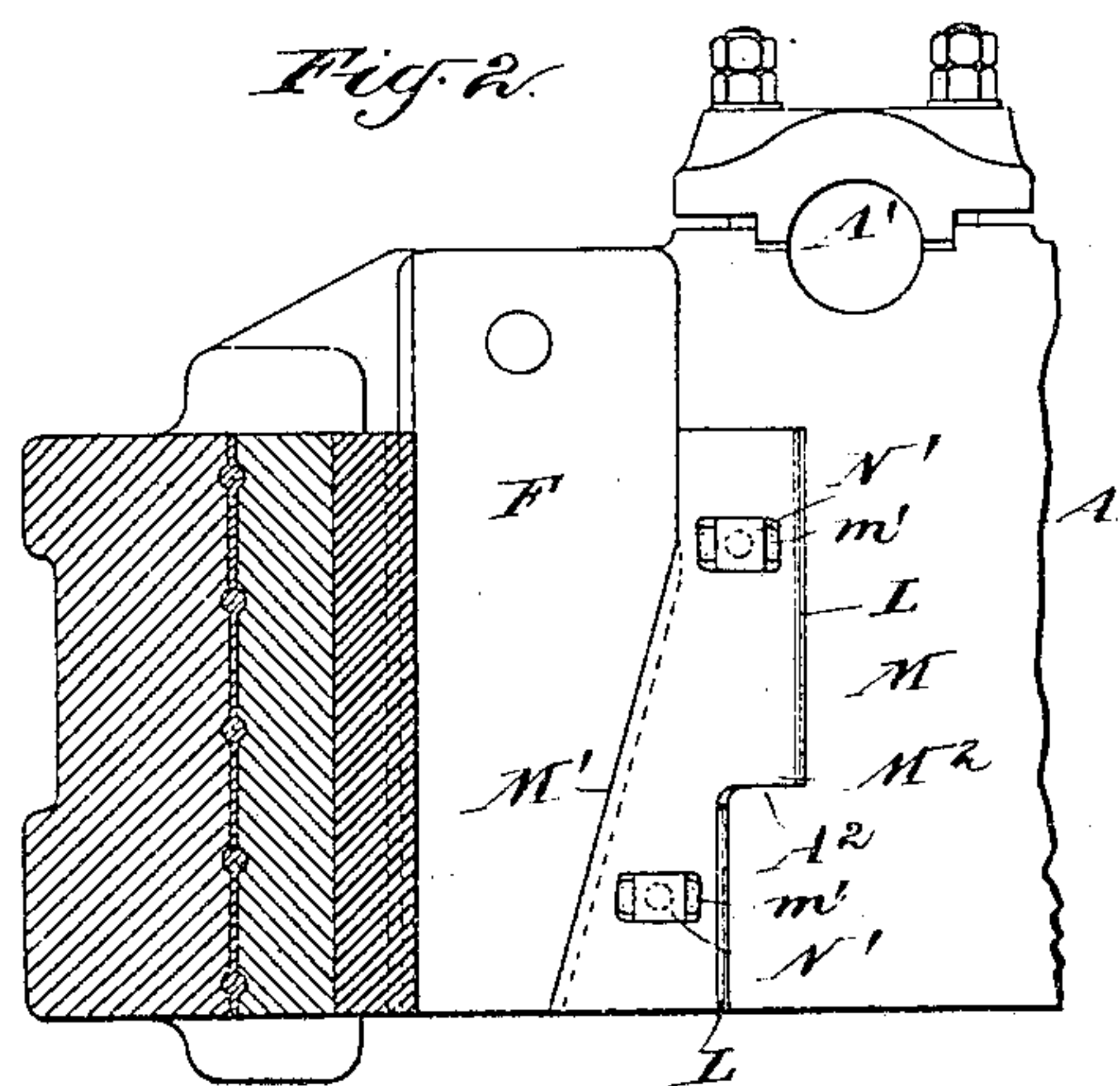
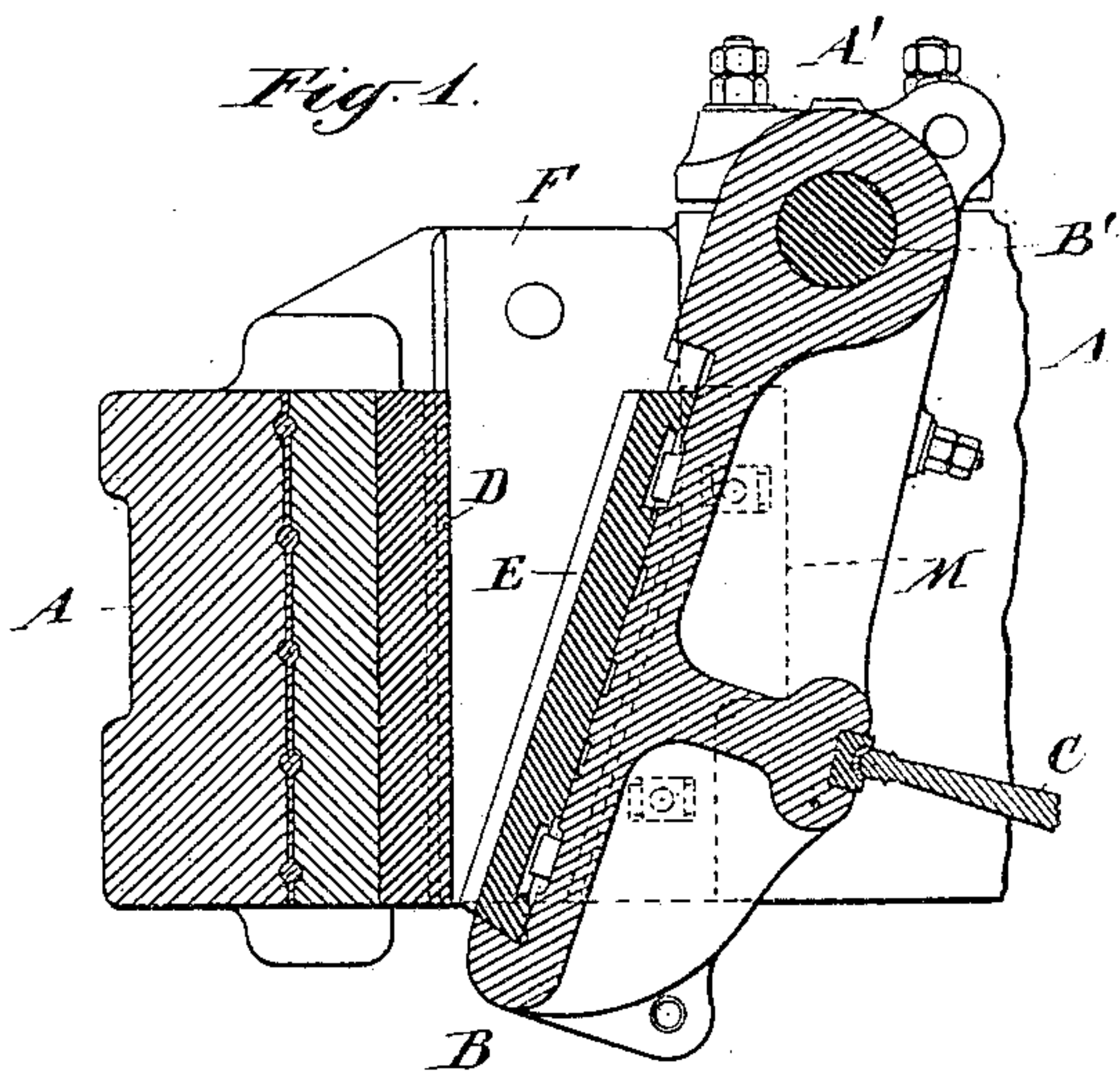


No. 787,322.

PATENTED APR. 11, 1905.

E. C. BACON.  
ROCK CRUSHER.

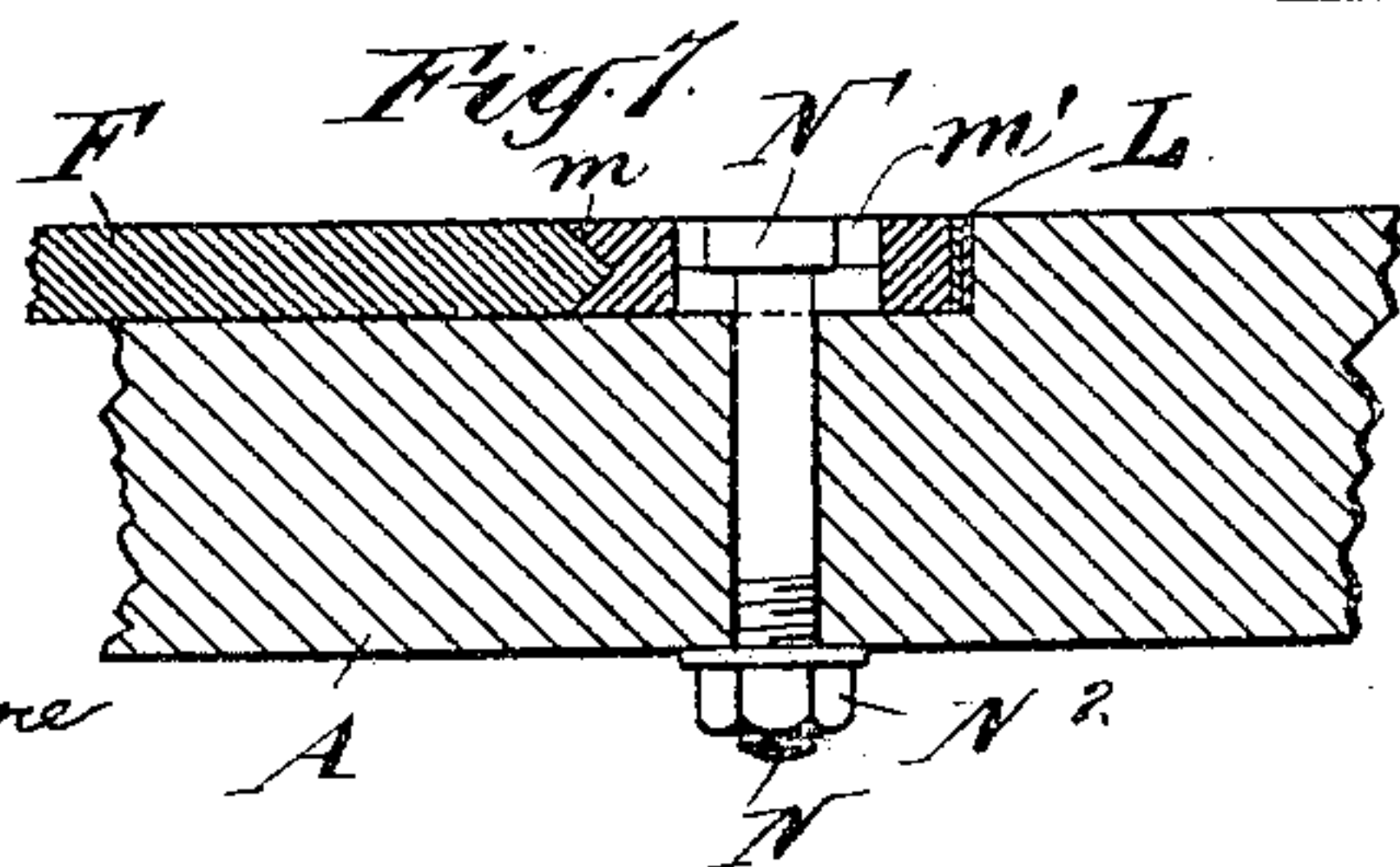
APPLICATION FILED MAR. 23, 1904.



Witnesses:

Stanley H. Greene

Samuel F. Macfarlane



Inventor:  
E. C. Bacon,  
by his attorney,  
Charles R. Searle.



# UNITED STATES PATENT OFFICE.

EARLE C. BACON, OF NEW YORK, N. Y.

## ROCK-CRUSHER.

SPECIFICATION forming part of Letters Patent No. 787,322, dated April 11, 1905.

Application filed March 23, 1904, Serial No. 199,547.

*To all whom it may concern:*

Be it known that I, EARLE C. BACON, a citizen of the United States, residing in the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Rock-Crushers, of which the following is a specification.

The invention relates more particularly to crushers of swing-jaw type, in which the material is crushed between a fixed and a movable jaw, the latter swinging between cheek-plates or side pieces; and the object of the invention is to provide means for supporting the cheek-plates, which means also serve as wearing-plates or auxiliary cheek-pieces in protecting the inner surfaces of the crusher-frame in the vicinity of the jaw-opening from the abrading effect of the crushing operation.

The invention consists in certain novel features and details of construction by which the above objects are attained, to be hereinafter described.

The accompanying drawings form a part of this specification and show a preferred form of the invention.

Figure 1 is a vertical longitudinal section through the forward portion of a swing-jaw crusher, showing the fixed and movable jaws and a portion of the frame, the location of the auxiliary cheek being indicated in dotted lines. Fig. 2 is a similar view with the swing-jaw removed to show the auxiliary cheek and its relation to the main cheek-plate. Fig. 3 is a plan view, partly in horizontal section, corresponding to Fig. 1. The remaining figures are on a larger scale and show portions in detail. Fig. 4 is a face view of one of the cheek-plates, and Fig. 5 is a similar view of the corresponding auxiliary cheek-piece. Fig. 6 is a section through a portion of one of the auxiliary cheeks, the section being taken on the line 66 in Fig. 5 and showing a portion of one of the holding-bolts. Fig. 7 is a horizontal section through one of the auxiliary cheeks and a portion of the frame and adjacent main cheek-plate, showing one of the holding-bolts in place.

Similar letters of reference indicate the same parts in all the figures.

A is the frame of the crusher, B the movable jaw, mounted on a shaft B', supported in bearings A' on the frame and caused to move toward and from the fixed jaw by any suitable means, as an eccentric, (not represented,) actuating a pair of toggles, a portion of one of which (marked C) is shown, D the fixed-jaw plate, and E the swing-jaw plate, all of any ordinary or approved construction. The frame is recessed on each side of the swing-jaw to receive the cheek-plates F F, of chilled iron or steel, serving the usual function of protecting this portion of the frame and holding the fixed-jaw plate in position. The forward edge of each cheek-plate is straight and of angular or ridged section to match to the bevel formed by the last corrugation on each side of the fixed-jaw plate D, and the upper portion of the rear edge is parallel with the front edge but plane, while the lower rear edge is of angular section or ridged and inclined toward the front. In the usual construction the inclined edge matches to and is received in a corresponding V-groove formed in the inclined rear wall of the recess, and the cheek-plate is held and holds the fixed-jaw plate by being forced, after the manner of a wedge, into the similarly-formed space.

The life of a cheek-plate depends on the character of the work performed by the crusher, but is comparatively short, and the substitution of new cheek-plates is frequently required. In case the new cheek-plate is of the same shape and dimensions as the old the substitution may be easily made; but frequently the ridge on the rear edge does not match exactly to the V-groove and much labor is involved in chipping away the groove to permit the proper insertion, the labor being increased by the narrow space inside the frame, within which the operator must stand during the chipping operation. After several such operations the groove and recess are likely to be much deformed. Another serious evil resulting from long use is the wearing away of the frame in the vicinity of the groove by the abrasive action of the crushed material. When this occurs, it becomes necessary to cut away the interior of the frame and increase the area of the recess sufficiently to include



the worn portion and then to insert specially-formed cheek-plates shaped to match to the altered recess. My improvement is designed to remedy the above objectionable features; 5 and it consists in continuing the lower part of the recesses in the frame rearward and placing in each an auxiliary cheek or wearing piece M, having the front inclined, as at M', to correspond to the cheek-plate and provided 15 with a V-groove *m* to receive the angular rear edge of the cheek-plate.

The auxiliary cheek is preferably of the form shown in the drawings, having the rear edge plane except for an offset or shoulder 15 M<sup>2</sup>, matching a corresponding shoulder A<sup>2</sup> in the outline of the recess and serving to support the weight of the piece. This shape also reduces the weight of the piece by lessening the width of its lower portion, which need be 20 only of sufficient width to protect the frame along the line of abrasion, and prevents a downward movement while the cheek-plate is being driven to place. Transverse slots *m' m'* are provided in the auxiliary cheek-pieces, having 25 inclined sides analogous to the usual countersink, in which are received bolts N N, having rectangular heads N' N', shaped to lie flush with the interior surface of the piece and beveled on the under face to match the slots and 30 extending through holes drilled in the frame to receive them. The bolts are held by nuts N<sup>2</sup> N<sup>2</sup>. Thus arranged the auxiliary cheek-pieces may be adjusted to accommodate the main cheek-plates and be maintained in the 35 desired position by the bolts N alone or with the aid of shims L between the rear edges and rear walls of the recess.

The auxiliary cheeks when worn by abrasion may be easily removed and new ones 40 substituted, and any work required in the V-grooves may be conveniently performed by simply removing the pieces from the frame. The adjustable feature permits the employment of cheek-plates, differing slightly from 45 the standard dimensions without changing the recesses.

The invention prolongs the useful period of the crusher, permits necessary repairs to be easily and quickly made, and adds but lit-

tle to the original cost of the machine without increasing its weight or bulk. 50

Modifications may be made in the forms and proportions of the auxiliary cheek-pieces as conditions may require in adapting the invention to different types of crushers. The 55 offset in the rear edge may be omitted and the adjustable features discarded, depending upon simple bolts or other fastening means for holding the auxiliary cheeks in place, as will be readily understood. 60

I claim—

1. An auxiliary cheek-piece having a shoulder, in combination with a crusher-frame recessed to receive said cheek-piece and support it by said shoulder, and with a fixed jaw, movable jaw, and cheek-plates, the latter supported and held in place by said cheek-pieces and fixed jaw, and means for adjusting said cheek-piece directly laterally toward and from its adjacent cheek-plate. 65 70

2. In a crusher having a fixed jaw, movable jaw, and cheek-plate, an auxiliary cheek-piece having a shoulder on its rear edge and transverse slots in different vertical planes with beveled sides, in combination with the crusher-frame having a recess matching to and receiving said cheek-piece, and bolts extending through said slots and frame, and having beveled heads matching said slots for direct lateral adjustment of the auxiliary cheek-piece. 75 80

3. In a crusher, a fixed jaw, a movable jaw, the frame having a recess in its inner face with shoulder in the outline of the recess, a cheek-plate, an auxiliary cheek-piece seated in said recess and having a shoulder to match 85 the first-mentioned shoulder whereby the auxiliary cheek-piece is held against vertical movement, and means engaging the frame and auxiliary cheek-piece for direct adjustment thereof horizontally toward and from the 90 cheek-plate.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

EARLE C. BACON.

Witnesses:

CHAS. J. MORTON,  
STANLEY K. GREENE.