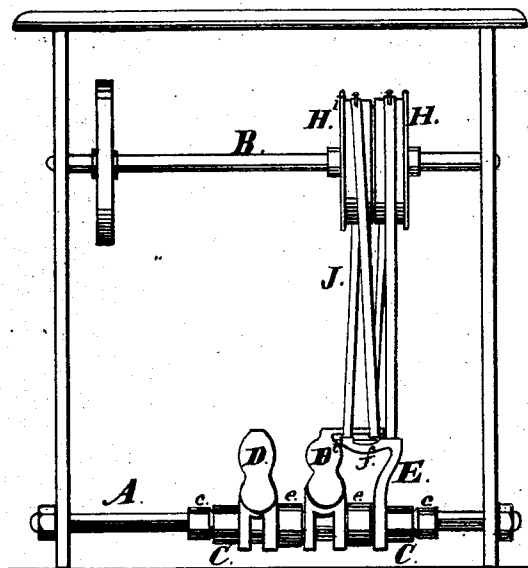


**N. & C. DUBRUL.**  
**Treadles for Sewing-Machines.**

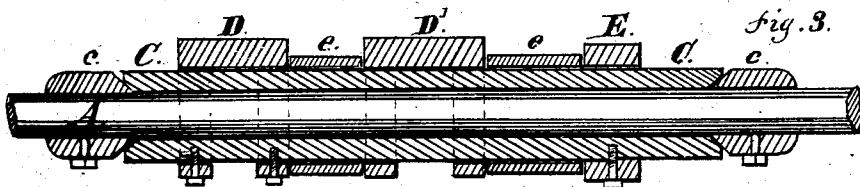
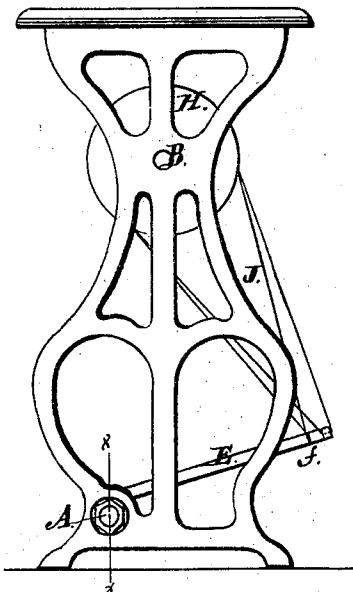
No. 146,994.

Patented Feb. 3, 1874.

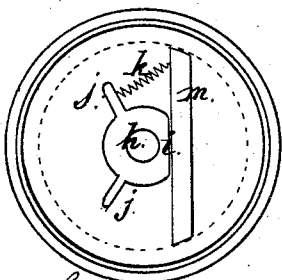
*Fig. 1.*



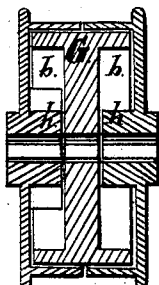
*Fig. 2.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

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*Atty.*

# UNITED STATES PATENT OFFICE.

NAPOLEON DUBRUL, OF CINCINNATI, OHIO, AND CYRIAC DUBRUL, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN TREADLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **146,991**, dated February 3, 1874; application filed July 15, 1873.

*To all whom it may concern:*

Be it known that we, NAPOLEON DUBRUL, of Cincinnati, Ohio, and CYRIAC DUBRUL, of Chicago, Illinois, have invented certain Improvements in Treadles, of which the following is a specification:

In the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of a stand or table—as, for instance, a sewing-machine stand—fitted with our improved treadle. Fig. 2 is an end elevation of same. Fig. 3 is a vertical section of the foot or rock shaft, enlarged from Fig. 2, taken on the line *xx* of said figure. Fig. 4 is a face view of one of the outside loose pulleys, showing the friction-ratchet. Fig. 5 is a central transverse vertical section through the entire set of loose and fast pulleys; the three latter figures being enlarged from Figs. 1 and 2.

Like letters of reference made use of in the several figures indicate like parts.

In the said drawings, A represents the treadle-shaft, and B the pulley-shaft. Upon this treadle-shaft A is placed a loose tube or sleeve, C, secured from slipping longitudinally by means of the collars *c c*, which are secured to the shaft by set-screws, or in some other way. Attached rigidly to this tube or sleeve C are the treadle D for the left foot, and the arm E, to which arm the ends of the belt or strap are fastened. The treadle D' for the right foot is placed loosely upon the sleeve, and moves or rocks upon it. The other ends of the belt or strap are fastened to this treadle D', as shown. This arrangement of treadle, sleeve, arm, &c., obviates the necessity of crossing the belt, and makes a strong, durable contrivance.

Short sleeves *c c* are slipped over the tube or sleeve C, between the treadles and arm, to keep them asunder. G is a pulley, which we term the "tight pulley," as it is rigidly fastened to the shaft B. This pulley G is made with a cavity or recess, *b*, at each side or face. Inclosing this tight pulley are two

loose half-pulleys, H H', having central hubs *h*, which extend into contact, or nearly so, with the face of the recesses of the tight pulley. These hubs *h* are both cut away at one side, as at *i*, forming a cam upon each hub. At the opposite side of said hubs ears or lugs *j* project, as shown clearly at Fig. 4. One lug is sufficient for the operation of the device, but we apply two, because the corner of the cam may become worn, in which case the spring *k*, which attaches one end of the pawl or bar *m* to one of these lugs, may be removed and transferred to the other lug, presenting a new corner of the cam for the pawl to wear against, it only being necessary to turn the entire pulley around upon the shaft, so that the ratchet device will operate in a proper direction. This cam *i*, when the loose pulley is revolved in one direction, takes against the side of the pawl or bar *m*, and forces it into contact with the sides of the pulley, so that the tight pulley and its shaft takes the revolution, while in going the other or reverse way the said pawl slides upon the said surface, and allows the loose pulleys to move without causing any motion of the tight pulley, as will be readily understood. The belt or band J is attached to the point right of the angle projection *f* of the arm E, passing from thence over one half, H', of the loose pulley; thence down to the point of the right-angled projection *d* of the arm D'; thence over the other half of the loose pulley, and down to the angle of the arm E, where it is connected. This arrangement of the belt gives the necessary alternating action of the belt upon the pulley, causing the downward pressure of the treadle to actuate in one direction alternately the two halves H H' of the loose pulley, producing a continuous rotation of the shaft B.

Having thus fully described our invention, that which we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the tight pulley G,

loose inclosing pulleys  $H H'$ , band or strap  $J$ , treadles  $D D' d$ , and arm  $E f$ , constructed and operating substantially as specified.

2. The combination of the shaft  $A$ , pipe or sleeve  $C$ , to which are attached rigidly the treadle  $D$  and arm  $E$ , and the treadle  $D'$ , fitted to revolve loosely upon the sleeve  $C$ , substantially as specified.

3. The two lugs  $j j$  upon the hub  $h$ , provided with the cam  $i$ , in combination with the pawl  $m$  and spring  $k$ , so that when one cor-

ner of the cam is worn the spring and pawl may be reversed, as specified.

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