typewriter, Sholes, Glidden and Soule, June 23, 1868; celluloid, John W. and Isaiah S. Hyatt, July 12, 1870; barbed-wire fencing, J. F. Glidden, November 24, 1874, and the telephone, Alexander G. Bell, March 7, 1876.

Other patents bear the names of T. A. Edison, phonograph or speaking machine, February 19, 1878; T. A. Edison, electric lamp, January 27, 1880; Otto Mergenthaler, machine for casting lines of type, September 16, 1890; Orville and Wilbur Wright, flying machine, May 22, 1906; Lee DeForest, vacuum tube, February 18, 1908.

THE ESTABLISHMENT OF A FOREST SHELTER BELT

IN an executive order, President Roosevelt has allocated $15,000,000 from the $525,000,000 drought relief fund for the beginning of work on a forest shelter belt a hundred miles wide and extending more than 1,000 miles through the heart of the drought area.

The estimated total cost is about $75,000,000, of which about 90 per cent. will go to farmers in the present drought areas for land and for plowing, fencing, planting and caring for the trees. The President's executive order follows:

> By virtue of, and pursuant to, the authority vested in me by the emergency appropriation act, fiscal year 1935, approved June 19, 1934 (Public, No. 412, 73d Cong.), appropriating $525,000,000 to meet the emergency and necessity for relief in stricken agricultural areas, there is hereby allocated from the said appropriation the sum of $15,000,000 to the Secretary of Agriculture for the planting of forest protective strips in the plains regions as a means of ameliorating drought conditions.
>
> In carrying out this order the Secretary of Agriculture shall have authority to make all necessary expenditures in the District of Columbia and elsewhere, including but not limited to the employment of such officers, experts and employees as he may find necessary, to prescribe their authorities, duties, responsibilities and tenure, and to fix their compensation, for the procurement or production of seed and planting stock, for planting operations, for the purchase or leasing of the lands to be planted, for technical investigations, for fencing and for rent.
>
> The moneys herein made available shall be expended through such agencies, including corporations, as the Secretary of Agriculture may designate; and, with the consent of the state, county or municipality concerned, the Secretary of Agriculture may utilize such state and local officers and employees as it may deem necessary in carrying out this order.

The project will start at the Canadian border, a little to the east of a line drawn north and south through the center of North Dakota. It will run in almost a straight line into the Texas Panhandle, cutting across the two Dakotas, Nebraska, Kansas and the western arm of Oklahoma. Altogether it will call for the planting of 1,820,000 acres in trees. The land between the belts of trees will continue to be used for farming purposes. The area to be affected immediately will be approximately 20,000,000 acres.

There will be a hundred windbreaks, each about seven rods wide, covering fourteen acres out of each square mile. Only the land planted in trees will be acquired by the government through purchase, lease or cooperative agreement. Some of the land is already in the hands of federal, state and local governments. It is estimated that the cost of acquiring privately owned land will not be high, and that to at least some extent farmers will be willing to lease the land indefinitely at no charge in return for the benefits they will receive.

The present plan is to begin planting this autumn on sections of the windbreaks which fall on publicly owned land and where climatic conditions seem suitable. The Forest Service is preparing to establish a special field force in a central location for the conduct of the work. One of the first tasks will be to establish nurseries throughout the region.

REPORT OF THE CHIEF OF THE OFFICE OF EXPERIMENT STATIONS

FINDING the use for which any type of land is best fitted and the most profitable way to get submarginal acres out of cultivation and into grass, forests, recreational or other uses, thus bringing production into line with consumption, is a national trend at the agricultural experiment stations of the various states, according to the annual report of Dr. James T. Jardine, chief of the Office of Experiment Stations.

In southern Illinois soil surveys are being used to speed reforestation. Two national forests of nearly 600,000 acres are planned. If they are included in the reforestation program, they will give work to hundreds of men and should return more money to the state than it has been receiving from taxes on this land.

Soil surveys at the New Jersey experiment station seek to promote the most profitable use of land under the highly specialized agriculture of that state. With reduction of cultivated lands in Massachusetts, the experiment station is urging a return of the poorer acres to forests and recreation uses. There are now 40,000 acres of public forests in the state. The Massachusetts station also has shown that stony upland pastures can be profitably improved with a small outlay for fertilizer.

In Connecticut the station at Storrs has developed a system of pasture improvement by fertilizing, seeding, management and removal of brush which is being adopted throughout the state. Ranchmen of Hawaii have been able to improve their ranges with information on grasses and forage crops furnished by the Hawaii station. Experiments at the Arkansas station