No. 825,273. PATENTED JULY 3, 1906.

R. G. HENRY.

FEED MECHANISM FOR DRILL SPINDLES.

APPLICATION FILED SEPT. 29, 1905.

Fig. 1.

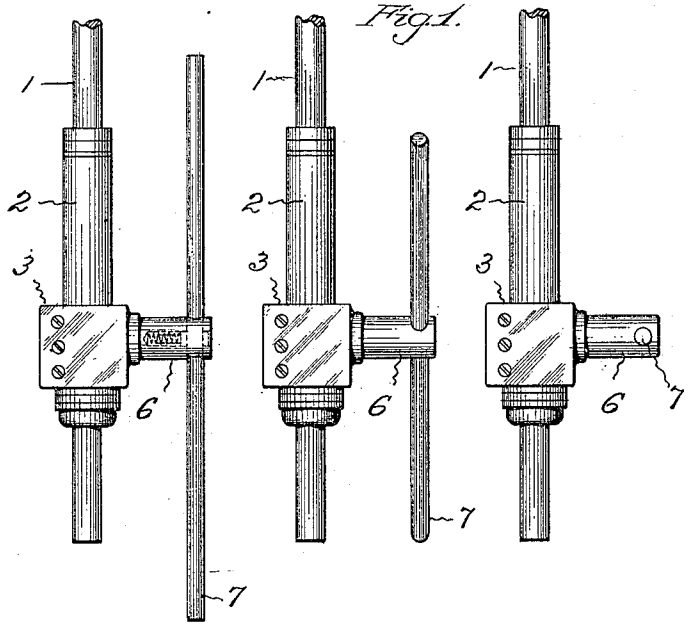


Fig. 2.

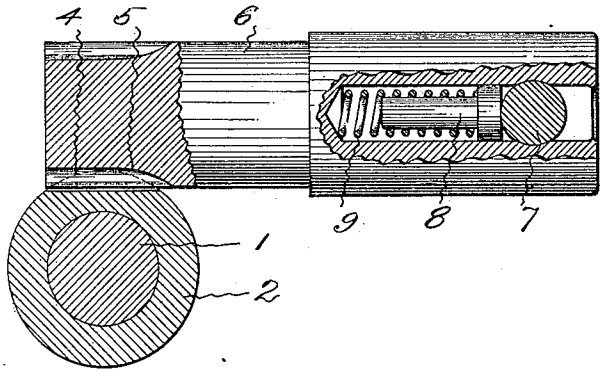
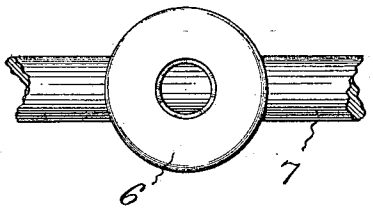


Fig. 3.



Witnesses.

C. H. Storrs.

F. E. Fallow.

Inventor.

Robert G. Henry

per

Harry P. Williams

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT G. HENRY, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE HENRY & WRIGHT COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

FEED MECHANISM FOR DRILL-SPINDLES.

No. 825,273. Specification of Letters Patent. Patented July 3, 1906.

Application filed September 29, 1905. Serial No. 280,583.

To all whom it may concern:

Be it known that I, ROBERT G. HENRY, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Feed Mechanism for Drill-Spindles, of which the following is a specification.

This invention relates to the mechanism which is grasped by the hand of the operative and turned for feeding the spindles of a sensitive drill, and while it is particularly designed for and adapted to the feed mechanism of multiple-spindle drills it is applicable to the feed mechanism of a single-spindle drill.

In multiple-spindle drill-presses the several spindles of necessity stand comparatively close together, so that the means employed for feeding the spindles must be compact to avoid interference, and the spindles are supported but a little out from the standard or back frame, so that the length of the operating handle-bars which are rotated for feeding spindles is limited. It has been common to clamp the handle-bars in the pinion-hubs of machines of this character by means of set-screws, so that when the screws were loosened the bars could be drawn out for increasing the leverage or pushed in, so that the pinion-hubs could be rotated. The manipulation of set-screws requires the use of both hands of the operative and takes time, and set-screws are not neat in appearance. They collect oil, chips, and lint, and they project so as to prevent free access of the hand about the spindles.

The object of this invention is to provide a simple, convenient, durable, and neat arrangement whereby the handle-bars which are grasped by the operative for moving the spindles may be quickly adjusted by one hand, so as to increase their leverage when the spindles are being fed toward the work, and shortened, so that they may be readily rotated without engaging the standard when the spindles are being returned.

Figure 1 of the accompanying drawings represents three spindles of a multiple-spindle drill-press provided with feed mechanism that embody this invention. Fig. 2 shows, on larger scale, one of the feed-spindle mechanisms with part broken away in order to expose the interior. Fig. 3 shows a view of the outer end of the feed-pinion hub.

The spindles 1 that are represented in the drawings are of ordinary construction and are held by feed-sleeves 2, that are supported by brackets 3 in the usual manner. As is common is this class of machines, the spindles rotate freely in and are carried up and down by the non-rotatable feed-sleeves, that are provided with racks 4, which are engaged by pinions 5, cut on the inner ends of hubs 6, as usual.

Each pinion-hub is perforated transversely near its outer end, and loosely extending through this perforation is a handle-bar 7. In a socket that extends longitudinally inward from the outer end of each pinion-hub is a plunger 8, that is thrust outwardly by a spring 9, so that its head impinges against the side of the handle-bar.

Each handle-bar is temporarily held by the friction of the spring-plunger in whatever position it is drawn to. In order to lengthen one side of the handle-bar, so as to increase the leverage and facilitate the feeding of a drill into stock, it is only necessary to grasp the bar and draw it out the desired distance. To return the handle, so that the hub may be rotated for lifting the drill from the stock, it is only necessary to push back the bar, so that it will be supported centrally by the hub. These movements are accomplished quickly by one hand, leaving the other hand of the operative free for holding the stock which is being drilled or for other purposes. Manipulating a set-screw for these purposes requires the use of two hands and takes more time, besides a set-screw projects toward the adjacent spindle in such manner as to obstruct free access of the hand of the operative when it is necessary for him to pass his hand between the spindles.

The invention claimed is—

A feed mechanism for drill-spindles having a rotatable feed-pinion, a hub extending outwardly from the pinion, said hub having a

transverse perforation near its outer end and a longitudinal socket extending from its outer end inwardly beyond the perforation, a handle-bar extending through the perforation, a plunger movable in the socket inside of and bearing against the bar, and a spring in the socket thrusting between the inner end of the socket and the plunger on the inside of the handle-bar, substantially as specified.

ROBERT G. HENRY.

Witnesses:
HARRY R. WILLIAMS,
FLORENCE E. FALLOW.