



THE DAVIS SHAFT COUPLING.

A coupling that will hold the abutting ends of two lines of shafting securely together in a straight line, without the use of keys or similar devices, is one of the latest mechanical appliances of the W. P. Davis Machine Company, Rochester, N. Y. The coupling is what is termed a "compression" coupling, or, in other words, one that exerts its force inwardly toward the shaft, instead of outwardly from the shaft.

The essential feature of the Davis coupling is to be found in an outer shell in the form of a belt-pulley, to which shell a hub is secured by arms tangentially disposed to the circumference of the hub. A glance at the accompanying illustration will show that this hub, so far from being of the ordinary construction, is split into three longitudinal segments, each of which is fastened to the outer shell by one of the arms mentioned. Within the hub, the ends of the shaft to be coupled are received. In order to lock the hub-segments and shaft ends rigidly together, clamps comprising each a sleeve and an integrally-formed flange are slipped over the tapered hub. As our illustration shows, the flanges of opposing clamps are drawn toward each other and locked together by bolts. It is evident that the tighter the nuts on the bolts are screwed up, the higher the clamp-sleeve will be seated on the tapered hub, the more closely will the hub-segments be contracted, and the more powerfully will the shaft ends be gripped. Mechanically considered, this coupling seems to be constructed on principles, the correctness of which can hardly be doubted. The fact that no keys are required, and that the few bolts employed are so completely housed that they cannot in any way catch the clothing of an attendant, are also points of interest and value. By the employment of reducing couplings it is possible to unite shafts of different diameters.

It will readily be seen that the coupling can be quickly placed on the shafting, and when drawn together it brings the shaft into perfect alignment.

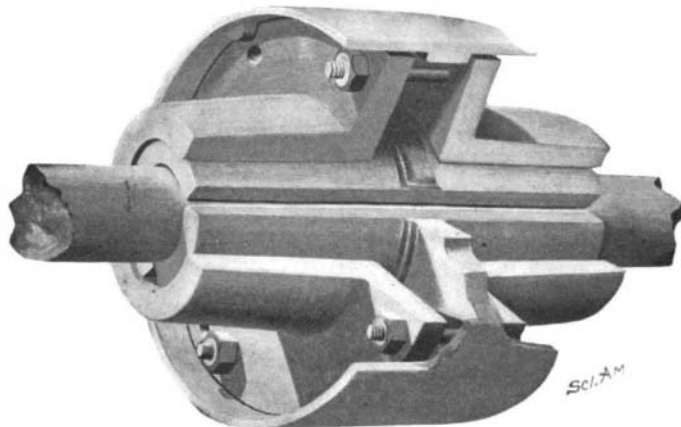
To remove the coupling from the shaft the bolts are first taken out. Each bolt is then screwed into a tapped hole in the flange, and as the bolts are turned in, the point of each bolt comes in contact with the arm of the coupling. In this way the flanges are forced from the coupling.

THE HANSON-LEE TYPEWRITER.

It is now generally known that the first practical and successful typewriting machine of the "basket-pattern" was invented in Milwaukee, Wis., and that this machine, which was chiefly the invention of the late C. Latham Sholes, was taken to Ilion, N. Y., and put upon the market as the original "Remington," but it is not as well known that the latest achievement in this art, herein illustrated, is also a Milwaukee product. The Hanson-Lee machine, as it is called, is a distinct and radical departure from all its predecessors in the art of mechanical writing, its distinguishing characteristics being a vertically arranged horizontal revolving platen, in connection with a horizontally disposed key-board. By reason of this device this machine is peculiarly adapted for commercial work, involving long columns of figures, while at the same time it is equally as serviceable for correspondence, and the making of copies, as are the machines in ordinary use, employing horizontally arranged platens.

As shown in the accompanying illustration the Hanson-Lee machine is provided with a pair of vertical guide-posts, grooved for the reception of a vertically movable platen-supporting slide, the said platen being automatically revolved by the depression of the type-levers, and of a proper diameter to permit the sheet of paper to be wrapped around it, and held by a series of open annular spring bands. Besides the usual type-key, shift, and spacer-bar levers, there is a line key with connecting mechanism, so that the platen can be elevated the space of either a single or double line, as desired; and a margin-regulating mechanism and key, so that, at the end of a line (or sooner if desired) by touching this last-named key, the platen will whirl around and stop at the predetermined distance from the left edge of the sheet, for the beginning of the

next line, the adjustment of the margin to any width desired being quickly made, and as quickly changed. The ribbon feeds automatically and is vertically disposed across the front of the platen, and as it is very narrow, only the line being typewritten is concealed thereby, all the preceding lines being always distinctly visible. The platen-supporting slide is movably supported on a central vertical shaft, and at any time can be depressed by hand thereon, if it is desirable to lower it, but the entire action of the machine is automatic, and by depressing an arm, and thereby forcing the platen-supporting slide from engagement with the dogs which ordinarily raise the platen, tooth



THE DAVIS COMPRESSION COUPLING.

by tooth, for each line, the slide carrying the platen will be instantly raised its full height, so as to be in position to remove the sheet of paper therefrom, or place a fresh sheet thereon, after which the platen can be quickly depressed to its initial position.

The actuating mechanism for vertically moving or horizontally revolving the platen comprises inde-

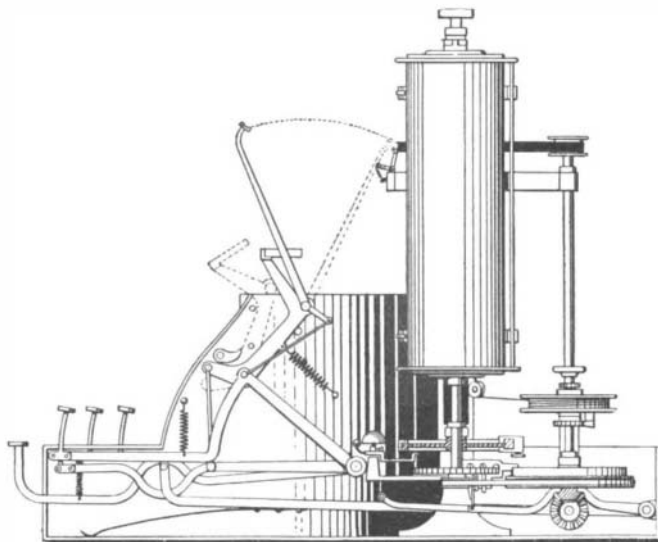
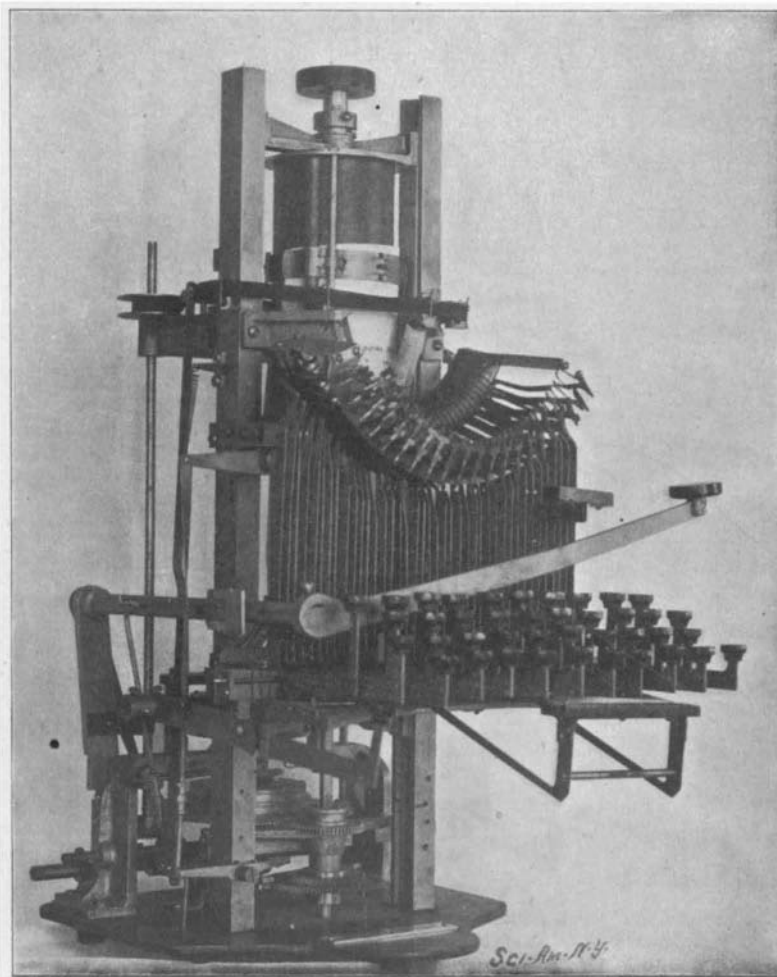


DIAGRAM SHOWING THE ACTION OF THE TYPEWRITER.



THE HANSON-LEE TYPEWRITER.

pendent spring mechanism and suitable connections, there being two drums, with volute springs therein adapted to revolve said drums in opposite directions, the described line-key being connected with one of said drums for automatically raising the platen, without rotating the same, and the margin-regulating key being connected to the other drum for automatically revolving the platen, without varying its elevation, by the mere act of depression of one or the other of the said keys. Further, each time the last-named key is depressed to revolve the platen the spring within the drum connected thereto is thereby automatically wound up, so that there is no "running down" of the spring from constant use, and no winding by hand necessary.

The characters are arranged, as is usual in shift machines, in pairs at the ends of the type-bars, which latter are supported in radially-disposed grooves in an arc-shaped guide, pivotally secured to the uprights of the machine, said type-bars being linked to the type-key levers, and when the shift-key is struck, the said guide, with the rear ends of the levers connected thereto, is thereby carried to the left, and changed in position so that the "upper case" characters will properly strike the common point of impact without any lateral change of position of the platen, the release of the shift-key causing the said guide to return to its normal position, this being accomplished without any frictional resistance or interference.

The original machine was invented by the late Walter H. Hanson, of Milwaukee, and patented some three years ago, since which time it has been greatly improved and simplified and is protected by a series of patents in the United States, Canada and the principal European countries. The present owner of the patents is one of the patentees, Rev. O. H. Lee, No. 462 Fourth Avenue, Milwaukee, Wis.

Inventions Awaiting the Touch of Genius.

For every ingenious young American, rich prizes are waiting, not only for great discoveries, but also for little things, simple improvements on the things we have. Whatever occupation he may choose, he will find that that calling is in need of men who can think of something new and better. For the men who have thought of new things, however simple, there have been in recent years in America, rich material rewards. Such a man was Hayward Augustus Harvey, who recently died a millionaire. His father was the village blacksmith in Jamestown, New York, early in the last century. Harvey saw how slow was the work of forging small things on an anvil, and sought to do it by labor-saving machinery. He became the pioneer in screw machinery and automatic pin machinery. He revolutionized screw-making. The gimlet-pointed screw was his. His last important discovery was the armor-making process which bears his name. He took out seventy-nine patents—not very many for a life of seventy years, but he did not rush to the Patent Office with every half-conceived idea. No fortune was ever more honestly earned or justly deserved than his. Like many other inventors, he showed his fellow-men how to live simply.

Concentrate your mind on the subject of needed inventions for five minutes, and you can think of a dozen things, any one of which would make its inventor rich beyond the dreams of avarice. To give a list of all the inventions that are needed in this year, 1902, would be beyond any man's power.—Franklin J. Forbes, in success.

A Heat-Detecting Machinery-Paint.

Machinery suffers, perhaps, as much from overheating as it does from general wear. In order to indicate when the moving parts have become excessively heated, a German inventor has devised a paint composed of an amalgam of the iodides of mercury and copper—a composition which, he claims, will turn color when heated bearings to which it is applied are red in color under normal conditions. But when a temperature of 140 deg. Fahr. is reached, the paint turns black.

Aluminium saw handles are being introduced which are said to be both lighter and stronger than those of wood. There are several shapes, but they are all made of thin sheet metal worked into the desired form and supplied with perforations for the purpose of enabling workmen to get a secure hold of the tool. One of the designs offered is adjustable so that the right hand side of the handle is flush with the saw, permitting the operator to work close to the floor or in other inconvenient places.