



GIDU-PL-NE-071175

**UNITED STATES**

**LABOR**

W. N. DOAK, Secretary

**BUREAU OF LABOR STATISTICS**

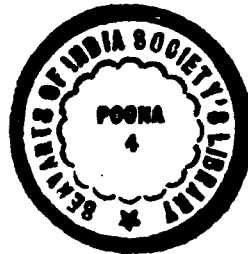
CHARLES E. BALDWIN, Acting Commissioner

**BULLETIN OF THE UNITED STATES }  
BUREAU OF LABOR STATISTICS } . . . . No. 573**

**WAGES AND HOURS OF LABOR SERIES**

**WAGES AND HOURS OF LABOR  
IN METALLIFEROUS MINES**

**1924 AND 1931**



**JANUARY, 1933**

**UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1933**

X9(D3): 9510k952.73

91

71175

## Contents

	Page
Trend of hours and earnings, by district and State.....	2
Average hours and earnings, 1924 and 1931, by kind of work and occupation.....	3
Number of mines, by kind of metals produced, 1931.....	5
Average and classified earnings per hour, 1924 and 1931, by occupation....	7
Full-time hours per week and per day, 1924 and 1931.....	9
Changes in full-time hours per week since June 1, 1929.....	13
Changes in wage rates since June 1, 1929.....	13
Overtime and Sunday and holiday work, 1931.....	14
Bonus systems.....	15
Index numbers of employment and of pay rolls, 1929 to 1931.....	16
Scope and method.....	17
Occupations.....	18
General tables.....	18
TABLE A.—Average number of days on which employees worked, average full-time and actual hours and earnings per week, average earnings per hour, and per cent of full time worked, 1931, by occupation, district, and State.....	19
TABLE B.—Average and classified earnings per hour in six specified occupations, 1931, by district and State.....	39
TABLE C.—Average and classified full-time hours per week in six specified occupations, 1931, by district and State.....	44
TABLE D.—Average and classified hours actually worked in one week in six specified occupations, 1931, by district and State.....	46
TABLE E.—Average and classified actual earnings in one week in six specified occupations, 1931, by district and State.....	50
APPENDIX.—Mine terms and occupations, with definitions, and classification by Bureau of Labor Statistics.....	54

## Appendix

### Mine Terms of Occupations, with Definitions, and Classification by Bureau of Labor Statistics

Key to places of employment in and about mine: Surface designated as (S); Underground (U); Surface and Underground (S and U); and Open Pit (O P)

#### Underground mines

Mine term	Definition	Classified by bureau under--
Air-drill operator, company (U)	(See Drilling-machine operator, company, U)-----	Drilling-machine operators, company (U).
Air-drill operator, contract (U)	(See Drilling-machine operator, contract, U)-----	Drilling-machine operators, contract (U).
Air hammerman (U)	(See Jack hammerman, U)-----	Other employees, (S and U).
Air pumper (S and U)	Operates pumps which force air into mines for ventilation purposes.	Do.
Ash wheeler (S)	Wheels ashes from fires to dump; is an unskilled surface laborer.	Topmen (S).
Assistant foreman (S and U)	(See Working foreman, S and U)-----	Other employees (S and U).
Bar loosener (U)	(See Roof trimmer, U)-----	Roof trimmers (U).
Bar man (U)	do-----	Do.
Barn man (S and U)	Feeds, waters, cleans, and harnesses mules or horses used in and about mines; cleans stable and removes refuse, and performs other similar duties about the stable.	Other employees (S and U).
Battery charger (S and U)	Recharges storage batteries used in underground mine locomotives; inspects, renews, and repairs defective parts; and renews chemicals when necessary.	Do.
Batteryman (S and U)	(See Battery charger, S and U)-----	Do.
Blacksmith (S)	Makes new metal parts and does repair work on mine cars, wagons, etc.; resets and fits horseshoes; sharpens, hardens, and tempers drilling tools, picks, etc.; and does other general blacksmith work.	Blacksmiths (S and U).
Blacksmith's helper (S)	Uses sledge at direction of blacksmith, looks after forge fire, cuts and arranges metal stock, and does any work assigned to him by the blacksmith.	Blacksmiths' helpers (S and U).
Blaster (U)	Uses an electric battery to set off charges in rock or ore after holes have been drilled and charged with explosives. This work is sometimes done by hand, each fuse being lighted separately.	Other employees (S and U).
Boiler cleaner (S)	Removes plugs from boiler and runs off dirty water, floods boiler with clean water to wash it out; may use a metal cleaning rod to remove some accumulated scale; refills boilers with clean water in readiness for use.	Do.
Boiler maker (S)	Makes repairs to boilers or engines in machine shops; also does other miscellaneous ironwork.	Do.
Boiler washer (S)	(See Boiler cleaner, S)-----	Do.
Brakeman (U)	(See Trip rider, U)-----	Trip riders (U).
Brattice man (U)	Has charge of proper ventilation of the mine; builds necessary brattices or walls, usually of wood, which insure the proper circulation of air in the mine.	Other employees (S and U).
Bruno man (U)	Works near the shoveler, using a pick and iron bar to keep the loosened ore pushed down to the shoveler's bottom.	Muckers (U).
Bumper (U)	Pushes large can-shaped containers filled with mined ore to center of shaft opening where the can hooker attaches a hoisting cable to each for the purpose of raising them to the surface.	Trammers (U).
Cable splicer (S and U)	(See Rope splicer, S and U)-----	Other employees (S and U).
Cager (U)	Has charge of cage (or elevator) used in raising or lowering men or materials between various levels of the mine or various levels and the surface; directs movements of cage by signals to hoist men.	Cagers (U).
Cager's helper (U)	Rides cage or elevator with supplies; may assist in loading and unloading same on cage or may do other general work under the direction of the cager.	Other employees (S and U).
Can hooker (U)	Works at bottom of shaft; passes hook of hoisting cable through the bale of large can-shaped container filled with ore to hoist it to the surface.	Do.

*Underground mines—Continued*

Mine term	Definition	Classified by bureau under—
Car cutter (U).....	Works with underground tippelman or dumper operator. His duties consist in uncoupling ore trains in groups of five cars, which are then pushed on the tippie and mechanically dumped at one time. Ore passes through a grizzly or screen and drops through a raise to the storage bins.	Other employees (S and U).
Car hooker (U).....	Hooks or couples loaded cars together in the mine to form a train which is later hauled to shaft for hoisting to surface or direct to tippie for dumping into railroad cars. (See also Car cutter, U.)	Do.
Car man (U).....	(See Trip rider, U.)	Trip riders (U).
Car repairman (S and U).	Makes repairs to mine cars either underground or on the surface, the underground repairs generally being minor ones.	Other employees (S and U).
Carpenter (S and U)....	Builds and repairs wooden structures and does other general carpentry work; may also do timber framing. All work is usually done on the surface but sometimes underground.	Carpenters (S and U).
Carpenter's helper (S and U).	Assists carpenter in repair of buildings and other general carpentry work under carpenter's supervision.	Carpenters' helpers (S and U).
Chainer (U).....	Attaches hoist chain or cable to or detaches it from ore cars. Chainers are found in mines where grades are too sharp for motors or mules; in such cases loads are pulled up these grades by means of a chain or cable attached to a drum or auxiliary hoist. (See also Roperider, U.)	Trip riders (U).
Chainer's helper (U)....	Assists chainer in attaching and detaching hoist chain or cable used to pull ore cars up steep grades, and does any other work which the chainer may designate.	Other employees (S and U).
Change-house laborer (S).	Assists the dry-house man, around the change room, where workmen change wet and soiled clothing, doing such work as may be assigned to him.	Dry-house men (S).
Change-house man (S).....	(See Dry-house man, S.)	Do.
Charger, batteries (S and U).	(See Battery charger, S and U).....	Other employees (S and U).
Checker, chute (U).....	(See Chute checker, U.)	Do.
Checker, production (S and U).	Maintains record of ore-filled containers hoisted to the surface, their number, contents, etc.	Do.
Chute blaster (U).....	(See Pluggerman, U.)	Do.
Chute checker (U).....	Occupation is found in those mines using the "caving method" of mining. The checker keeps a record of the amount of ore drawn from each raise or chute. It is essential that the ore be drawn uniformly, so that the entire ore body will cave in properly. Irregular drawing of ore results in improper caving, considerable dilution, and loss of ore. The checker has authority to seal or close any chute.	Do.
Chute loader (U).....	Operates doors opening and closing chutes from which mine cars are loaded.	Chute loaders (U).
Chute tapper (U).....	Occupation is found only in those mines using the "caving method" of mining. The chute tapper, generally located in a square set above the grizzly level, draws the ore through the finger raises from the undercutting level. From the finger raises (generally 4 per set) the ore passes to the grizzly below and from this level, through raises, it passes to the haulage-level chutes.	Other employees (S and U).
Chute trammer (U).....	(See Chute loader, U.)	Chute loaders (U).
Cleaner, boilers (S).....	(See Boiler cleaner, S.)	Other employees (S and U).
Company driller (U)....	(See Drilling-machine operator, company, U.)	Drilling-machine operators, company (U).
Company miner (U).....	do	Do.
Compressor man (S and U).	Has charge of air compressors which furnish air for the operation of drills and for ventilation of the mines.	Compressor men (S and U).
Contract driller (U)....	(See Drilling-machine operator, contract, U.)	Drilling-machine operators, contract (U).
Contract miner (U).....	do	Do.
Conveyor man (S and U).	Operates conveyor used to transport ore from shaft, tippie, etc., to and through sorting plant, or other place in or about the mine; sees that nothing clogs the mechanism, that it operates smoothly; also keeps its bearings clean and well greased.	Other employees (S and U).
Crane operator (S).....	Operates yard crane, which is generally used to unload mine timbers and other heavy material.	Do.
Craneman (S).....	(See Crane operator, S.)	Do.
Crusher, ore (S).....	(See Ore crusher, S.)	Do.
Cutter, fuses (S and U).....	(See Fuse cutter, S and U.)	Do.

## Underground mines—Continued

Mine term	Definition	Classified by bureau under—
Demonstrator (S and U)	Demonstrates safe, authorized methods of mining to beginners and others.	Other employees (S and U).
Ditchman (U)	Removes dirt and rubbish with a shovel from underground drainage ditches; loads dirt and rubbish into cars which are hauled away by motors or mules.	Do.
Doorman (U)	Opens and closes safety doors in airways of mine to permit trains, mules, etc., to pass.	Do.
Drag foreman (U)	Is in charge of mechanical loading of ore. In some mines, also operates the "drag," which is a heavy conveyance used to load ore into mine cars.	Do.
Draw boss (U)	Has charge of motormen and trainmen, and directs movement of ore and muck trains underground.	Do.
Drift driller (U)	Uses heavy mounted air drill in driving entries or drifts, which are horizontal passageways on the mining or haulage levels of the mine. (See also Drilling-machine operator, company, U.)	Drilling-machine operators, company (U).
Drill runner, company (U)	(See Drilling-machine operator, company, U)	Do.
Drill runner, contract (U)	(See Drilling-machine operator, contract, U)	Drilling-machine operators, contract (U).
Drill runner's helper (U)	(See Drilling-machine operator's helper, U)	Drilling-machine operators' helpers (U).
Drill sharpener (S)	(See Tool dresser, S)	Tool dressers (S).
Drill-sharpener's helper (S)	(See Tool-dresser's helper, S)	Other employees (S and U).
Drilling-machine operator, company (U)	Runs any one of several types of drilling machines used in mines. Sets up his machine, drills holes in face of work place; inserts explosives and later sets off the charge, thus shattering the ore, rock, etc., so that it can easily be removed and loaded into mine cars. Drills are generally operated by compressed air, though some electric drills are also used. Driller must be familiar with drills and be able to make needed adjustments and minor repairs, and must also have a thorough knowledge of explosives so that he can place his holes properly and know how much explosives to use. A company driller differs from a contract driller only in the nature of the work he does and the method in which he is paid. He is engaged in development work, such as driving drifts and raises and sinking shafts, and is paid on a day basis; in addition he may receive a bonus, generally based on footage of advance in a specified time. He is also known as a "miner."	Drilling-machine operators, company (U).
Drilling-machine operator, contract (U)	Method of operation is the same as that of company drilling. The difference lies in the nature of the work done and the method of payment. The contract miner is engaged in production work, i. e., getting out ore, and is generally paid at a specified rate per ton, cubic yard, or car of ore produced. In some mines, however, contract miners are paid on a flat day basis.	Drilling-machine operators, contract (U).
Drilling-machine operator's helper (U)	Assists the machine operator in setting up and placing drills, etc., in position at working face, and works under supervision of the driller.	Drilling-machine operator's helpers (U).
Driver (S)	Drives mules or horses about the yard hauling materials and may also transport ore from mine to crusher.	Drivers (S).
Driver, locomotive (U)	(See Motorman, U)	Motormen (U).
Driver, mule (U)	Drives mules in hauling ore or other materials in various parts of mine. In some mines mules alone are used; in others, mules are used to supplement motor or hand haulage.	Drivers, mule (U).
Dry-house man (S)	Is in charge of change room, where workmen may change their wet or soiled clothing and have same dried; also has charge of bath and wash rooms.	Dry-house men (S).
Dumper (S)	Takes cars of ore or refuse from cage; pushes them to crusher, bins, or other place of disposal; dumps ore or refuse and returns empty cars to cage.	Dumpers (S).
Dumper (U)	Works inside mine at the grizzly, which is a large screen constructed of heavy iron beams placed a few inches apart, just over the raise or chute leading to ore bins or cars beneath; opens doors of mine cars, sometimes assisted by trip rider, and dumps ore onto the grizzly; uses a sledge hammer to break oversize lumps which do not pass readily between the bars of grizzly, and a shovel for clean-up purposes; may also select samples of ore from each car or train. In some mines the dumper is known as grizzly worker, monkey, or screen ape.	Other employees (S and U).
Electrician (S and U)	Installs and repairs electrical machinery and light and power wiring.	Electricians (S and U).

*Underground mines—Continued*

Mine term	Definition	Classified by bureau under—
Electrician's helper (S and U).	Assists electrician in maintenance and repair of electrical machinery and light and power wiring, working under his direction.	Electricians' helpers (S and U).
Engineer, hoist (S).....	(See Hoist man, S).....	Hoist men (S).
Engineer, hoist (U).....	(See Hoist man, U).....	Hoist men (U).
Engineer, stationary (S)	Operates steam engine which furnishes power for operating hoists, pumps, or air compressors.	Engineers, stationary (S)
Fan man (S and U).....	Tends air-clearing system which provides ventilation for the mine.	Other employees (S and U).
Feeder, mules (S and U).	(See Barn man, S and U).....	Do.
Filer, saws (S).....	(See Saw filer, S).....	Do.
Fire patrolman (U).....	(See Mine patrolman, U).....	Do.
Fireman, fighter (S and U).	Is a trained fire fighter subject to immediate call at all times in case of fire in and about the mine. May work as a miner when not otherwise occupied.	Do.
Fireman stationary (S).	Fires boiler which furnishes steam for operating stationary engine.	Firemen, stationary (S).
Firewatch miner (U).....	Goes through mine with shift boss after each shift; looks for and guards against possible fire danger; Is a regular miner during the shift but reports a half hour later than the regular men and works (as above) a half hour later.	Other employees (S and U).
First-aid station man (S).	Is trained in first-aid work and remains on duty at a specified place on the surface to render first aid to injured workmen.	Do.
Flume man (S and U).....	(See Pipeman, S and U).....	Pipemen (S and U).
Foreman, working (S and U).	(See Working foreman, S and U).....	Other employees (S and U).
Framer, timbers (S).....	(See Timber framer, S).....	Timber framers (S).
Fuse cutter (S and U).....	Cuts fuse to required length and attaches cap to it. This work is often done by the powderman or by the miner.	Other employees (S and U).
Gear man (S).....	(See Head-gear man, S).....	Do.
Grizzly worker (U).....	(See Dumper, U).....	Do.
Hammerman (S).....	Operates power hammer in forge or machine shops, to shape forgings with or without the aid of dies.	Do.
Hammerman, air (U).....	(See Jack hammerman, U).....	Do.
Handy man shops (S and U).	(See Utility man, S and U).....	Do.
Head-gear man (S).....	Operates coarse or primary crusher at the tippie; may also supervise loading of crushed ore into ore trains.	Do.
Hoist engineer (S).....	(See Hoist man, S).....	Hoist men (S).
Hoist engineer (U).....	(See Hoist man, U).....	Hoist men (U).
Hoist man (S).....	Operates hoisting machinery used to lower cages and ore skips into mine and to raise them to the surface from different levels. Men and supplies are handled in cages or elevators, while ore is generally hoisted up in ore skips or buckets. Some mines, however, hoist the mine cars to the surface instead of using ore skips. Hoist man must have complete knowledge of hoisting machinery, must be very dependable and able to act promptly. He is guided in the management of his hoist by electric or bell signals.	Hoist men (S).
Hoist man (U).....	Operates hoisting machinery used in handling ore, refuse, or supplies between different levels of the mine. (See also Hoist man S.)	Hoist men (U).
Hooker, cans (U).....	(See Can hooker, U).....	Other employees (S and U).
Hooker, cars (U).....	do.....	Do.
Hostler (S).....	(See Boiler cleaner, S).....	Do.
Incline-railway operator (S).	Operates power incline railway used to hoist supplies from mill level to shaft opening on side of a mountain.	Do.
Instructor (S and U).....	(See Demonstrator, S and U).....	Do.
Jack hammerman (U).....	Uses an air hammer, underground, to drill holes into large lumps of ore so they may be blasted. Also loads holes with explosives and sets off charge. Some lumps are broken into small pieces by use of the air hammer without aid of explosives.	Do.
Laborer (S).....	(See Topman, S).....	Topmen (S).
Laborer (U).....	Does unskilled labor of various kinds about the mine underground.	Muckers (U).
Laborer, change-house (S).	(See Change-house laborer, S).....	Dry-house men (S).
Laborer, dry-house (S).....	do.....	Do.
Lander (S).....	Works in shaft house on the surface. Dumps ore-loaded skips which are hoisted from lower levels in the mine, and signals hoist man by means of bells for operation of skip.	Dumpers (S).

## Underground mines—Continued

Mine term	Definition	Classified by bureau under—
Lander (U).....	Works with shaft-sinking crew. Is stationed on the level immediately above working place in shaft. Handles muck as it is raised by the winze or temporary hoist used in sinking the shaft, and trams it away.	Muckers (U).
Leader (U).....	(See Shaft pusher, U).....	Other employees (S and U).
Leynerman (U).....	Operates heavy-type mounted air drill known as "Leyner" (the name of the inventor). This machine is used in driving drifts. (See also Drift driller, U; Drilling-machine operator, company, U.)	Drilling-machine operators, company (U).
Loader, chute (U).....	(See Chute loader, U).....	Chute loaders (U).
Loading-machine operator (U).	Operates machine for loading ore into mine cars. There are two general types of these machines—mechanical shovels and scrapers operated by hoists.	Loading-machine operators (U).
Loosener, roof (U).....	(See Roof trimmer, U).....	Roof trimmers (U).
Machine driller, company (U).	(See Drilling-machine operator, company, U).....	Drilling-machine operators, company (U).
Machine driller, contract (U).	(See Drilling-machine operator, contract, U).....	Drilling-machine operators, contract (U).
Machine loader (U).....	(See Loading-machine operator, U).....	Loading-machine operators (U).
Machine runner, company (U).	(See Drilling-machine operator, company, U).....	Drilling-machine operators, company (U).
Machine runner, contract (U).	(See Drilling-machine operator, contract, U).....	Drilling-machine operators, contract (U).
Machinist (S and U)....	Makes necessary repairs and adjustments on machines and operates lathes and other metal-working machines to make needed machine parts.	Machinists (S and U).
Machinist's helper (S and U).	Workman of some degree of skill who assists machinist in the repair and adjustment of machines, working under his direction.	Machinists' helpers (S and U).
Mason (S and U).....	Uses stone or brick and mortar or cement to build walls, foundations, etc., about the mine.	Other employees (S and U).
Mechanical-shovel operator (U).	(See Loading-machine operator, U).....	Loading-machine operators (U).
Mine patrolman (U)....	Goes through all parts of the mine at regular intervals inspecting for fire hazards, weak timbering, or any other dangers.	Other employees (S and U).
Miner, company (U)....	(See Drilling-machine operator, company, U).....	Drilling-machine operators, company (U).
Miner, contract (U)....	(See Drilling-machine operator, contract, U).....	Drilling-machine operators, contract (U).
Monkey (U).....	(See Dumper, U).....	Other employees (S and U).
Motorman (S).....	Operates electric or gasoline driven motors on surface tracks to transport timbers and other mine supplies from various places about yard to mine entrance.	Other employees (S and U).
Motorman (U).....	Operates electric or compressed air motor for hauling empty or loaded mine cars to and from designated places inside the mine.	Motormen (U).
Mucker (U).....	Uses hand shovel to load ore, rock, or refuse into mine cars; also works in stopes pushing ore down an inclined floor to raise or chute openings; may also do any unskilled work underground.	Muckers (U).
Mule (U).....	Pushes ore-loaded cans or cars away from shoveler to tracks where they may be hauled away by mule or motor.	Trammers (U).
Mule feeder (S and U) ..	(See Barn man, S and U).....	Other employees (S and U).
Nipper (U).....	Collects and carries tools from place to place where needed and in general looks after tools underground, and in addition may distribute powder.	Nippers (U).
Oil-house man (S).....	Has charge of oil stocks and gets out specified quantities as needed by drillers, oilers, or other workmen.	Other employees (S and U).
Oiler (S and U).....	Uses oil or grease to lubricate bearings of mine cars, machinery, pulleys, hoists, etc., both on the surface and underground.	Oilers (S and U).
Ore crusher (S).....	Operates ore-crushing machine which reduces ore to smaller sizes; makes adjustments of machinery, cleans and oils bearings, and looks after the distribution of crushed ore.	Other employees (S and U).
Ore sorter (S).....	Sorts ore by hand as it comes from the mine, removing rock and other refuse; may also separate into various grades ore which has been cleaned.	Ore sorters (S and U).
Painter (S).....	Does necessary painting in the maintenance of buildings and equipment, by hand with a brush or spray machine.	Other employees (S and U).



*Underground mines—Continued*

Mine term	Definition	Classified by bureau under—
Patrolman, fire (U).....	(See Mine patrolman, U).....	Other employees (S and U).
Patrolman, mine (U).....	do.....	Do.
Pipeman (S and U).....	Lays and repairs water and compressed-air pipes both underground and on the surface.	Pipemen (S and U).
Pipeman's helper (S and U).	Helps in handling heavy tools and pipe, cutting and threading pipes, screwing ends, etc., as directed by the pipeman.	Other employees (S and U).
Pluggerman (U).....	Keeps ore chutes open and free of obstructions. whenever a boulder blocks a chute, the pluggerman drills a few holes in it with a jack-hammer drill, loads holes with explosives, and sets them off, blasting the boulder into small parts which pass freely down the chute.	Do.
Policeman (S).....	(See Watchman, S).....	Watchmen (S).
Powder man (U).....	Has charge of underground powder magazine and issues explosives to the men as needed.	Powder men (U).
Production checker (S and U).	(See Checker, production, S and U).....	Other employees (S and U).
Pump man (U).....	Is in charge of underground pumping stations operated for the purpose of disposing of surplus water which accumulates in the mines. Considerable mechanical skill is required.	Pump men (U).
Pumper, air (S and U).....	(See Air pumper, S and U).....	Other employees (S and U).
Pusher (U).....	(See Shaft pusher, U).....	Do.
Raise driller (U).....	Operates drilling machine to drive raises which are shafts leading from a lower level of the mine upward through rock, earth, etc., to ore bed above, or to an upper level of the mine. (See also Drilling-machine operator, company (U).)	Drilling-machine operators, company (U).
Raise-driller's helper (U)	(See Drilling-machine operator's helper, U).....	Drilling-machine operators' helpers (U).
Repair man, car (S and U).	(See Car repair man, S and U).....	Other employees (S and U).
Repair man, general (S and U).	(See Rigger, S and U).....	Do.
Repair man, mechanical.	(See Machinist, S and U).....	Machinists (S and U).
Repair man, shaft (U).....	(See Shaft repair man, U).....	Other employees (S and U).
Repair man, slopes, rollers (U).	(See Roller man, U).....	Do.
Rigger (S and U).....	General handy man working about the mine doing ordinary repair work which requires moderate skill and experience.	Do.
Rock passer (U).....	(See Mucker, U).....	Muckers (U).
Roller man (U).....	Travels up and down inclines and slopes inspecting idle rolls over which hoist cable passes; also oils rolls and replaces or repairs any defective ones.	Do.
Roller repair man, slopes (U).	(See Roller man, U).....	Other employees (S and U).
Roof loosener (U).....	(See Roof trimmer, U).....	Roof trimmers (U).
Roof trimmer (U).....	Inspects roofs of working places after a blast and knocks down loose ore or rock to prevent its falling and injuring workmen.	Do.
Rope man (S and U).....	(See Rope splicer, S and U).....	Other employees (S and U).
Rope rider (U).....	Attaches and detaches cars to cable; rides cars that are pulled on an incline (several may be coupled together)—loaded cars going up the incline and empties coming down on parallel tracks; also sees that cars do not become detached when going over rough places or top of incline.	Trip riders (U).
Rope splicer (S and U).....	Splices and repairs rope (cable) used on hoisting machinery in and about mine.	Other employees (S and U).
Safety man (U).....	(See Mine patrolman, U).....	Do.
Sampler (U).....	Selects from each car or designated group of cars sample pieces of ore to be analyzed. Each sample is marked with record of location and other necessary data.	Do.
Saw filer (S).....	Uses hand file to sharpen teeth of saws used in timber mill or for other purposes; also sets cutting width of saws.	Do.
Sawmill man (S).....	(See Timber framer, S).....	Timber framers (S).
Sawyer (S).....	Operates power saw in cutting to designated length timbers needed about the mine. Is not a timber framer.	Other employees (S and U).
Scraper, hand (U).....	(See Stope scraper, U).....	Muckers (U).
Scraper, machine (U).....	(See Loading-machine operator, U).....	Loading-machine operators (U).
Scraper operator (U).....	do.....	Do.
Scraper, slopes (U).....	(See Stope scraper, U).....	Muckers (U).

## Underground mines—Continued

Mine term	Definition	Classified by bureau under—
Screen ape (U).....	(See Dumper, U).....	Other employees (S and U).
Screen man (U).....	do.....	Do.
Shaft boss (S and U).....	(See Shaft pusher, U).....	Do.
Shaft driller (U).....	Sinks shafts, which are perpendicular passage ways from the surface to lower levels, generally doing his own drilling, shooting, mucking, and finishing (in timber or concrete). He is assisted by "top-man" who handles muck and materials on the upper level, and by shaft-hoist or winze-hoist man who hoists muck and lowers supplies. (Also known as shaft man, shaft sinker, or shaft miner.) Highest paid miner because of great skill required and also because of hazardous nature of work. (See also Drilling-machine operator, company, U.)	Drilling-machine operators, company (U).
Shaft-hoist man (U).....	(See Winze-hoist man, U).....	Hoist men (U).
Shaft miner, drilling (U).....	(See Shaft driller, U).....	Drilling-machine operators, company (U).
Shaft miner, repairs (U).....	(See Shaft repair man, U).....	Other employees (S and U).
Shaft pusher (U).....	Working boss who, when sinking a shaft, serves as a leader and thus "pushes" his men by working harder than others of his group.	Do.
Shaft repair man (U).....	Rides cage or other hoisting device to inspect and repair shaft, replacing timbers, guides, guards, or any defective parts; hazardous work.	Do.
Shaft sinker (U).....	(See Shaft driller, U).....	Drilling-machine operators, company (U).
Shaft man (U).....	do.....	Do.
Sheave man (U).....	(See Shaft repair man, U).....	Other employees (S and U).
Shed man (S).....	Has charge of storerooms on the surface, reports low stocks, and hands out supplies as needed.	Do.
Shifter (U).....	Working foreman in charge of a shift, who also regularly does considerable productive work.	Do.
Shot firer (U).....	(See Blaster, U).....	Do.
Shovel operator (U).....	(See Loading-machine operator, U).....	Loading-machine operators (U).
Shuttle man (S).....	Operates surface locomotive about mine yard for transfer of timbers and other supplies to and from entrance to mine.	Other employees (S and U).
Sinker-hoist man (U).....	Operates shaft or sinker-hoist machinery used in handling ore, rock, refuse, or supplies in shaft-sinking work. (See also Hoist man, S.)	Hoist men (U).
Skinner (U).....	(See Driver, mule, U).....	Drivers, mule (U).
Skipper (U).....	Responsible for loading of ore skip and for movement of ore skip from different loading stations in mine to the surface. Most skips are loaded automatically, the skipper merely supervising the loading mechanism, and when skip is loaded signals hoist man to raise it. The skipper is generally assisted by a helper who keeps ore moving down the chutes from storage bins to loading mechanism.	Skippers (U).
Skipper's helper (U).....	Assists skipper by keeping open at all times the ore chutes which lead from the ore bins, and does other general work under his direction.	Other employees (S and U).
Slope repair man (U).....	(See Shaft repair man, U).....	Do.
Sorter, ore (S).....	(See Ore sorter, S).....	Ore sorters (S and U).
Specimen boss (U).....	Is the first to enter stope after a round has been fired to investigate nature of ore shot down. This occupation is found in "specimen mines," i. e., mines where a precious metal is found in its pure state.	Other employees (S and U).
Splicer, cables (S and U).....	(See Rope splicer, S and U).....	Do.
Splicer, rope (S and U).....	do.....	Do.
Stable man (S and U).....	(See Barn man, S and U).....	Do.
Station man (U).....	Has charge of stations which are loading points where materials are loaded in skip or on cage to be raised to the surface.	Station men (U).
Station tender (U).....	(See Station man, U).....	Do.
Stationary engineer (S).....	(See Engineer, stationary, S).....	Engineers, stationary (S).
Stationary fireman (S).....	(See Fireman, stationary, S).....	Firemen, stationary (S).
Stope driller (U).....	Operates mounted drill in a room or stope of the mine; drills holes into ore body, loads holes with explosives, and sets off charge; may be assisted by helper, mucker, or another driller working level-handled with him. (See also Drilling-machine operator, contractor (U).)	Drilling-machine operators, contract (U).
Stope driller's helper (U).....	(See Drilling-machine operator's helper, U).....	Drilling-machine operators' helpers (U).

*Underground mines—Continued*

Mine term	Definition	Classified by bureau under—
Stope scraper.....	Uses a shovel by hand to remove ore and refuse from stopes, placing it into mine cars.	Muckers (U).
Supply man (U).....	(See Nipper, U).....	Nippers (U).
Swamper (S).....	Assists driver or teamster in loading and unloading materials about mine yard.	Topmen (S).
Tally man (U).....	(See Chute checker, U).....	Other employees (S and U).
Tapper, chute (U).....	(See Chute tapper, U).....	Do.
Teamster (S).....	(See Driver, S).....	Drivers (S).
Timber framer (S).....	Cuts and fits timbers which are used in mines as props or supports in passage ways, stopes, etc., to prevent fall of ore, rock, or dirt.	Timber framers (S).
Timber framer's helper (S).....	Assists framer in handling, cutting, and fitting mine timbers; may be considered as understudy to timber framer.	Other employees (S and U).
Timber sprinkler (U).....	Uses spray gun to sprinkle timbers inside mine with chemical solution to prevent fire.	Do.
Timber trammer (S).....	Pushes, by hand, a small car to convey mine props or timbers from stock pile to shaft entrance.	Do.
Timberman (U).....	Places timbers and supports in stopes and entries, erects ladders, builds ore chutes and doors, and erects framework wherever needed. All underground work.	Timbermen (U).
Timberman's helper (U).....	Assists timberman in fitting and setting timbers used as supports in passageways or other places in the mine.	Timberman's helpers (U).
Tinsmith (S and U).....	Uses hand tools to cut, shape, rivet, or solder sections of tin, sheet metal, etc., used in repair work about the mine.	Other employees (S and U).
Tipple man (U).....	Operates an automatic car dumper, used in some mines, which takes five cars at a time and dumps them by turning them over on one side; and is assisted by a car cutter who uncouples the train into groups of five cars. Machine is located just over the raise leading to the storage bin.	Do.
Tool dresser (S).....	Operates special machine with dies of specific sizes used to sharpen drills which have previously been heated to required temperature by his helper, then quenches them in oil or water to harden and temper them; in smaller mines tools are sharpened by hand.	Tool dressers (S).
Tool dresser's helper (S).....	Looks after heating of stock, and assists the tool dresser in sharpening and tempering tools, drills, etc., working under tool dresser's supervision.	Other employees (S and U).
Tool sharpener (S).....	(See Tool dresser, S).....	Tool dressers (S).
Tool sharpener's helper (S).....	(See Tool-dresser's helper, S).....	Other employees (S and U).
Top lander (S).....	(See Lander, S).....	Dumpers (S).
Topman (S).....	Does various kinds of unskilled labor about the mine surface.	Topmen (S).
Torch man (S and U).....	Uses acetylene torch to weld metal sections or parts, and to mend broken parts.	Other employees (S and U).
Track cleaner (S).....	Keeps track and switches free of rock, dirt, and other refuse.	Topmen (S).
Trackman (S).....	Lays and repairs surface tracks about mine yards and its railroad siding.	Other employees (S and U).
Trackman (U).....	Lays and repairs tracks used for transportation of mine cars inside the mines.	Trackman (U).
Trackman's helper (S).....	(See Trackman's helper, U).....	Other employees (S and U).
Trackman's helper (U).....	Assists trackman in laying tracks, replacing old ties with new ones, and does other work under his direction.	Trackmen's helpers (U).
Train dispatcher (U).....	Regulates movement of ore trains on underground main-haulage tracks.	Other employees (S and U).
Trammer (U).....	Pushes loaded mine cars from stopes, where motors do not enter or mules are not used, to places where they may be conveniently hauled. This work is sometimes done by the mucker. The trammer may also have to load his own tram.	Trammers (U).
Tramway operator (S).....	(See Incline-railway operator, S).....	Other employees (S and U).
Trimmer, roof (U).....	(See Roof trimmer, U).....	Roof trimmers (U).
Trip rider (U).....	Rides on motors and assists motormen by handling brakes, throwing switches, opening and closing ventilation doors, etc.	Trip riders (U).
Truck operator (S).....	Operates motor trucks in and about yards, doing all kinds of hauling.	Truck operators (S).
Tugger man (U).....	Operates hoist machinery used in handling ore, rock, refuse, or supplies underground. (See also Hoist man, S.)	Hoist man (U).

*Underground mines—Continued*

Mine term	Definition	Classified by bureau under—
Utility man (S and U) ..	Is fairly skilled worker who can take the place of men in any one of several occupations and carry on the work; may also make ordinary repairs requiring moderate skill and experience.	Other employees (S and U).
Wall builder (U).....	Experienced mason who uses stone or brick and mortar or cement, etc., to erect stone or concrete walls in some mines where these materials are used for supports instead of timber. (See also Mason, S and U.)	Do.
Washer, boilers (S) .....	(See Boiler cleaner, S).....	Other employees (S and U).
Watchman (S).....	Is stationed at mine entrance or may patrol various points about mine yard to protect mine property, and sometimes keeps a check on those who enter and come out of the mine.	Watchmen (S).
Weighman (S and U) ..	Weighs each ore-loaded mine car or other container before it is dumped, and maintains records of these weights. This serves the purpose of showing the quantity of ore mined, and affords a basis on which contract prices are paid.	Other employees (S and U).
Wheeler, ash (S).....	(See Ash wheeler, S).....	Topmen (S).
Winze driller (U).....	Operates drilling machine to sink winzes, which are small experimental shafts, or passage ways from the surface to lower levels of the mine or from one level to another. Work is done in a manner similar to that done by the regular shaft driller.	Drilling-machine operators, company (U).
Winze-hoist man (U) ..	Operates hoist machinery used in handling ore, rock, refuse, or supplies in a small underground shaft or incline. (See also Hoist man, S.)	Hoist men (U).
Working foreman (S and U).	An employee who has supervisory duties, but also regularly does considerable productive work.	Other employees (S and U).

*Open-pit mines*

Blacksmith (O P).....	Makes new parts and does repair work on mine cars, wagons, and general machinery; resets and fits horseshoes; dresses, hardens, and tempers tools; sharpens steel and does all general blacksmith work.	Blacksmiths (O P).
Blacksmith's helper (O P).	Uses sledge at direction of blacksmith, looks after forge fire, cuts and arranges stock, and does any work assigned to him by blacksmith.	Blacksmiths' helpers (O P).
Brakeman (O P).....	(See Trip rider, O P) ..	Trip riders (O P).
Carpenter (O P).....	Builds and repairs wooden structures and does general carpentry work around open-pit mines.	Carpenters (O P).
Carpenter's helper (O P).	Assists carpenter in a general way and does rough unskilled carpentry work under his supervision.	Carpenters' helpers (O P).
Churn-drill operator (O P).	Operates a churn drill, the motive power being furnished by air from compressors; usually called a mtner; is assisted by a helper. Drill is generally located on one of the shelves, and drills a vertical hole in the rock, into which explosives are inserted and fired to loosen rock and ore so that it may be easily loaded into cars.	Drilling-machine operators (O P).
Churn-drill operator's helper (O P).	Assists churn driller in setting up churn drill and works in a general way under his supervision.	Drilling-machine operators' helpers (O P).
Craneman, steam shovel (O P).	(See Shovel craneman, O P).....	Shovel cranemen (O P).
Doble man (O P).....	(See Shot firer, O P).....	Shot firers (O P).
Driller, hand (O P).....	Uses steel drill and hammer by hand to drill holes in ore, rock, etc., into which explosives are placed for blasting. A knowledge of explosives is necessary in order properly to place holes for blasting.	Drillers, hand (O P).
Drilling-churn machine operator (O P).	(See Churn-drill operator, O P).....	Drilling-machine operators (O P).
Drilling-churn machine operator's helper (O P).	(See Churn-drill operator's helper, O P).....	Drilling-machine operators' helpers (O P).
Drilling-machine operator (O P).	Operates mounted drilling machine in open-pit mine; sets up machine and drills a hole from a lower level or table into side or flank of an upper level in open pit; must be familiar with drills and be able to make needed adjustments and minor repairs; is generally assisted by a helper. Explosives are inserted into the drill holes and fired, thus loosening rock and ore, so that it may be easily loaded into cars. Drills are operated by compressed air or electricity. (See also Churn-drill operator, O P.)	Drilling-machine operators (O P).

*Open-pit mines—Continued*

Mine term	Definition	Classified by bureau under—
Drilling-machine operator's helper (O P).	Assists drilling-machine operator (O P) in setting up drill, and helps in a general way, working under his supervision.	Drilling-machine operators' helpers (O P).
Dump man (O P).....	(See Dumper, O P).....	Dumpers (O P).
Dumper (O P).....	Stationed at ore bins or on refuse dump; opens car doors or latches, to dump cars, and closes latches or doors after dumping.	Do.
Electrician (O P).....	Installs and repairs electrical machinery and light and power wiring.	Electricians (O P).
Engineer, locomotive (O P).....	(See Locomotive engineer, O P).....	Locomotive engineers (O P).
Engineer, steam shovel (O P).....	(See Shovel engineer, O P).....	Shovel engineers (O P).
Engineer, stock pile (O P).....	(See Stock-pile engineer, O P).....	Other employees (O P).
Fireman, locomotive (O P).....	(See Locomotive fireman, O P).....	Locomotive fireman (O P).
Fireman, steam shovel (O P).....	(See Shovel fireman, O P).....	Shovel fireman (O P).
Gopherman (O P).....	Uses pick, shovel, and drill to mine and blast ore located in pockets or other isolated parts of mine not accessible for machine drilling; places explosive as well as fires them.	Drillers, hand (O P).
Jack hammerman (O P).....	Operates jack hammer with which to drill auxiliary holes into sides of the level to be mined; also drills holes into boulders which must be broken up. These holes are later charged with explosives and fired.	Drilling-machine operators (O P).
Laborer (O P).....	Does general unskilled labor on dumps or in pits; not much training required.	Laborers (O P).
Locomotive engineer (O P).....	Operates haulage or shifting locomotives, of steam railroad type, to transport ore trains through and about open-pit mines and to and from crushers or mills.	Locomotive engineers (O P).
Locomotive fireman (O P).....	Works with locomotive engineer and fires boilers to keep up steam in locomotive engines used for haulage or shifting purposes in and about open-pit mines.	Locomotive firemen (O P).
Machinist (O P).....	Makes necessary repairs and adjustments to machines used in pit and operates lathes and other metal-working machines to make needed machine parts.	Machinists (O P).
Machinist's helper (O P).....	Workman of some degree of skill who assists machinist in the repair and adjustment of machines, working under his direction.	Machinists' helpers (O P).
Miner (O P).....	(See Drilling-machine operator, O P; see also Churn-drill operator, O P.)	Drilling-machine operators (O P).
Mounted-drill operator (O P).....	(See Drilling-machine operator, O P).....	Do.
Mounted-drill operator's helper (O P).....	(See Drilling-machine operator's helper, O P).....	Drilling-machine operators' helpers (O P).
Other (O P).....	Uses oil or grease to lubricate bearings of ore cars, machinery, etc., in open-pit mines.	Others (O P).
Pipeman (O P).....	Lays and repairs water and compressed-air pipes used in open-pit mines.	Pipemen (O P).
Pitman (O P).....	Works in pit around shovels or cranes, and assists in a general way, moving up supplies, power lines, water lines, etc.; removes obstructions in path of the steam shovel; levels and blocks shovels when moved to a new place of work; and wheels coal from storage pile to steam shovel for firing boilers.	Pitmen (O P).
Pump man (O P).....	Tends pumping machinery at water plant which supplies water for mine and community.	Pump men (O P).
Pumper, water (O P).....	(See Pump man, O P).....	Do.
Repair man (O P).....	Makes minor repairs and adjustments to steam shovels, cranes, and other machinery and equipment which do not require the services of a machinist.	Repair men (O P).
Shot firer (O P).....	Blasts rock and ore after it has been drilled and charged with explosives; may set off shots, by using a battery or an electric firing machine; sometimes called a "dobie man."	Shot fires (O P).
Shovel craneman (O P).....	Operates, by means of levers, the loading mechanism of a steam or electric shovel.	Shovel cranemen (O P).
Shovel engineer (O P).....	Has charge of steam or electric shovel, keeps its machinery in working condition, and supervises moving of shovel from one place to another in the pit.	Shovel engineers (O P).
Shovel fireman (O P).....	Fires boiler which furnishes power for operating steam shovel.	Shovel firemen (O P).

## Open-pit mines—Continued

Mine term	Definition	Classified by bureau under—
Shovel laborer (O P)....	Does unskilled work such as handling timbers and materials used in moving steam shovel from one location to another. (See Shovel craneman, O P).....	Laborers (O P).
Steam-shovel craneman (O P).		Shovel craneman (O P).
Steam-shovel engineer (O P).	(See Shovel engineer, O P).....	Shovel engineers (O P).
Steam-shovel fireman (O P).	(See Shovel fireman, O P).....	Shovel firemen (O P).
Steam-shovel laborer (O P).	(See Shovel laborer, O P).....	Laborers (O P).
Stock-pile engineer (O P).	Operates crane used for putting ore on a stock or storage pile.	Other employees (O P).
Switchman (O P).....	Operates and throws switches of railroad tracks where there are no automatically operated switches.	Switchmen (O P).
Track-moving machine operator (O P).	Operates machine which lays and moves tracks in the pit, mechanically, by picking up required portion of track and moving it to the desired position without having to uncouple it; also tightens loose ties and restores proper gauge to tracks after being moved.	Other employees (O P).
Trackman (O P).....	Lays, moves, and repairs tracks in the pit or on the dump. In some mines the laying and moving of tracks is now done mechanically. (See also Track-moving machine operator, O P.)	Trackmen (O P).
Trip rider (O P).....	Ride ore trains and locomotives and assists motormen by handling brakes, throwing switches, etc.	Trip riders (O P).
Truck operator (O P)....	Operates motor truck in and about open-pit mine, doing all kinds of hauling.	Truck operators (O P).
Watchman (O P).....	Performs duties of caretaker and does general patrol work, watching steam shovels, etc.; also may keep up fires under boilers when temporarily not in use or at night.	Watchmen (O P).
Water-plant operator (O P).	(See Pump man, O P).....	Pump men (O P).

X9(D3):9510/952-73

91.

71175

# LIST OF BULLETINS OF THE BUREAU OF LABOR STATISTICS

*The following is a list of all bulletins of the Bureau of Labor Statistics published since July, 1912, except that in the case of bulletins giving the results of periodic surveys of the bureau only the latest bulletin on any one subject is here listed.*

*A complete list of the reports and bulletins issued prior to July, 1912, as well as the bulletins published since that date, will be furnished on application. Bulletins marked thus (\*) are out of print.*

## Conciliation and arbitration (including strikes and lockouts).

- \*No. 124. Conciliation and arbitration in the building trades of Greater New York. [1913.]
- \*No. 133. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements. [1913.]
- \*No. 139. Michigan copper district strike. [1914.]
- \*No. 144. Industrial court of the cloak, suit, and skirt industry of New York City. [1914.]
- \*No. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City. [1914.]
- No. 191. Collective bargaining in the anthracite-coal industry. [1916.]
- \*No. 198. Collective agreements in the men's clothing industry. [1916.]
- No. 233. Operation of the industrial disputes investigation act of Canada. [1918.]
- No. 255. Joint industrial councils in Great Britain. [1919.]
- No. 283. History of the Shipbuilding Labor Adjustment Board, 1917 to 1919.
- No. 287. National War Labor Board: History of its formation, activities, etc. [1921.]
- \*No. 303. Use of Federal power in settlement of railway labor disputes. [1922.]
- No. 341. Trade agreement in the silk-ribbon industry of New York City. [1923.]
- No. 402. Collective bargaining by actors. [1926.]
- No. 468. Trade agreements, 1927.
- No. 481. Joint industrial control in the book and job printing industry. [1926.]

## Cooperation.

- No. 313. Consumers' cooperative societies in the United States in 1920.
- No. 314. Cooperative credit societies (credit unions) in America and in foreign countries. [1922.]
- No. 437. Cooperative movement in the United States in 1925 (other than agricultural).
- No. 531. Consumers', credit, and productive cooperative societies, 1929.

## Employment and unemployment.

- \*No. 109. Statistics of unemployment and the work of employment offices in the United States. [1913.]
- \*No. 172. Unemployment in New York City, N. Y. [1915.]
- \*No. 183. Regularity of employment in the women's ready-to-wear garment industries. [1915.]
- \*No. 195. Unemployment in the United States. [1916.]
- \*No. 196. Proceedings of Employment Managers' Conference, held in Minneapolis, Minn., January 19 and 20, 1916.
- \*No. 202. Proceedings of the conference of Employment Managers' Association of Boston, Mass., held May 10, 1916.
- No. 206. The British system of labor exchanges. [1916.]
- \*No. 227. Proceedings of Employment Managers' Conference, Philadelphia, Pa., April 2 and 3, 1917.
- \*No. 235. Employment system of the Lake Carriers' Association. [1918.]
- \*No. 241. Public employment offices in the United States. [1918.]
- \*No. 247. Proceedings of Employment Managers' Conference, Rochester, N. Y., May 9-11, 1918.
- \*No. 310. Industrial unemployment: A statistical study of its extent and causes. [1922.]
- No. 409. Unemployment in Columbus, Ohio, 1921 to 1925.
- No. 542. Report of the Advisory Committee on Employment Statistics. [1931.]
- No. 544. Unemployment-benefit plans in the United States and unemployment insurance in foreign countries. [1931.]
- \*No. 553. Fluctuations in employment in Ohio, 1914 to 1929.
- No. 555. Social and economic character of unemployment in Philadelphia, April, 1930.

## Foreign labor laws.

- \*No. 142. Administration of labor laws and factory inspection in certain European countries. [1914.]
- No. 494. Labor legislation of Uruguay. [1929.]
- No. 510. Labor legislation of Argentina. [1930.]
- No. 529. Workmen's compensation legislation of the Latin American countries. [1930.]
- No. 549. Labor legislation of Venezuela. [1931.]
- No. 554. Labor legislation of Paraguay. [1931.]
- No. 559. Labor legislation of Ecuador. [1931.]
- No. 569. Labor legislation of Mexico. [1932.]

## Housing.

- \*No. 158. Government aid to home owning and housing of working people in foreign countries. [1914.]
- No. 283. Housing by employers in the United States. [1920.]
- No. 295. Building operations in representative cities, 1920.
- No. 545. Building permits in principal cities of the United States in [1921 to] 1930.

## Industrial accidents and hygiene.

- \*No. 104. Lead poisoning in potteries, tile works, and porcelain-enameled sanitary ware factories. [1912.]
- No. 120. Hygiene of the painters' trade. [1913.]

### Industrial accidents and hygiene—Continued.

- \*No. 127. Danger to workers from dusts and fumes, and methods of protection. [1913.]
- \*No. 141. Lead poisoning in the smelting and refining of lead. [1914.]
- \*No. 157. Industrial accident statistics. [1915.]
- \*No. 165. Lead poisoning in the manufacture of storage batteries. [1914.]
- \*No. 179. Industrial poisons used in the rubber industry. [1915.]
- No. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings. [1916.]
- \*No. 201. Report of the committee on statistics and compensation insurance costs of the International Association of Industrial Accident Boards and Commissions. [1916.]
- No. 209. Hygiene of the printing trades. [1917.]
- \*No. 219. Industrial poisons used or produced in the manufacture of explosives. [1917.]
- No. 221. Hours, fatigue, and health in British munition factories. [1917.]
- No. 230. Industrial efficiency and fatigue in British munition factories. [1917.]
- \*No. 231. Mortality from respiratory diseases in dusty trades (inorganic dusts). [1918.]
- \*No. 234. The safety movement in the iron and steel industry, 1907 to 1917.
- No. 236. Effects of the air hammer on the hands of stonecutters. [1918.]
- \*No. 249. Industrial health and efficiency. Final report of British Health of Munitions Workers' Committee. [1919.]
- \*No. 251. Preventable death in the cotton-manufacturing industry. [1919.]
- No. 256. Accidents and accident prevention in machine building. [1919.]
- No. 267. Anthrax as an occupational disease. [1920.]
- No. 276. Standardization of industrial accident statistics. [1920.]
- \*No. 280. Industrial poisoning in making coal-tar dyes and dye intermediates. [1921.]
- \*No. 291. Carbon monoxide poisoning. [1921.]
- No. 293. The problem of dust phthisis in the granite-stone industry. [1922.]
- No. 298. Causes and prevention of accidents in the iron and steel industry, 1910-1919.
- No. 306. Occupation hazards and diagnostic signs: A guide to impairments to be looked for in hazardous occupations. [1922.]
- No. 392. Survey of hygienic conditions in the printing trades. [1925.]
- No. 405. Phosphorus necrosis in the manufacture of fireworks and in the preparation of phosphorus. [1926.]
- No. 427. Health survey of the printing trades, 1922 to 1925.
- No. 428. Proceedings of the Industrial Accident Prevention Conference, held at Washington, D. C., July 14-16, 1926.
- No. 460. A new test for industrial lead poisoning. [1928.]
- No. 466. Settlement for accidents to American seamen. [1928.]
- No. 488. Deaths from lead poisoning, 1925-1927.
- No. 490. Statistics of industrial accidents in the United States to the end of 1927.
- No. 507. Causes of death, by occupation. [1930.]

### Industrial relations and labor conditions.

- No. 237. Industrial unrest in Great Britain. [1917.]
- \*No. 340. Chinese migrations with special reference to labor conditions. [1923.]
- No. 349. Industrial relations in the West Coast lumber industry. [1923.]
- \*No. 361. Labor relations in the Fairmont (W. Va.) bituminous-coal field. [1924.]
- No. 380. Postwar labor conditions in Germany. [1925.]
- No. 383. Works council movement in Germany. [1925.]
- No. 384. Labor conditions in the shoe industry in Massachusetts, 1920-1924.
- No. 399. Labor relations in the lace and lace-curtain industries in the United States. [1925.]
- No. 534. Labor conditions in the Territory of Hawaii, 1929-1930.

### Labor laws of the United States (including decisions of courts relating to labor).

- \*No. 211. Labor laws and their administration in the Pacific States. [1917.]
- No. 229. Wage payment legislation in the United States. [1917.]
- No. 285. Minimum wage laws of the United States: Construction and operation. [1921.]
- No. 321. Labor laws that have been declared unconstitutional. [1922.]
- No. 322. Kansas Court of Industrial Relations. [1923.]
- No. 343. Laws providing for bureaus of labor statistics, etc. [1923.]
- No. 370. Labor laws of the United States, with decisions of courts relating thereto. [1925.]
- No. 408. Laws relating to payment of wages. [1926.]
- No. 548. Decisions of courts and opinions affecting labor, 1929-1930.
- No. 552. Labor legislation, 1930.

### Proceedings of annual conventions of the Association of Governmental Officials in Industry of the United States and Canada. (Name changed in 1928 from Association of Governmental Labor Officials of the United States and Canada.)

- \*No. 266. Seventh, Seattle, Wash., July 12-15, 1920.
- No. 307. Eighth, New Orleans, La., May 2-8, 1921.
- \*No. 323. Ninth, Harrisburg, Pa., May 22-26, 1922.
- \*No. 352. Tenth, Richmond, Va., May 1-4, 1923.
- \*No. 389. Eleventh, Chicago, Ill., May 19-23, 1924.
- \*No. 411. Twelfth, Salt Lake City, Utah, August 13-15, 1925.
- No. 429. Thirteenth, Columbus, Ohio, June 7-10, 1926.
- \*No. 455. Fourteenth, Paterson, N. J., May 31 to June 3, 1927.
- \*No. 480. Fifteenth, New Orleans, La., May 21-24, 1928.
- No. 508. Sixteenth, Toronto, Canada, June 4-7, 1929.
- No. 530. Seventeenth, Louisville, Ky., May 20-23, 1930.
- No. 563. Eighteenth, Boston, Mass., May 18-22, 1931.

### Proceedings of annual meetings of the International Association of Industrial Accident Boards and Commissions.

- No. 210. Third, Columbus, Ohio, April 25-28, 1916.
- No. 248. Fourth, Boston, Mass., August 21-25, 1917.
- No. 264. Fifth, Madison, Wis., September 24-27, 1918.
- \*No. 273. Sixth, Toronto, Canada, September 23-26, 1919.
- No. 281. Seventh, San Francisco, Calif., September 20-24, 1920.
- No. 304. Eighth, Chicago, Ill., September 19-23, 1921.
- No. 333. Ninth, Baltimore, Md., October 9-13, 1922.



**Proceedings of annual meetings of the International Association of Industrial Accident Boards and Commissions—Continued.**

- \*No. 369. Tenth, St. Paul, Minn., September 24-26, 1923.
- No. 385. Eleventh, Halifax, Nova Scotia, August 26-28, 1924.
- No. 395. Index to proceedings, 1914-1924.
- No. 406. Twelfth, Salt Lake City, Utah, August 17-20, 1925.
- No. 432. Thirteenth, Hartford, Conn., September 14-17, 1926.
- \*No. 456. Fourteenth, Atlanta, Ga., September 27-29, 1927.
- No. 485. Fifteenth, Paterson, N. J., September 11-14, 1928.
- No. 511. Sixteenth, Buffalo, N. Y., October 8-11, 1929.
- No. 536. Seventeenth, Wilmington, Del., September 22-26, 1930.
- No. 564. Eighteenth, Richmond, Va., October 5-8, 1931.

**Proceedings of annual meetings of the International Association of Public Employment Services.**

- No. 192. First, Chicago, December 19 and 20, 1913; second, Indianapolis, September 24 and 25, 1914; third, Detroit, July 1 and 2, 1915.
- \*No. 220. Fourth, Buffalo, N. Y., July 20 and 21, 1916.
- No. 311. Ninth, Buffalo, N. Y., September 7-9, 1921.
- No. 337. Tenth, Washington, D. C., September 11-13, 1922.
- No. 355. Eleventh, Toronto, Canada, September 4-7, 1923.
- No. 400. Twelfth, Chicago, Ill., May 19-23, 1924.
- No. 414. Thirteenth, Rochester, N. Y., September 15-17, 1925.
- No. 478. Fifteenth, Detroit, Mich., October 25-28, 1927.
- No. 501. Sixteenth, Cleveland, Ohio, September 18-21, 1928.
- No. 538. Seventeenth, Philadelphia, Pa., September 24-27, 1929, and eighteenth, Toronto, Canada, September 9-12, 1930.

**Productivity of labor.**

- No. 356. Productivity costs in the common-brick industry. [1924.]
- No. 360. Time and labor costs in manufacturing 100 pairs of shoes, 1923.
- No. 407. Labor cost of production and wages and hours of labor in the paper box-board industry. [1926.]
- \*No. 412. Wages, hours, and productivity in the pottery industry, 1925.
- No. 441. Productivity of labor in the glass industry. [1927.]
- No. 474. Productivity of labor in merchant blast furnaces [1928.]
- No. 475. Productivity of labor in newspaper printing. [1929.]
- No. 550. Cargo handling and longshore labor conditions. [1932.]

**Retail prices and cost of living**

- \*No. 121. Sugar prices, from refiner to consumer. [1913.]
- \*No. 130. Wheat and flour prices, from farmer to consumer. [1913.]
- \*No. 164. Butter prices, from producer to consumer. [1914.]
- \*No. 170. Foreign food prices as affected by the war. [1915.]
- No. 357. Cost of living in the United States. [1924.]
- No. 369. The use of cost-of-living figures in wage adjustments. [1925.]
- No. 495. Retail prices, 1890 to 1928.

**Safety codes.**

- No. 336. Safety code for the protection of industrial workers in foundries.
- No. 350. Rules governing the approval of headlighting devices for motor vehicles.
- \*No. 351. Safety code for the construction, care, and use of ladders.
- No. 375. Safety code for laundry machinery and operations.
- \*No. 382. Code of lighting school buildings.
- No. 410. Safety code for paper and pulp mills.
- \*No. 430. Safety code for power presses and foot and hand presses.
- No. 447. Safety code for rubber mills and calenders.
- No. 451. Safety code for forging and hot-metal stamping.
- No. 463. Safety code for mechanical power-transmission apparatus—first revision.
- No. 509. Textile safety code.
- No. 512. Code for identification of gas-mask canisters.
- No. 519. Safety code for woodworking plants, as revised 1930.
- No. 527. Safety code for use, care, and protection of abrasive wheels, as revised 1930.
- No. 556. Code of lighting: Factories, mills, and other work places. (Revision of 1930.)
- No. 562. Safety codes for the prevention of dust explosions.

**Vocational and workers' education.**

- \*No. 159. Short-unit courses for wage earners, and a factory school experiment. [1915.]
- \*No. 162. Vocational education survey of Richmond, Va. [1915.]
- \*No. 199. Vocational education survey of Minneapolis, Minn. [1917.]
- No. 271. Adult working-class education in Great Britain and the United States [1920.]
- No. 459. Apprenticeship in building construction. [1928.]

**Wages and hours of labor.**

- \*No. 146. Wages and regularity of employment and standardization of piece rates in the dress and waist industry of New York City. [1914.]
- \*No. 147. Wages and regularity of employment in the cloak, suit, and skirt industry. [1914.]
- No. 161. Wages and hours of labor in the clothing and cigar industries, 1911 to 1913.
- \*No. 163. Wages and hours of labor in the building and repairing of steam railroad cars, 1907 to 1913.
- \*No. 190. Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1914.
- No. 204. Street-railway employment in the United States. [1917.]
- No. 218. Wages and hours of labor in the iron and steel industry, 1907 to 1915: With a glossary of occupations.
- \*No. 225. Wages and hours of labor in the lumber, millwork, and furniture industries, 1915.
- No. 265. Industrial survey in selected industries in the United States, 1919.
- No. 297. Wages and hours of labor in the petroleum industry, 1920.
- No. 356. Productivity costs in the common-brick industry. [1924.]
- No. 358. Wages and hours of labor in the automobile-tire industry, 1923.
- No. 360. Time and labor costs in manufacturing 100 pairs of shoes, 1923.

### Wages and hours of labor—Continued.

- No. 365. Wages and hours of labor in the paper and pulp industry, 1923.
- No. 407. Labor costs of production and wages and hours of labor in the paper box-board industry, [1926.]
- No. 412. Wages, hours, and productivity in the pottery industry, 1925.
- No. 416. Hours and earnings in anthracite and bituminous coal mining, 1922 and 1924.
- No. 484. Wages and hours of labor of common street laborers, 1928.
- No. 499. History of wages in the United States from colonial times to 1928.
- No. 502. Wages and hours of labor in the motor-vehicle industry, 1928.
- No. 504. Wages and hours of labor in the hosiery and underwear industries, 1907 to 1928.
- No. 513. Wages and hours of labor in the iron and steel industry, 1929.
- No. 514. Pennsylvania Railroad wage data. From Report of Joint Fact Finding Committee in wage negotiations in 1927.
- No. 516. Hours and earnings in bituminous-coal mining, 1929.
- No. 523. Hours and earnings in the manufacture of airplanes and aircraft engines, 1929.
- No. 525. Wages and hours of labor in the Portland cement industry, 1926.
- No. 532. Wages and hours of labor in the cigarette manufacturing industry, 1930.
- No. 533. Wages and hours of labor in woolen and worsted goods manufacturing, 1910 to 1930.
- No. 534. Labor conditions in the Territory of Hawaii, 1929-1930.
- No. 535. Wages and hours of labor in the slaughtering and meat-packing industry, 1929.
- No. 537. Wages and hours of labor in the dyeing and finishing of textiles, 1930.
- No. 539. Wages and hours of labor in cotton-goods manufacturing, 1910 to 1930.
- No. 546. Wages and hours in rayon and other synthetic textile manufacturing, 1930.
- No. 547. Wages and hours in cane-sugar refining industry, 1930.
- No. 551. Wages and hours of labor in the boot and shoe industry, 1910 to 1930.
- No. 557. Wages and hours of labor in the men's clothing industry, 1911 to 1930.
- No. 560. Wages and hours of labor in the lumber industry in the United States, 1930.
- No. 566. Union scales of wages and hours of labor, May 15, 1931.
- No. 567. Wages and hours of labor in the iron and steel industry, 1931.
- No. 568. Wages and hours of labor in the manufacture of silk and rayon goods, 1931.
- No. 570. Wages and hours of labor in foundries and machine shops, 1931.
- No. 571. Wages and hours of labor in the furniture industry, 1910 to 1931.

### Welfare work.

- \*No. 123. Employers' welfare work. [1913.]
- No. 222. Welfare work in British munition factories. [1917.]
- \*No. 260. Welfare work for employees in industrial establishments in the United States. [1919.]
- No. 458. Health and recreation activities in industrial establishments, 1926.

### Wholesale prices.

- \*No. 284. Index numbers of wholesale prices in the United States and foreign countries. [1921.]
- \*No. 453. Revised index numbers of wholesale prices, 1923 to July, 1927.
- No. 572. Wholesale prices, 1931.

### Women and children in industry.

- \*No. 116. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia. [1913.]
- \*No. 117. Prohibition of night work of young persons. [1913.]
- \*No. 118. Ten-hour maximum working-day for women and young persons. [1913.]
- No. 119. Working hours of women in the pea canneries of Wisconsin. [1913.]
- \*No. 122. Employment of women in power laundries in Milwaukee. [1913.]
- No. 160. Hours, earnings, and conditions of labor of women in Indiana mercantile establishments and garment factories. [1914.]
- \*No. 167. Minimum-wage legislation in the United States and foreign countries. [1915.]
- \*No. 175. Summary of the report on conditions of woman and child wage earners in the United States. [1915.]
- \*No. 176. Effect of minimum-wage determinations in Oregon. [1915.]
- \*No. 180. The boot and shoe industry in Massachusetts as a vocation for women. [1915.]
- \*No. 182. Unemployment among women in department and other retail stores of Boston, Mass. [1916.]
- No. 193. Dressmaking as a trade for women in Massachusetts. [1916.]
- No. 215. Industrial experience of trade-school girls in Massachusetts. [1917.]
- \*No. 217. Effect of workmen's compensation laws in diminishing the necessity of industrial employment of women and children. [1917.]
- \*No. 223. Employment of women and juveniles in Great Britain during the war. [1917.]
- No. 253. Women in the lead industries. [1919.]
- No. 467. Minimum wage legislation in various countries. [1928.]
- No. 558. Labor conditions of women and children in Japan. [1931.]

### Workmen's insurance and compensation (including laws relating thereto).

- \*No. 101. Care of tuberculous wage earners in Germany. [1912.]
- \*No. 102. British national insurance act, 1911.
- \*No. 103. Sickness and accident insurance law in Switzerland. [1912.]
- No. 107. Law relating to insurance of salaried employees in Germany. [1913.]
- \*No. 155. Compensation for accidents to employees of the United States. [1914.]
- \*No. 212. Proceeding of the conference on social insurance called by the International Association of Industrial Accident Boards and Commissions, Washington, D. C., December 5-9, 1916.
- \*No. 243. Workmen's compensation legislation in the United States and foreign countries, 1917 and 1918.
- No. 301. Comparison of workmen's compensation insurance and administration. [1922.]
- No. 312. National health insurance in Great Britain, 1911 to 1921.
- \*No. 379. Comparison of workmen's compensation laws of the United States as of January 1, 1925.
- No. 477. Public-service retirement systems, United States and Europe. [1929.]
- No. 496. Workmen's compensation legislation of the United States and Canada as of January 1, 1929. (With text of legislation enacted in 1927 and 1928.)
- No. 529. Workmen's compensation legislation of the Latin American countries. [1930.]

### Miscellaneous series.

- \*No. 174. Subject index of the publications of the United States Bureau of Labor Statistics up to May 1, 1915.
- No. 208. Profit sharing in the United States. [1916.]
- No. 242. Food situation in central Europe, 1917.

**Miscellaneous series—Continued.**

- No. 254. International labor legislation and the society of nations. [1919.]
- No. 268. Historical survey of international action affecting labor. [1920.]
- No. 282. Mutual relief associations among Government employees in Washington, D. C. [1921.]
- No. 319. The Bureau of Labor Statistics: Its history, activities, and organization. [1922.]
- No. 326. Methods of procuring and computing statistical information of the Bureau of Labor Statistics. [1923.]
- No. 342. International Seamen's Union of America: A study of its history and problems. [1923.]
- No. 346. Humanity in government. [1923.]
- No. 372. Convict labor in 1923.
- No. 386. Cost of American almshouses. [1925.]
- No. 398. Growth of legal-aid work in the United States. [1926.]
- No. 401. Family allowances in foreign countries. [1926.]
- No. 461. Labor organizations in Chile. [1928.]
- No. 465. Beneficial activities of American trade-unions. [1928.]
- No. 479. Activities and functions of a State department of labor. [1928.]
- No. 483. Conditions in the shoe industry in Haverhill, Mass., 1928.
- No. 489. Care of aged persons in the United States. [1929.]
- No. 506. Directory of homes for the aged in the United States. [1929.]
- No. 506. Handbook of American trade-unions: 1929 edition.
- No. 518. Personnel research agencies. 1930 edition.
- No. 541. Handbook of labor statistics. 1931 edition.
- No. 558. Labor conditions of women and children in Japan. [1931]
- No. 561. Public old-age pensions and insurance in the United States and in foreign countries. [1932.]
- No. 565. Park recreation areas in the United States, 1930.

(V)

