(No Model.)

C. McNELLIS.

CLUTCH FOR CARBON RODS.

No. 506,716. Patented Oct. 17, 1893.

Fig. 1

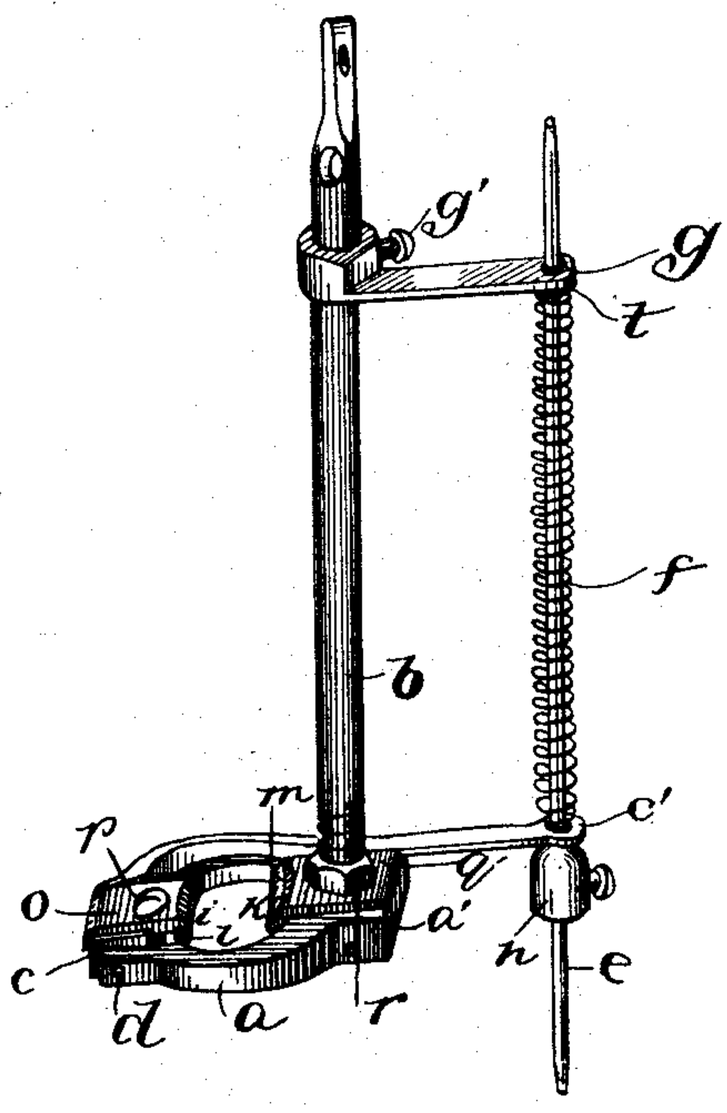
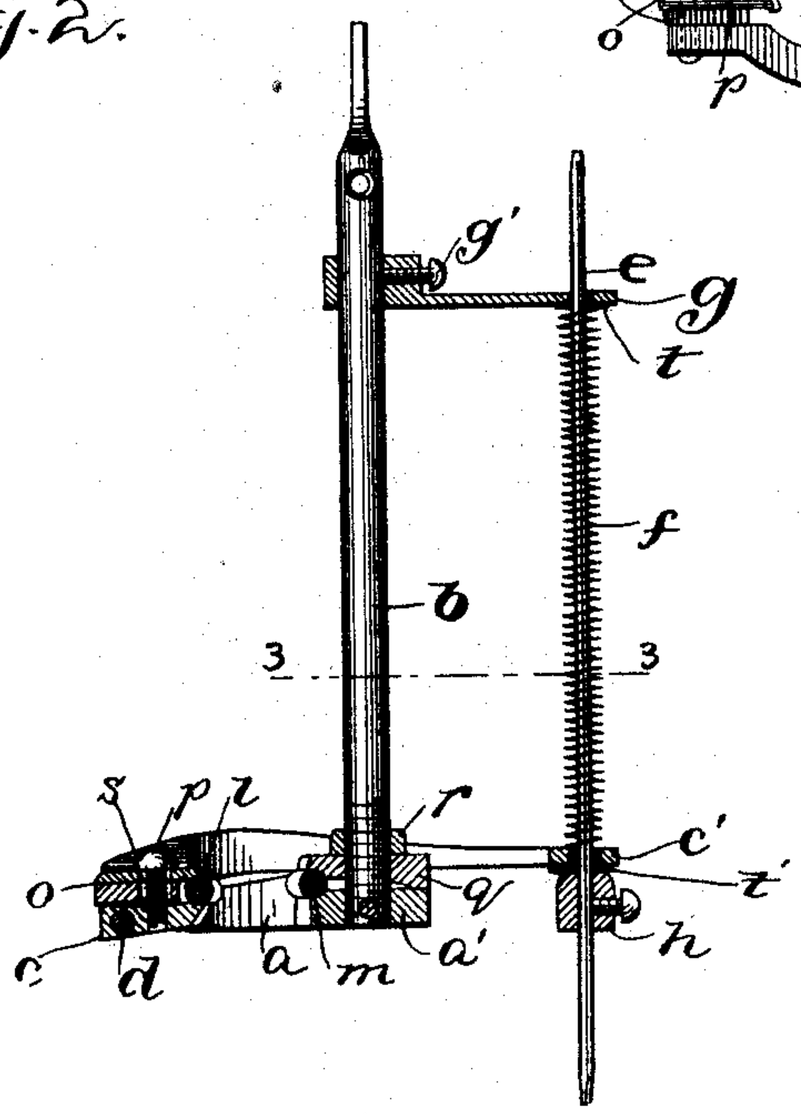


Fig. 2.



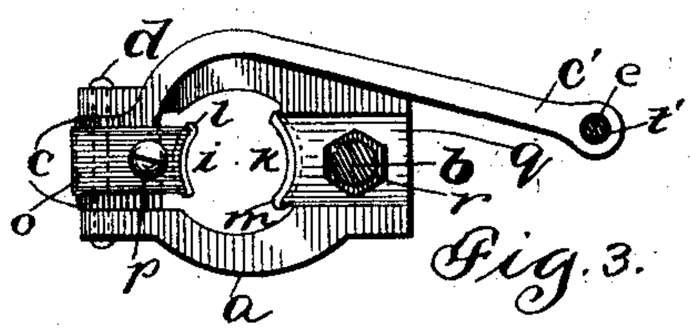


Fig. 3.

z( )m

Fig. 4.

Witnesses:
George L. Cragg.
W. Clyde Jones.

Inventor:
Charles McNellis:
By Barton & Brown
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES McNELLIS, OF CHICAGO, ILLINOIS.

CLUTCH FOR CARBON-RODS.

SPECIFICATION forming part of Letters Patent No. 506,716, dated October 17, 1893.

Application filed June 6, 1893. Serial No. 476,787. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MCNELLIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Clutches for Carbon-Rods, (Case No. 3,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to clutches, designed more particularly for use in connection with carbon rods of electric arc lamps.

Its prime object is to make the gripping portions of the clutch separate and removable, so that when worn out they may be replaced by new gripping portions, whereby expense is saved of replacing the entire clutch mechanism when its jaws or gripping portions are worn away by constant frictional engagement with the carbon rod.

My improved form of clutch mechanism also provides for the positive feed of the carbon rod, and also for its adjustment for different sizes of carbon rods.

Heretofore in clutch mechanisms gripping devices or jaws have been provided which were made integral with large portions of the clutch mechanism, thereby necessitating the removal of the entire clutch mechanism when such jaws or gripping portions became worn out.

My invention consists in the substitution for the gripping parts of the old forms of clutches, of pieces of metal, preferably heavy wire, which are bent in segments conforming to the circumference of the carbon rod, which may be clamped in place and removed at will.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view in perspective of a clutch embodying my invention. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a plan view thereof on line 3—3 of Fig. 2. Fig. 4 is a detail view showing the removable gripping portions isolated from the clutch mechanism.

Like parts are indicated by similar letters of reference in all the views.

It should be understood that my invention may be applied to any form of clutch mechanism. The form shown comprises the clamp body *a*, a standard *b*, a hinged toe *c* secured to the clamp body *a* by the pintle *d*, a guiding rod *e*, a coiled spring *f* about said rod *e* contained between extension *c'* of toe *c* and arm *g*, said arm being vertically adjustable on standard *b* to regulate the tension of spring *f*, a set screw *g'* being provided to secure such adjustment. An adjustable stop *h* is provided to limit the downward travel of extension *c'*.

When the clutch mechanism is in the position shown, the carbon rod is clamped. When the extension *c'* is raised through the medium of rod *e* by the motor mechanism of the lamp, the toe *c* is rocked, thereby increasing the distance between the jaw *i* carried by said toe *c* and jaw *k*, which is stationary, whereby the carbon rod is allowed to descend to feed its carbons. The portions of the jaws *i k* which are brought in contact with the carbon rod consist preferably of pieces of wire *l m* bent in the form of segments to conform to the contour of the carbon rod. Piece *l* is placed between the toe *c* and plate *o*, segmental recesses being provided in said toe *c* and plate *o* to receive said piece *l*. A clamp screw *p* is provided to tighten plate *o* and toe *c* about the piece *l*. Piece *m* is engaged between web *a'* of the clamp body *a* and the adjustable plate *q*, segmental recesses being provided in said web and plate to receive said piece *m*. Piece *m* is clamped between plate *q* and web *a'* by clamp nut *r*. A slot *s* is provided in clamp plate *o* to allow for the adjustment of the space between jaws *i k* for different sized carbon rods. Pieces *l* and *m* should present curved surfaces to the carbon rod, the form shown being preferable.

To prevent any of the current from traversing the coiled spring *f* whereby the resiliency of said spring may be impaired, I provide insulating bushings *t t'* upon arm *g* and extension *c'*.

I do not desire to limit myself to the form of pieces *l* and *m* shown, nor to the method of clamping them employed; but,

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

1. A clutch having a lever with an adjust-

able jaw, and a base with a fixed jaw opposed to said adjustable jaw, said jaws being provided with separate gripping parts which may be removed and replaced, substantially as described.

2. A clutch having a lever with an adjustable jaw, and a base with a fixed jaw opposed to said adjustable jaw, one or both of said jaws provided with a separate gripping part or parts which may be removed and replaced when worn out, substantially as described.

3. In a clutch, a clamp body *a* supported by a standard *b*, said clamp body having pivotally supported thereon a toe *c*, a gripping piece *l* removably clamped between a clamp plate *o* and toe *c*, and a gripping piece *m* removably clamped between clamp plate *q* and web *a'*, substantially as described.

In witness whereof I hereunto subscribe my name this 31st day of May, A. D. 1893.

CHARLES McNELLIS.

Witnesses:

CHARLES A. BROWN,

GEORGE L. CRAGG.