

G. E. SOPER.  
STAND FOR GRINDING WHEELS.  
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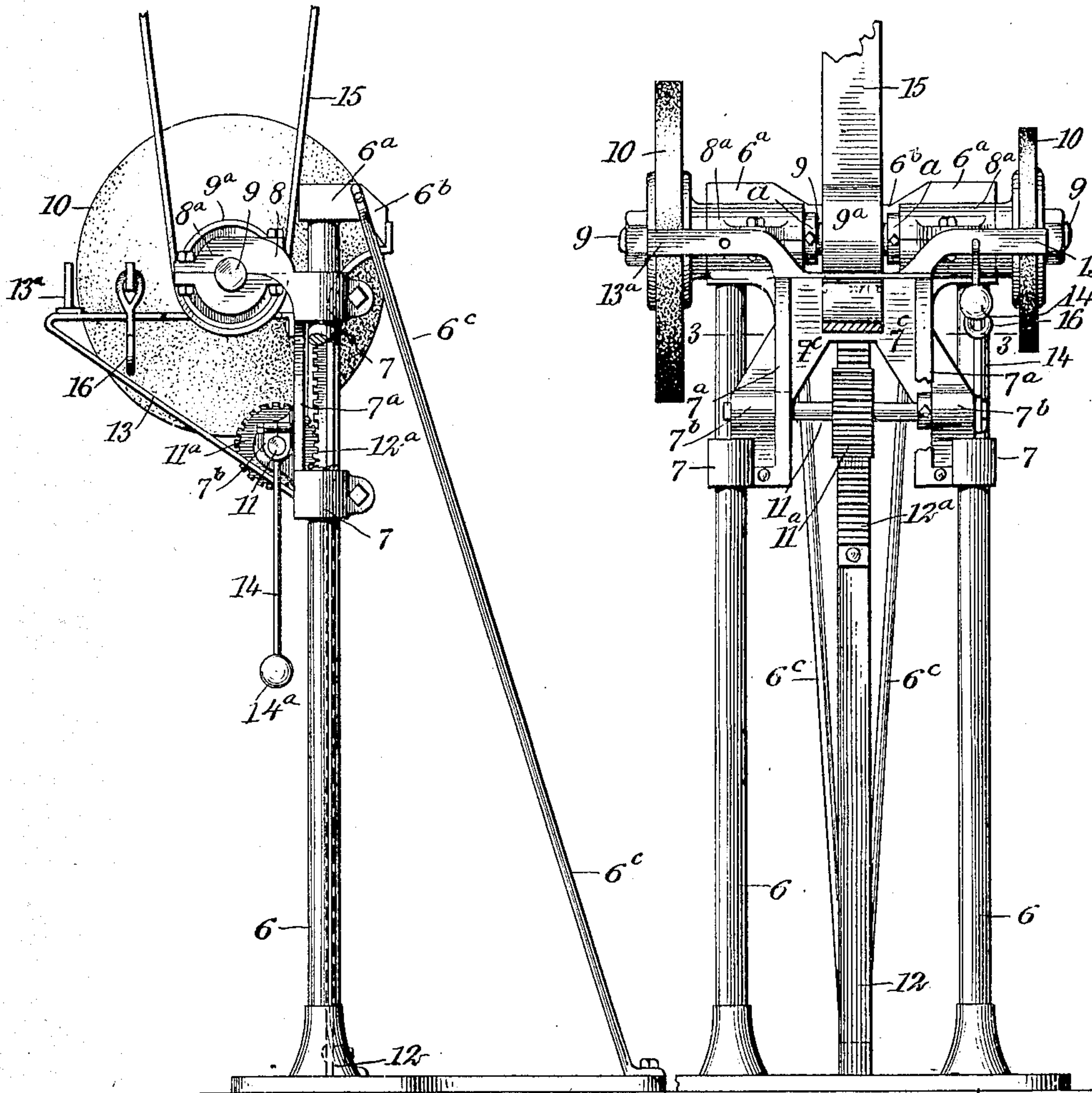


Fig. 1

Fig. 2

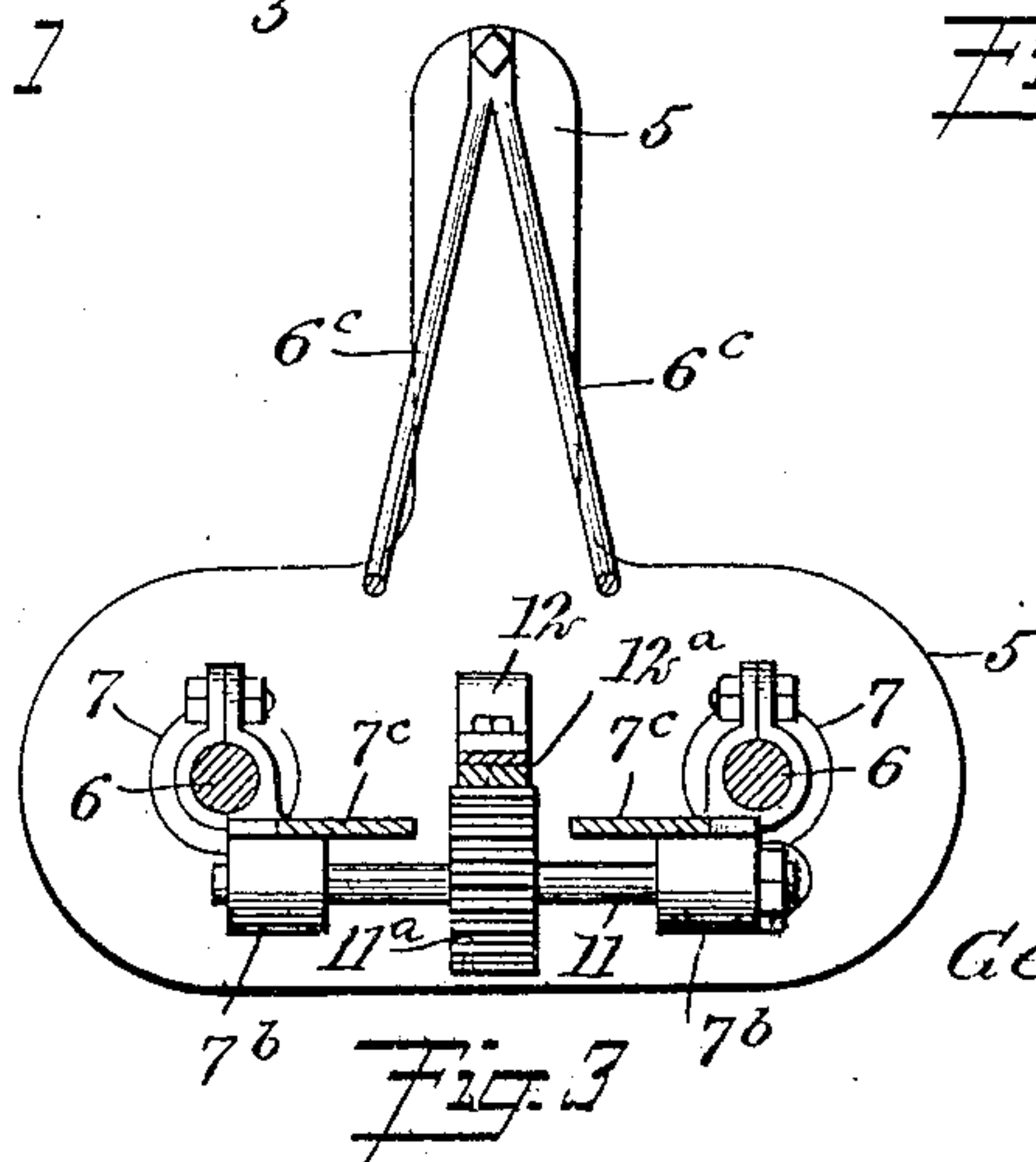


Fig. 3

WITNESSES  
E. G. Bromley,  
Wm. P. Patton

INVENTOR  
George Ellis Soper  
BY *Mum Co.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

GEORGE ELLIS SOPER, OF KANKAKEE, ILLINOIS.

## STAND FOR GRINDING-WHEELS.

No. 925,848.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed March 20, 1908. Serial No. 422,242.

*To all whom it may concern:*

Be it known that I, GEORGE ELLIS SOPER, a citizen of the United States, and a resident of Kankakee, in the county of Kankakee and State of Illinois, have invented a new and Improved Stand for Grinding-Wheels, of which the following is a full, clear, and exact description.

In factories and workshops where space is valuable and wherein a number of similar machines are operated, such for example as those having emery or other grinding wheels supported on frames for rapid rotation, and that require frequent starting and stopping while in use, it has been found very advantageous to dispense with the countershaft and change wheels thereon, usually employed for controlling motion transmitted from a main shaft to each grinding machine.

The purpose of this invention is to provide novel details of construction for a grinding machine, which will enable the instant arrest of motion of its grinding wheels, and a resumption of rapid rotary motion therefor as may be desired, the improvement dispensing with the employment of a countershaft and change wheels, as well as shifting gear therefor, usually provided for each machine.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevational view of the improved grinding machine; Fig. 2 is a front elevation thereof, a part being broken away to expose other details; and Fig. 3 is a sectional plan view substantially on the line 3—3 in Fig. 2.

In the drawings 5 indicates a base piece, whereon are erected two similar posts 6, 6, that are spaced apart a suitable distance and disposed parallel with each other, said posts being preferably cylindrical, as shown in the drawings. A cap piece 6<sup>a</sup> is mounted on each of the posts 6, 6, at their upper ends and a transverse brace 6<sup>b</sup> extends between said cap pieces, these parts serving to stiffen the upper portions of the posts against lateral pressure. Upon the cap piece 6<sup>a</sup>, the upper ends of two prop bars 6<sup>c</sup> are secured, as shown for one of said prop bars in Fig. 1, and from their upper ends, said prop bars

incline toward each other and outward and downward toward the base piece 5, whereon the merged ends of the prop bars are secured.

A substantial carrier frame for the support of working details of the machine, is adjustably mounted upon the posts 6 and comprises the following details. Two boxes 7, 7, are provided for each post 6, whereon they are loosely mounted and these boxes on each post are equally spaced apart by two upright frame members 7<sup>a</sup>. All the boxes 7 are connected together by an intermediate portion 7<sup>c</sup> of the carrier frame, that is integral with the upright frame members 7<sup>a</sup>, and it will be seen that the described construction of the carrier frame enables its slidable movement upon the posts 6, 6. Upon the two upper boxes 7, two similar bracket arms 8, 8, of similar dimensions are integrally formed, and thence project toward the front of the machine, and upon the forward portions of said bracket arms, similar boxes 8<sup>a</sup>, 8<sup>a</sup>, are formed, having the axes of their bores disposed in the same horizontal plane. A mandrel 9, is journaled near its ends in the boxes 8<sup>a</sup>, and upon said mandrel, between said boxes 8<sup>a</sup>, a driving pulley 9<sup>a</sup> is mounted and secured, collars *a* on said mandrel that bear on the inner true ends of the boxes 8<sup>a</sup>, preventing end play of the mandrel. The mandrel 9 projects at each end thereof outside of the boxes 8<sup>a</sup>, and upon said ends grinding wheels 10, formed of emery or other suitable material, are secured removably. Upon the upper portions of the lower boxes 7, 7, journal boxes 7<sup>b</sup> are formed, the bores of said journal boxes being disposed in the same transverse horizontal plane, and in said bores end portions of a gear shaft 11 are respectively supported for rotation.

A standard 12 is erected from the base piece 5 centrally between the posts 6 at a suitable distance rearward from the gear shaft 11, said standard being attached at its upper end upon the transverse brace 6<sup>b</sup>, and on the front face of the standard a toothed rack 12<sup>a</sup> is formed or secured. On the gear shaft 11, a toothed pinion 11<sup>a</sup> is mounted and secured, which meshes with the toothed rack 12<sup>a</sup>. From the body portion 7<sup>c</sup> of the carrier frame, near the upper boxes 7, 7, a bracket frame 13 is outwardly extended, having arms 13<sup>a</sup> thereon that extend across and near to the peripheries of the grinding wheels 10, serving as supports for such mate-



rial as is to be held in contact with said wheels. Upon one end of the gear shaft 11, that extends outside of an adjacent journal box 7<sup>b</sup>, one end of a tripping lever 14 is secured, said lever having a suitable length and is at its lower end furnished with a ball-like weight 14<sup>a</sup>. A belt 15, shown partially, is looped around the driving pulley 9<sup>a</sup> and in completed condition extends into engagement with a source of rotary motion and power. Upon one of the arms 13<sup>a</sup>, that is above the lever 14, a detent hook 16 is secured, which is so disposed that the lever 14 may be engaged therewith when said lever is swung upward into an inclined position. It will be noted that when the lever 14 is pendent, this downward adjustment thereof will so rock the toothed pinion 11<sup>a</sup>, as to slide the carrier frame and driving pulley 9<sup>a</sup> downward a corresponding degree, which will tighten the belt 15 so that the grinding wheels will be set in motion, and will continue running until the lever 14 is moved. At any time motion is to be suspended of the mandrel 9, and grinding wheels 10, this may be instantly effected by swinging the tripping lever 14 upward, which will elevate the carrier frame and the driving pulley 9<sup>a</sup>, thereby providing slackness in the belt 15 sufficient to arrest motion of the grinding wheels, and by placing the lever in the hook 16, the wheels will remain dormant until the lever is released therefrom. It will be apparent that the improvement, when applied upon grinding machines as hereinbefore described, will dispense with the need for a countershaft, change wheels thereon, and a belt shifting device such as is commonly employed, thus economizing space and obviating the expense of such adjuncts of a grinding machine.

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

1. The combination with two erect posts spaced apart and parallel with each other, a carrier frame having oppositely arranged upper and lower boxes connected with each other and mounted to slide on said posts, and journal boxes carried at the upper part of said carrier frame, the upper half of said journal boxes being integral with said carrier frame and the lower half being removable; of a mandrel journaled in said boxes, a pulley on said mandrel, a belt on said pulley, journal boxes formed upon the upper portion of the said lower boxes of the carrier frame, a gear shaft having its ends mounted to turn in said journal boxes, a fixed standard provided with a rack, a pinion on said gear shaft in mesh with said rack, a weighted lever on the gear shaft for turning said pinion to raise and lower the carrier frame, and a detent hook for detachably holding said lever when the latter is swung upward to move the carrier frame to slacken the belt.

2. The combination with two vertically arranged posts spaced apart and parallel with each other, a carrier frame comprising an upper and a lower box for each post, the boxes being mounted to slide on the posts, two upright frame members equally spacing apart the boxes on each post, and an intermediate member integral with said upright frame members and connecting all the boxes together, integral bracket arms connected with the upper boxes and projecting toward the front of the machine, and journal boxes at the forward portions of said bracket arms, the upper half of said journal boxes being integral with the bracket arms, of a mandrel journaled in said boxes, a pulley on said mandrel between the boxes, and means for raising and lowering the said carrier frame.

3. The combination with a base, vertically arranged posts on said base, a transverse brace member provided at its ends with cap pieces mounted on the upper ends of the posts, prop bars secured at their upper ends to the said cap pieces and extending rearward and downward toward the base, the said bars inclining toward each other and secured at their lower ends to the base, of a carrier frame mounted to slide on said posts, journal boxes carried at the upper part of the carrier frame, a mandrel journaled in said boxes, a pulley on said mandrel, and means for raising and lowering the carrier frame.

4. The combination with a base, two posts erected on the base parallel with each other, a cap piece mounted on each of the posts at their upper ends, the cap pieces being connected by a transverse brace member, and prop bars secured at their upper ends to the rear faces of said cap pieces and extending rearward and downward toward the base, the said bars inclining toward each other and uniting at their lower ends at the center of the base at the back part thereof and secured thereto, of a carrier frame slidable on the posts, journal boxes carried at the upper end of the carrier frame, a mandrel journaled in said boxes, a pulley on the mandrel between the boxes, a belt on the pulley, and means for raising and lowering the carrier frame.

5. The combination with a base, two posts erected on the base parallel with each other and connected at their upper ends by a transverse member, of a carrier frame comprising upper and lower boxes mounted to slide on said posts, and a frame member connecting said boxes, two journal boxes connected with the upper boxes of the carrier frame at the front thereof, a mandrel journaled in said journal boxes, a pulley on the mandrel between the journal boxes, journal boxes formed on the upper portions of the said lower boxes of the carrier frame, a gear shaft



having its end portions mounted to rotate in  
said journal boxes, a standard upright on the  
base centrally between the posts and at-  
tached at its upper end to the transverse  
5 member connecting the upper ends of the  
posts, a rack on the front face of said stand-  
ard, a toothed pinion on the gear shaft  
meshed with said rack, and a weighted trip-  
ping lever on one end of the gear shaft for  
10 turning the same to cause the pinion to travel

on the rack, thereby raising or lowering the  
carrier frame.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

GEORGE ELLIS SOPER.

Witnesses:

C. H. MEAD,

PETER ARMSTRONG.