E. VON MENGDEN.

Climbing Apparatus.

No. 213,715. Patented Mar. 25, 1879.

Fig. 1.

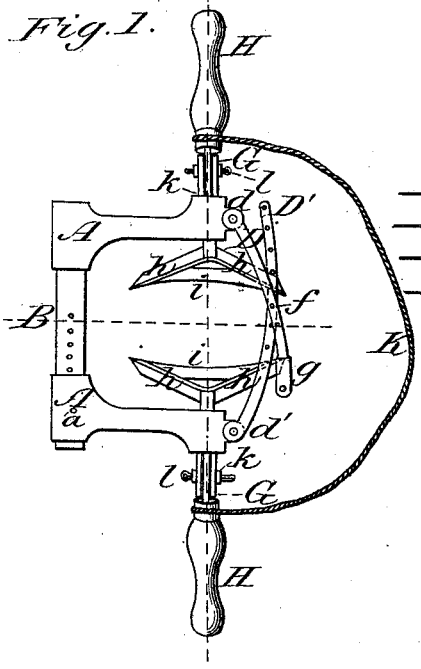


Fig. 5.

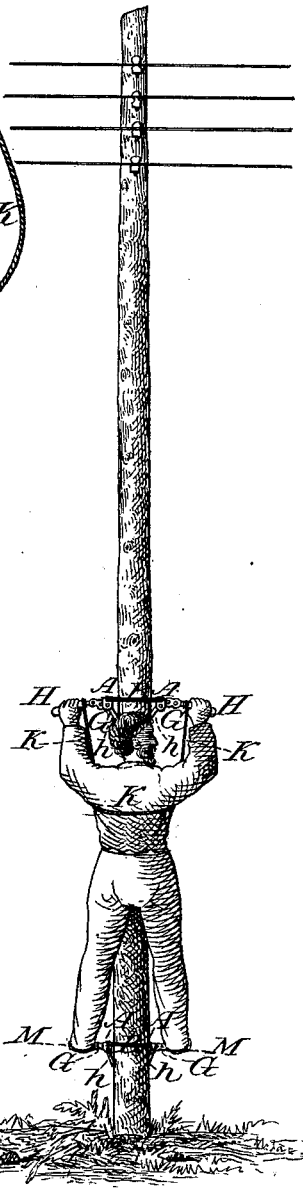


Fig. 2.

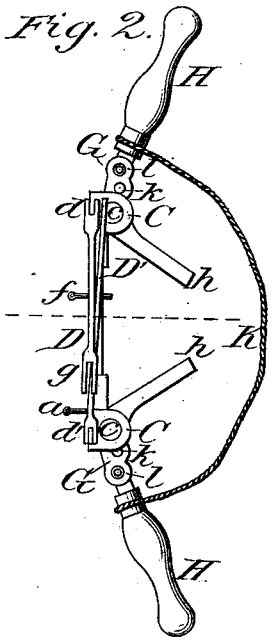


Fig. 3.

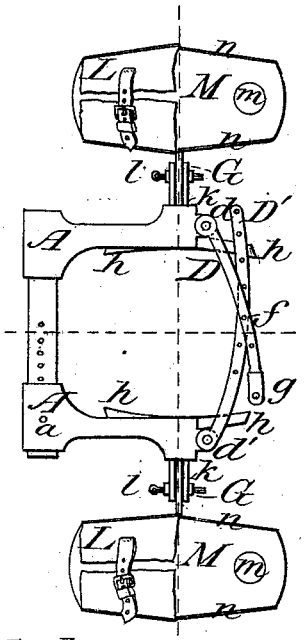
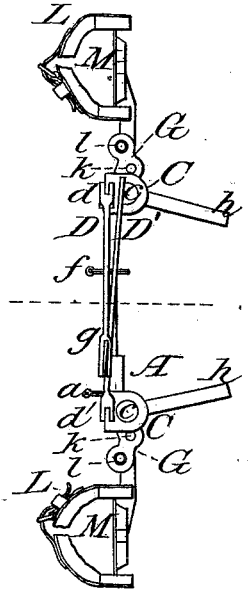


Fig. 4.



Attest:

Adolph Müller

Julius Haesen

Inventor:

Eduard von Mengden

per Henry E. Roeder

attorney

UNITED STATES PATENT OFFICE.

EDUARD VON MENGDEN, OF COLOGNE, PRUSSIA, GERMANY.

IMPROVEMENT IN CLIMBING APPARATUS.

Specification forming part of Letters Patent No. **213,715**, dated March 25, 1879; application filed December 17, 1878.

To all whom it may concern:

Be it known that I, EDUARD VON MENGDEN, of Cologne, Prussia, Germany, have invented a new and useful Climbing Apparatus, of which the following is a specification:

The invention consists of two frames, made to surround the pole or mast, constructed similar to each other, except that the one is provided with suitable handles to be griped by the hands, while the other is provided with suitable brackets and fastenings for the feet to rest upon and be secured thereto. These handles and brackets are connected with and operate circular clutches, which are made to work against the surface of the pole or mast to be climbed, and when acted upon by the weight of the body hold such frame firm in its position.

In the accompanying drawings, Figure I represents a top view of the frame provided with handles. Fig. II is a front view of the same. Fig. III represents a top view of the frame provided with brackets for the feet. Fig. IV is a front view of the same. Fig. V shows the application of the frames on a pole or mast ready for operation.

Similar letters represent similar parts in all the figures.

A A are two arms, connected together at one end by a rod or bar, B, securely fastened to one of said arms, and attached to the other arm by means of a key or bolt, *a*, to allow the arms A A to be adjusted nearer together or farther apart, to correspond with the diameter or thickness of the pole or mast to be climbed. To the other end, *d d'*, of these arms A A rods D D' are hinged. One of these rods, D', is provided with a number of holes, and the other rod, D, has a fork or jaw, *g*, at its end, between which the rod D' is made to work, and they are fastened together by means of a suitable pin or bolt, *f*.

The arms A A, sliding rod B, and hinged rods D D', when connected, form a frame capable of being enlarged or reduced in size, to correspond with the diameter of the pole or mast on which the apparatus is to be used.

Near the ends of the arms A, where the rods D D' are hinged, lugs C C are provided, at the under side of said arms, to which levers G are hinged, capable of turning on their joint-pins *c*. The inner ends of these levers G form clutches *h*, made circular, to embrace as much as possible of the surface of the pole or mast, and they are made rough or serrated at their circular surface *i*. To the outer ends of these levers G handles H H (shown in Figs. I and II) are attached, to be taken hold of by the hands, and in Figs. III and IV frames M, to fit the shape of the foot, are attached.

Side pieces *n* may be attached to the after part of these frames M, to confine the foot at the sides, and a suitable hole, *m*, may be made, to receive the heel of the boot.

At the forward part of the frame M a suitable leather band or strap, L, in connection with a suitable strap and buckle, is arranged, to enable the foot to be firmly secured and fastened to this foot-frame M.

To facilitate the packing of the apparatus, the projecting handles H and foot-frames M may be hinged to the levers, turning on the joint-pins *c* in the jaws C, as shown at *k*, and secured in their proper position when in use by means of a pin or key, *t*.

To the inner ends of the handles H, or to the levers G, provided with said handles, a cord or strap, K, is firmly attached, adapted to pass around the body of the operator, for security or protection.

The operation of the machine is as follows, and fully represented in Fig. V:

The frame provided with the foot-frames M is placed around the lower part of the pole or mast to be climbed, and said frame made of such size as to fit closely the pole or mast by means of the sliding rod B and the hinged connecting-rods or levers D and D', as above described. The other frame, provided with the handles H H, is then fitted around the pole or mast in the same manner as high up as the operator can conveniently reach. The feet of the operator are then fastened to the foot-frames M M by means of the leather bands or straps L, and the strap or band K on the upper frame is passed under the arms and around the back of the operator. The object of this strap or cord K is to prevent the operator from falling in case he should from any cause whatsoever loosen his hold from the handles H.

When the operator throws his whole weight upon the handles H, the clutches *h h* of this

upper frame will firmly gripe the pole or mast, and thus hold the upper frame in its position on the pole or mast. The drawing upward of his feet while hanging on the handles H H will loosen the clutches *h h* and the lower frame from the pole or mast, and enable the operator to move the lower frame higher up on the pole or mast, his feet being firmly attached to said lower frame, as above described. As soon as the operator brings his weight again upon the foot-frames M M of this lower frame the clutches *h h* of the same will gripe firmly the pole, and thereby securely fix the lower frame into that position to which the operator has moved it by the drawing of his feet upward, and by throwing his whole weight upon the foot-frames M M the lower frame will be firmly secured in position. The operator then moves the upper frame higher up on the pole or mast, attaches the same in that position by throwing again his weight on the handles H H, and the same operation will be repeated.

If from any cause whatsoever the operator should loose his hold on the handles H H, the strap or cord K will prevent his falling, and at the same time bring part of his weight upon the levers G or handles H, to which this cord or strap K is attached, and the upper frame will be held in its position by causing the clutches *h h* to gripe the pole.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a climbing apparatus, arms A A, connected through a sliding rod, B, at one end and hinged rods or levers D D′ at their other ends, in combination with levers G G, hinged to said arms A A, said levers being provided at their inner ends with clutch-pieces *h h*, and at their outer ends either with handles H H or with foot-frames M M and suitable straps L L, the whole being arranged in the manner and for the purpose substantially as set forth.

2. In a climbing apparatus, a frame consisting of arms A A, sliding connecting-rod B, and hinged connecting-rods D D′, with hinged levers G G, provided with clutch-pieces *h h* at their inner ends and handles H H at their outer ends, in combination with a similar frame having hinged levers G G, provided with clutch-pieces *h h* at their inner ends and foot frames M M, with suitable straps L L, at their outer ends, the whole being arranged to operate in the manner and for the purpose substantially as described.

3. In a climbing apparatus, a frame consisting of arms A A, sliding connecting-rod B, and hinged connecting-bars D D′, with hinged levers G G, provided with clutch-pieces *h h* at their inner ends and handles H H at their outer ends, in combination with a cord or band, K, attached either to said levers G G or to the handles H H, in the manner and for the purpose substantially as set forth and described.

EDUARD VON MENGDEN.

Witnesses:

ADOLPH MÜLLER,

JULIUS KAESEN.