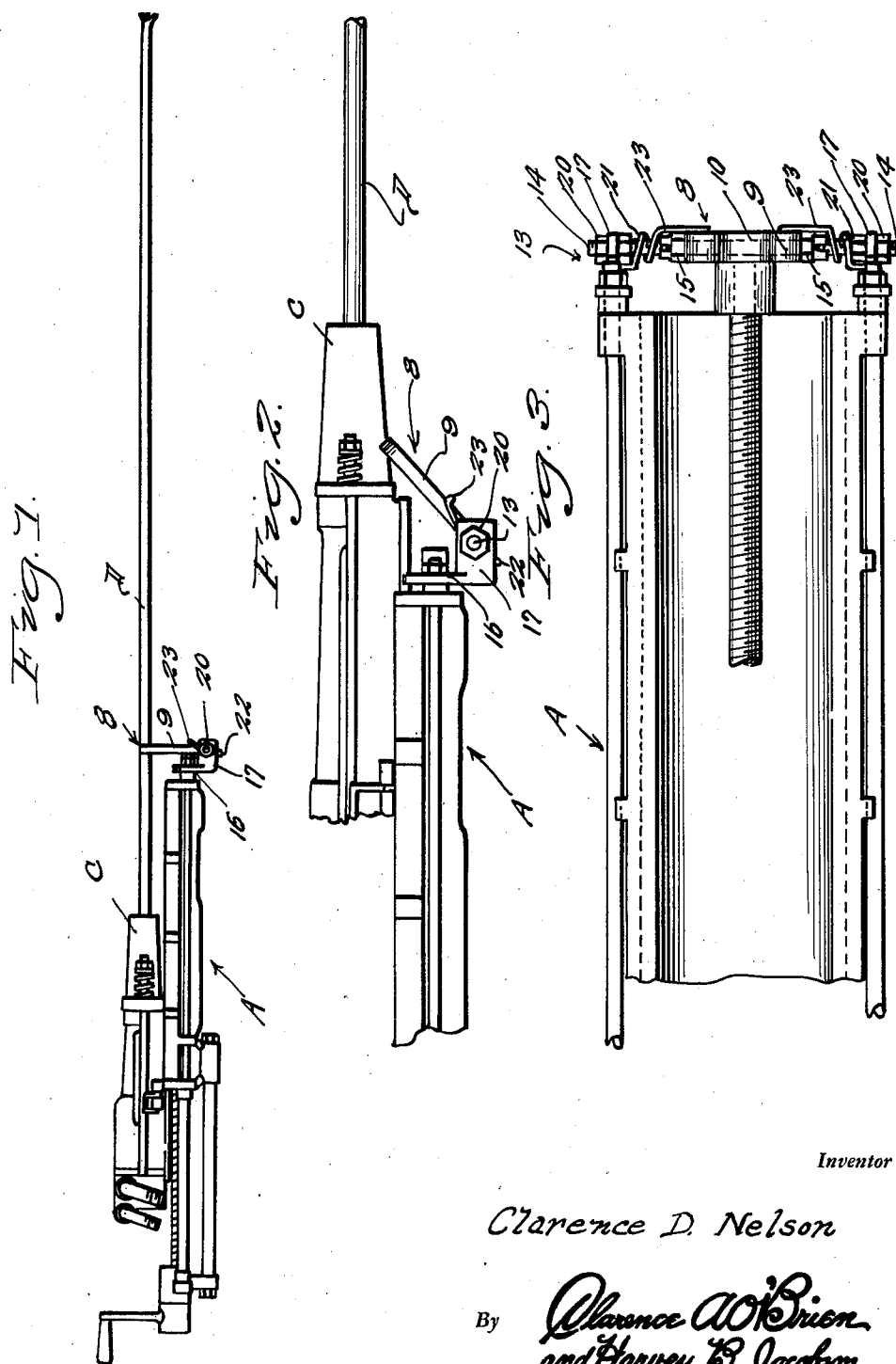


Nov. 20, 1945.

C. D. NELSON
DRILL ALIGNING ADAPTER ATTACHMENT FOR LINERS
AND OTHER ROCK DRILLS
Filed March 22, 1944

2,389,532

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5.

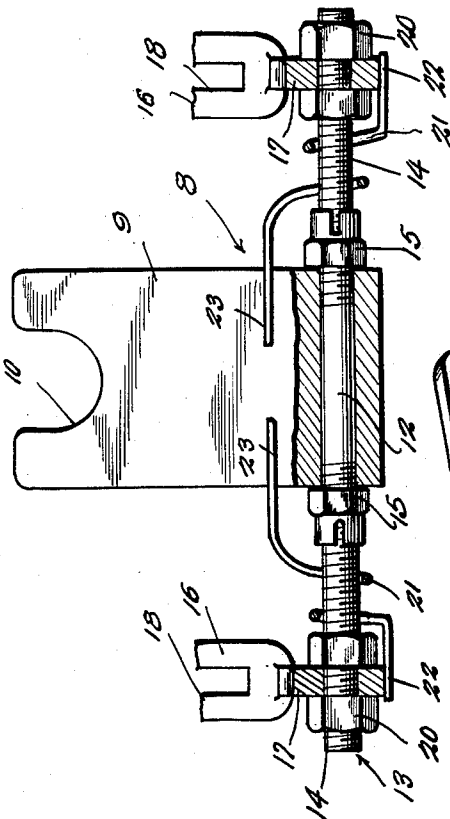


Fig. 6.

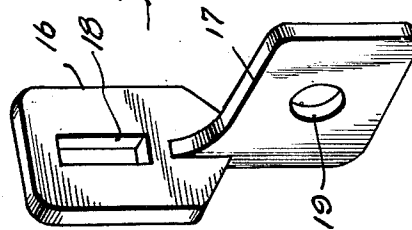


Fig. 4.

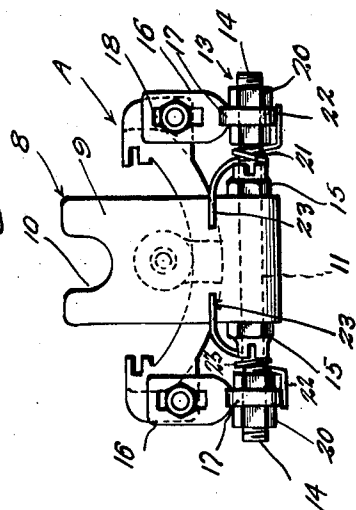
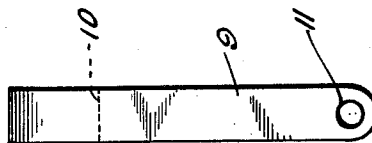


Fig. 2.



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UNITED STATES PATENT OFFICE

2,389,532

DRILL ALIGNING ADAPTER ATTACHMENT
FOR LINERS AND OTHER ROCK DRILLSClarence D. Nelson, Mullan, Idaho, assignor of
one-half to Edna Hanson, Wallace, Idaho

Application March 22, 1944, Serial No. 527,608

2 Claims. (Cl. 255-51)

This invention relates to a novel attachment for liners and other types of rock drills, and its purpose is to provide a novel and reliable adapter device which functions to align the steel drill with the chuck on a rock drill machine or device in a manner to minimize breakage of the steel, a condition which repeatedly results from poor alignment of parts.

Another phase and object of the invention is the provision of an alignment adapter attachment of the aforementioned type whose purpose is to assist the operator of drilling machines to effectively and satisfactorily start holes, and to line up his machine with speed and ease, this due to the fact that the drill is always properly maintained and held firmly in its appropriate drilling position.

In selecting and choosing an attachment structure appropriately designed to fulfill the requirements of my aims, I have evolved a preferred construction or arrangement which, through the medium of simple accommodation brackets or fixtures may be applied to the frontal end of conventional drilling machines, of several types; without necessitating alteration of existing or stock parts of the machine and which is such as not to interfere with the full stroke of the drill tool and its retention chuck.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevational view, on a reduced scale of course, showing a conventional type of rock drill equipped with an attachment arranged and constructed in accordance with the principles of the instant invention.

Figure 2 is a relatively enlarged view of the frontal end portion, this showing the final projected position of the drill chuck and its tool and illustrating how the alignment plate is swung, against spring tension, to what may be designated an out-of-the-way position.

Figure 3 is a top plan view of Figure 1, on an enlarged scale, with the attachment in its operating position and other parts removed for clearness of disclosure of the essential parts.

Figure 4 is a front end elevation of the arrangement seen in Figure 3.

Figure 5 is a view, partly in section and partly in elevation, of the complete adapter style drill

alignment attachment specifically devised in accordance with the principles of this invention.

Figure 6 is a perspective view of one of the adapter brackets or fixtures.

Figure 7 is an edge view of the spring-retained and retained drill steel alignment plate or member.

The attachment, as a whole, is disclosed in Figures 4 and 5 and is denoted by the numeral 8. It is characterized by a substantially rectangular plate 9 having a central notch 10 in its upper end forming a guide and alignment seat for the drill D. The lower end portion of the plate is provided with a smooth bore 11 forming a passage for the smooth surfaced central portion 12 of the horizontal attachment shaft 13. The end portions of the part 13 are screw-threaded, as at 14. Spanner wrench nuts 15 are fed up on the inner threaded portions of the shaft or rod and clamp against adjacent edges of the plate 9 to retain it in its desired rockable or hinged position. Using the threads and nuts as disclosed, it is evident that the plate 9 can be shifted longitudinally to occupy the exact position in relation to the drill chuck C.

I next call attention to the adapter and attaching brackets or fixtures, one of which is shown in Figure 6. It embodies an attachment plate 16 detachably and adjustably bolted to the foundation or frame A of the drilling machine. The plate 16 is provided with a right angularly disposed ear 17. It is also provided with a bolt-accommodation slot 18 while the ear 17 is provided with a shaft-accommodation hole 19. Thus, the ends of the shaft pass through the holes 19 in the respective brackets being secured in place by assembling and clamping nuts 20. Coiled springs 21 surround the threaded shaft ends and have their outer ends 22 anchored in place on the ears 17. The inner extending ends of the springs, as indicated at 23, engage the basal hinged portion of the plate 9 and serve to hold it normally in a perpendicular position. This spring means also serves to allow the plate to be swung forwardly and downwardly, as shown in Figure 2, in which position it permits the chuck C to advance on the base of the machine to its outermost or foremost drilling position.

As before mentioned, the invention, broadly speaking, is a drill attachment device for liners and other rock drills. Its purpose is to align drill steel to the chuck of rock drills, thus preventing breakage of steel by poor alignment. A second purpose is to assist the operator of drilling machines to start holes and align his ma-

chine quicker and easier, as the drill is always held firmly in proper position.

As the machine slides forward on the shell, the chuck hits the top of the notched saddle plate 9, which hinges to a prone position, thus allowing the liner to pass over and finish the stroke. As the liner is run back and the end of the chuck passes the saddle block, the springs bring the saddle block back to an upright position.

It will be evident that I have evolved and produced a structural attachment which will not only reduce the breakage of steel, but will assist the operator in starting the holes, aligning his machine and in achieving other important aims. Under present day arrangements, novice employees and unskilled hands are called upon to momentarily and temporarily fill all sorts of jobs including rock drilling and the like. It is quite evident that with this aligning and tool guide attachment on the machine, even the uninitiated operator can go about his daily tasks with less trouble and less likelihood of injury or performance of other hampering activities.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression

of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

I claim:

1. An alignment attachment for rock drilling machines comprising a shaft, brackets for adjustably and detachably mounting the shaft on the machine, and an aligning member on the central portion of the shaft, said aligning member being in the form of a rectangular plate having its upper end provided with a notch, the lower end being slidably and pivotally mounted on said shaft.

2. An attachment of the class described comprising a horizontal shaft, means for mounting it on a rock drilling machine, said shaft having its central portion smooth to form a journal, a rectangular plate having a bearing rockably mounted on said journal, said plate having an alignment notch, adjusting nuts on the shaft engageable with the plate for shifting it, and spring means on the shaft cooperable with the plate.

CLARENCE D. NELSON.