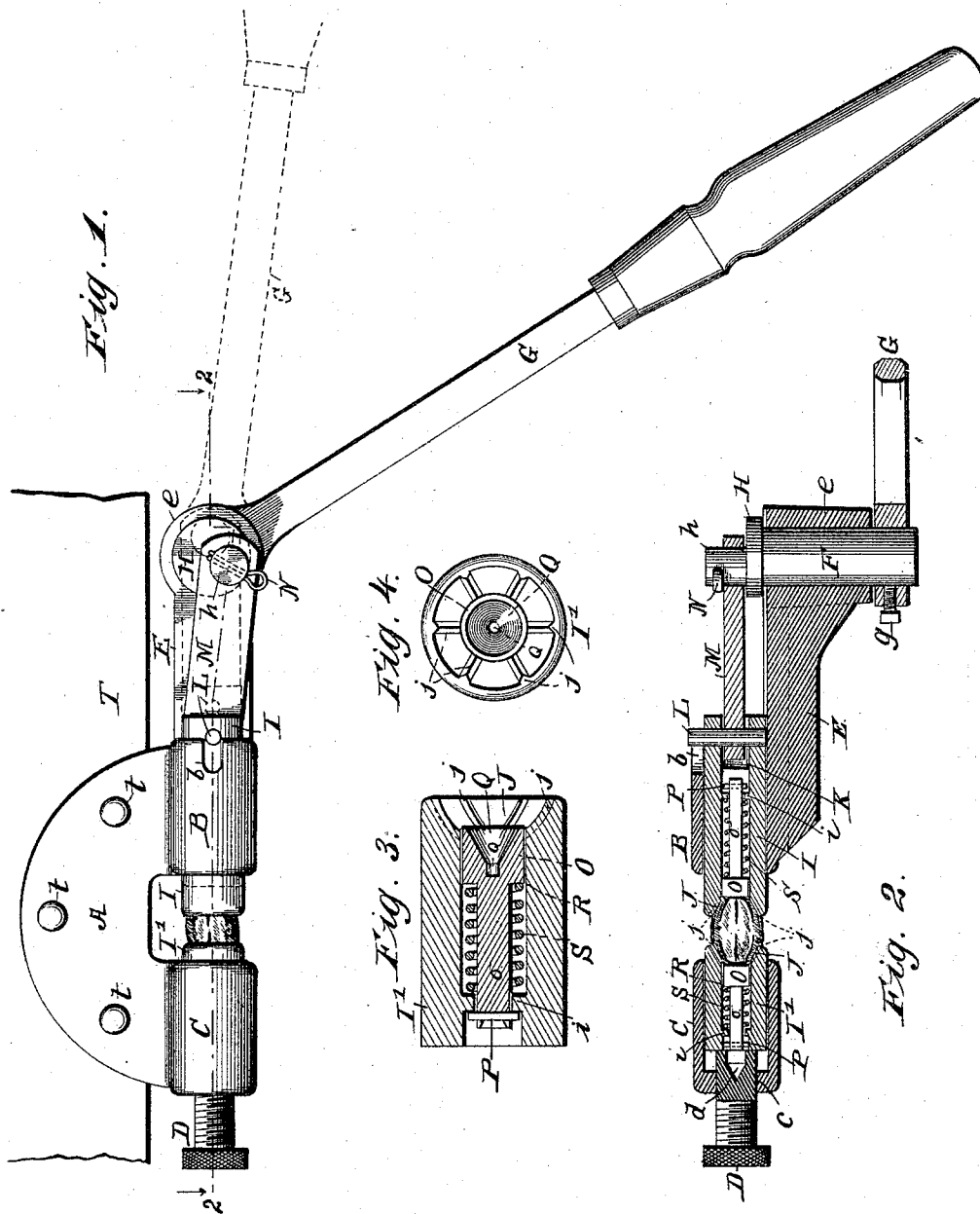


(No Model.)

G. L. NORTH.
NUT CRACKING MACHINE.

No. 537,477.

Patented Apr. 16, 1895.



Witnesses:

F. G. Fischer
[Signature]

Inventor:

George L. North

By *[Signature]*
Attys.

UNITED STATES PATENT OFFICE.

GEORGE L. NORTH, OF KANSAS CITY, MISSOURI.

NUT-CRACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 537,477, dated April 16, 1895.

Application filed January 19, 1895. Serial No. 535,576. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. NORTH, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Nut-Cracking Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to nut-cracking machines, and my object is to produce a machine of this character whereby nuts may be cracked easily and expeditiously, the shell being broken without injury to the meat, and whereby each nut will be expelled automatically from the jaws or dies by and between which it is crushed, that the insertion of another may take place immediately, therefore facilitating the operation of preparing nuts in a cracked state for the market.

With this object in view, the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1. is a plan view of a nut-cracking machine embodying my invention. Fig. 2. is a vertical longitudinal section of the same, taken on the line 2—2 of Fig. 1. Fig. 3. is a vertical longitudinal section enlarged of one of the jaws or dies, and Fig. 4. is an end view of the same.

In the said drawings, A designates a semi-circular plate, and projecting from and formed integral with the same and in longitudinal alignment with each other, are the tubular bosses or sleeves B and C.

The boss or sleeve B is provided at its outer end with a longitudinal slot or notch *b*, and the boss or sleeve C, at its outer end, is provided with a head *c*, having an opening through which the adjusting screw D operatively projects. The inner end of said screw D is formed with a recess or cavity *d*.

An arm E, forming an integral part of the boss or sleeve B, projects longitudinally beyond the outer end of the same for a suitable distance, and terminates in a hub *e*, which is disposed preferably at right-angles to the plane of the plate A. A shaft F, is journaled

in said hub, and mounted upon its lower end is a handle G, held in place by a set-screw *g*. The said shaft F at the opposite end is cranked, said crank comprising the disk head H, and the pin *h*, projecting vertically therefrom; said pin *h* being out of axial alignment with the shaft F.

A jaw or die I is of the proper size and form and fits snugly within the bore or passage of the boss or sleeve B. Said jaw or die is tubular, and its passage is intercepted at a suitable point by the annular flange *i*. Said jaw or die, at one end, is formed with a flaring mouth J, and is provided thereat with the inwardly projecting and radially arranged knives or blades *j*, which preferably in depth corresponds to the thickness of the shell of the nut to be cracked. At its opposite end it is bifurcated as at K, and extending vertically through said bifurcated end is a pin L, which is longitudinally aligned with the notch *b*, hereinbefore referred to. A pitman M is pivotally mounted at one end upon the pin L in the bifurcated end of said jaw or die, and at its opposite end upon the pin H, and it is retained thereon by the cotter N. The said jaw or die is formed with a plunger, consisting of the head O, fitting snugly within the passage of the said jaw or die, and the longitudinally extending stem *o*, which projects beyond the annular flange *i*, and is provided with a pin P. The head O of said plunger is formed with a conical cavity or recess Q, which terminates in a small offsetting cavity *q*. At the junction of the head O and the stem *o* of the said plunger, a shoulder R is formed, and bearing against said shoulder and against the opposing face of the flange *i*, and spirally encircling said stem *o*, is the expansion-spring S, which tends to advance said plunger and hold the stop-pin P against the rear or outer side of the flange *i*, as shown clearly in Fig. 3.

The jaw or die I', which fits snugly in the boss or sleeve C, is of precisely the same construction as the jaw or die I, except that it may be of diminished length, as shown, and is not provided with the bifurcated end. The rear or outer end of the said jaw or die I' abuts against the inner end of the screw D, by which it is adjusted longitudinally in said boss or sleeve to accommodate nuts of varying sizes, and the cavity *d* in the end of the set-

screw exceeds diametrically the stem *o*, of the plunger, for an object to be hereinafter explained. The flaring mouth *J* of said jaws or dies may in cross-section be either conical, as shown in Fig. 2, or segmental, as shown in Fig. 3, and dies constructed as shown having mouths of varying diameters, so as to accommodate all kinds of nuts may be employed.

The dies shown in the drawings are adapted for use particularly with pecans, the pointed ends of which may enter the flaring cavities in the opposing ends of the plungers, that their extreme points may enter possibly the off-setting cavities *q*, so that the end will not be crushed by end-pressure before the knives or blades have an opportunity to split the shell. It is manifest that a nut of any kind small enough to enter the opposing mouths of said dies may be crushed without the operation being interfered with in the slightest degree by the peculiar construction or cavity formation of said plungers.

In the practical operation of the machine, the handle *G* is grasped at the position shown in dotted lines with one hand, and with the other the nut is inserted end-wise into the mouth of the jaw or die *I'*. The handle *G* is then brought quickly to the position shown in dotted lines, and through the medium of its crank end and the pitman *M*, causes the jaw or die *I* to approach and exert end-wise pressure upon the opposite end of the said nut. If the nut be pointed sufficiently to engage the heads *O* of the plungers, the pressure of the springs *S* will be overcome and said plungers moved outwardly until the knives or blades *j* of the jaws or dies come into contact with and split the shell of the nut. This operation in practice is instantaneous, and as the handle *G* is thrown back to the position shown in dotted lines the spring actuating the plunger of the jaw or die *I*, exerts its pressure against the end of the nut, so that it shall not wedge and remain in the mouth of the said jaw or die. At the same instant that the jaw or die *I* is retracted, the plunger of the jaw or die *I'* advances and expels the nut from the same, and it drops into a suitable receptacle (not shown) placed to receive it. It is manifest that these spring-actuated plungers are positive in action, and can always be relied on to expel the nut immediately the movable jaw or die recedes.

It will be apparent by making the reciprocating jaw or die *I* longer, that the boss or sleeve *B* need not be notched as shown at *b*, as said notch does not necessarily form a guide for the pin *L*, which projects above the jaw or die simply for convenience in removing the said jaws or dies from the casting. As constructed, the spaces between the opposing ends of the bosses or sleeves *B* and *C* is less than the length of the jaw or die *I'*. Therefore it is evident that to remove said jaws or dies from position, the pin *L* must first be removed and the pitman *M* swung out of the way to permit said jaws or dies to be slid in the same di-

rection until they emerge successively from the rear or outer end of the boss or sleeve *B*. To replace them the jaw or die *I'* is first inserted in the outer end of the boss or sleeve *B* and slid to its operative position in the boss or sleeve *C*. The jaw or die *I* is next inserted in the same manner and operatively connected to the link *M* by means of the pin *L*. The adjusting-screw *D* is formed with the cavity *d* at its inner end to receive the rear end of the stem *o* of the plunger of the jaw or die *I'*, as it is forced rearward a greater or less distance when pressure is brought to bear upon a more or less pointed nut, as will be understood. It is obvious that by forming the said jaw or die with a greater distance between its rear end and the internal flange *i*, sufficient space for the operation of the plunger may be provided without necessitating a cavity in the end of said adjusting-screw *D*.

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

1. In a nut-cracking machine, a jaw or die formed with a cavity or mouth at one end and provided with radially-arranged blades or knives projecting from the wall of said cavity or mouth, and a spring-actuated plunger within said jaw or die, provided with a head protruding into the said mouth or cavity, substantially as set forth.

2. In a nut-cracking machine, a jaw or die formed with a cavity or mouth in one end and provided with radially arranged blades or knives projecting from the wall of the said cavity, and a spring-actuated plunger within said jaw or die formed at its front end with a cavity communicating with the cavity or mouth of the said jaw or die, substantially as set forth.

3. In a nut-cracking machine, a jaw or die formed at one end with a cavity or mouth and provided with a series of radially arranged knives or blades projecting inwardly from the wall of the said cavity or mouth and provided also near its opposite end with an inwardly projecting flange, and a plunger fitting within said jaw or die and comprising a head having communicating cavities in its face, and a stem which projects beyond the said flange, a pin extending through said stem outward of said flange, and a spring exerting its pressure against the opposite or front side of said flange and the head of said plunger, substantially as set forth.

4. In a nut-cracking machine, the combination with a casting provided with a pair of longitudinally aligned bosses or sleeves, of a jaw or die formed at its front end with a mouth or cavity provided with cutting knives or blades, an adjusting-screw carried by said boss or sleeve and engaging the rear or outer end of said jaw or die, and a similar jaw or die fitting in the other boss or sleeve, and means to reciprocate said last-mentioned jaw or die, substantially as set forth.

5. In a nut-cracking machine, the combina-

tion with a casting provided with a pair of
longitudinally aligned bosses or sleeves, of a
jaw or die formed at its front end with a
mouth or cavity provided with cutting knives
5 or blades, an adjusting-screw carried by said
boss or sleeve and engaging the rear or outer
end of said jaw or die, and a similar jaw or
die fitting in the other boss or sleeve, a crank-
shaft journaled in said casting, a pitman con-
10 necting the same with said last-mentioned

jaw or die, and a handle carried by said crank-
shaft by which it is operated, substantially as
set forth.

In testimony whereof I affix my signature
in the presence of two witnesses.

GEORGE L. NORTH.

Witnesses:

M. R. REMLEY,
G. Y. THORPE.