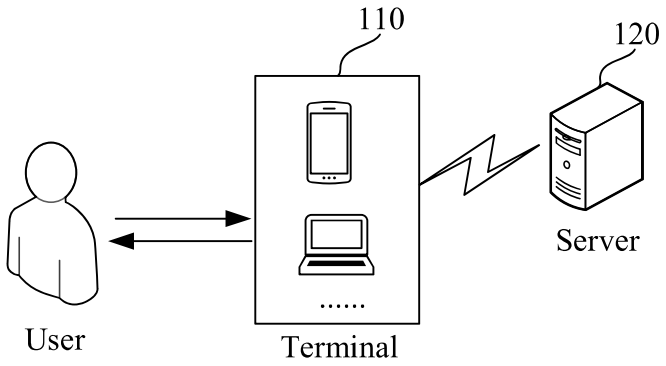

110
120
Server
.....
User
Terminal

FIG. 1

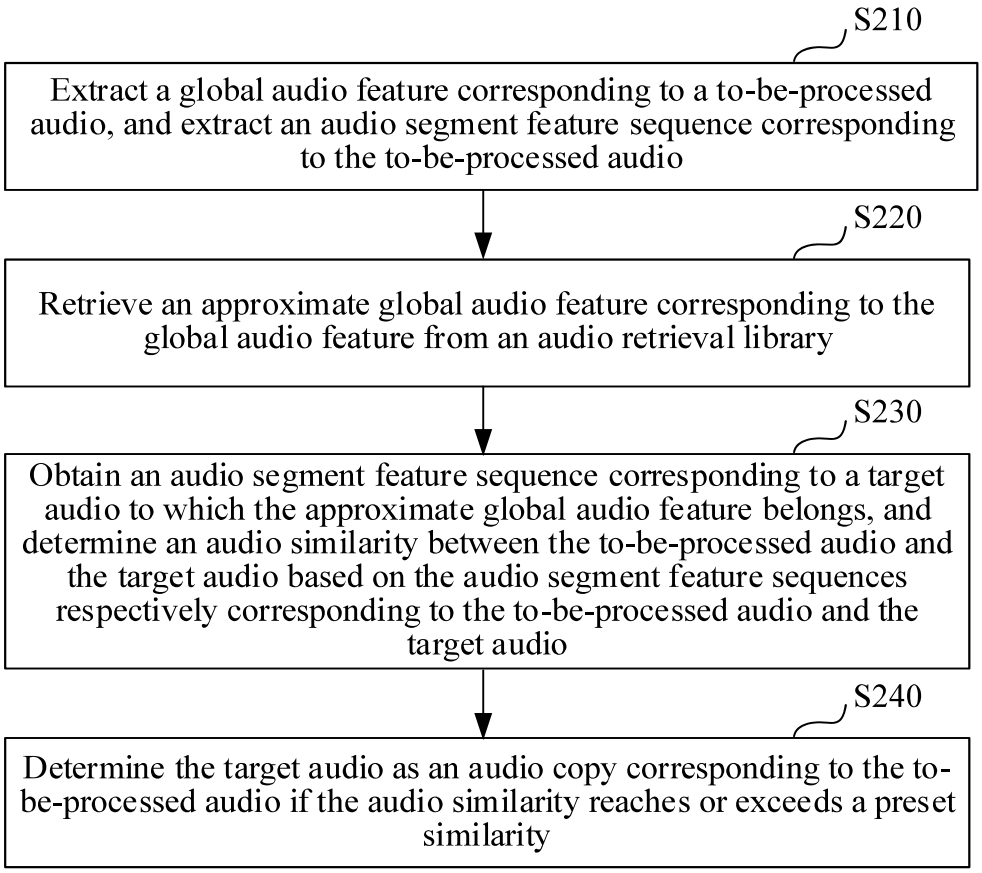

S210
Extract a global audio feature corresponding to a to-be-processed audio, and extract an audio segment feature sequence corresponding to the to-be-processed audio
S220
Retrieve an approximate global audio feature corresponding to the global audio feature from an audio retrieval library
S230
Obtain an audio segment feature sequence corresponding to a target audio to which the approximate global audio feature belongs, and determine an audio similarity between the to-be-processed audio and the target audio based on the audio segment feature sequences respectively corresponding to the to-be-processed audio and the target audio
S240
Determine the target audio as an audio copy corresponding to the to-be-processed audio if the audio similarity reaches or exceeds a preset similarity

FIG. 2

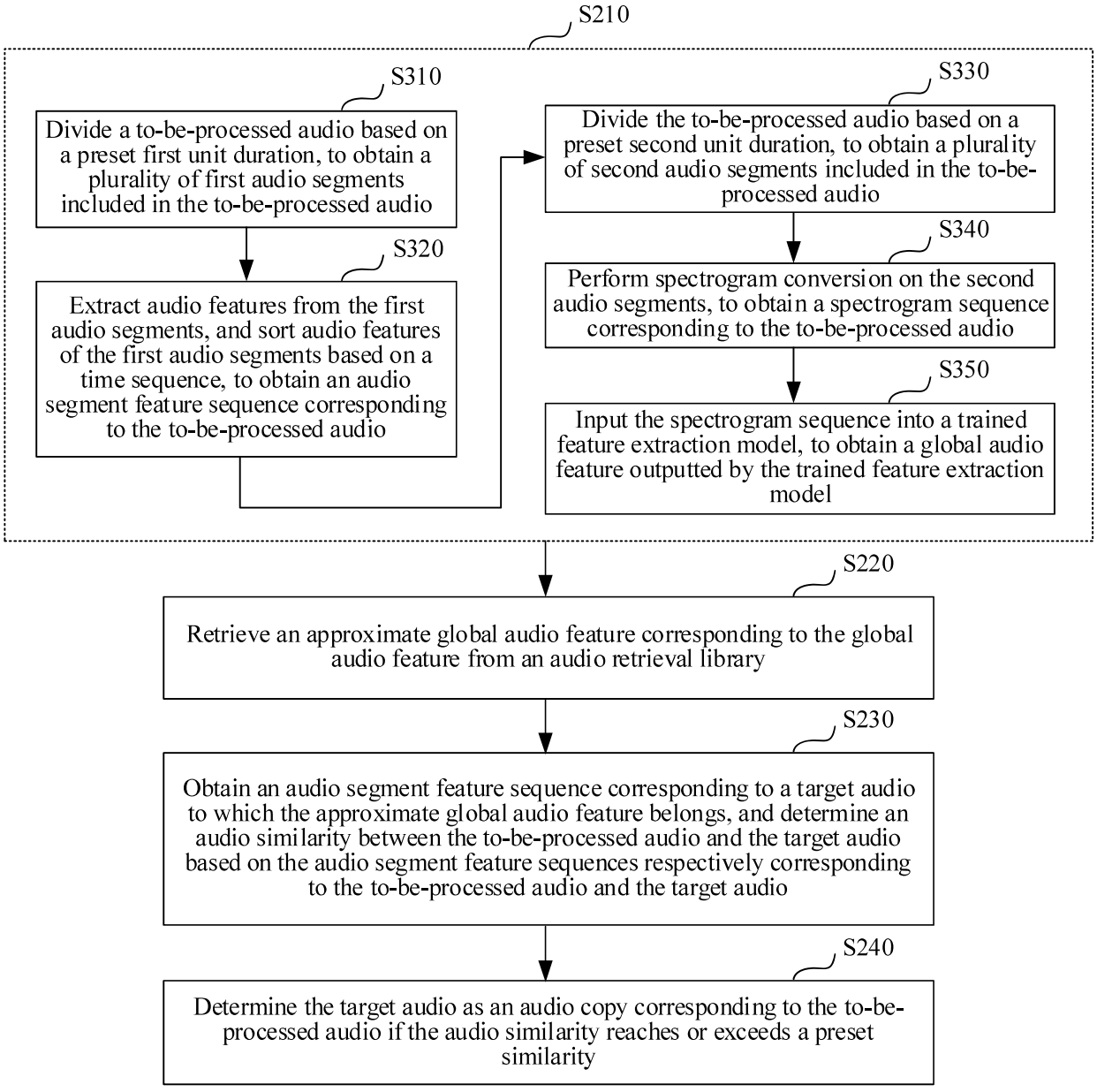

S210
S310
Divide a to-be-processed audio based on a preset first unit duration, to obtain a plurality of first audio segments included in the to-be-processed audio
S320
Extract audio features from the first audio segments, and sort audio features of the first audio segments based on a time sequence, to obtain an audio segment feature sequence corresponding to the to-be-processed audio
S330
Divide the to-be-processed audio based on a preset second unit duration, to obtain a plurality of second audio segments included in the to-be-processed audio
S340
Perform spectrogram conversion on the second audio segments, to obtain a spectrogram sequence corresponding to the to-be-processed audio
S350
Input the spectrogram sequence into a trained feature extraction model, to obtain a global audio feature outputted by the trained feature extraction model
S220
Retrieve an approximate global audio feature corresponding to the global audio feature from an audio retrieval library
S230
Obtain an audio segment feature sequence corresponding to a target audio to which the approximate global audio feature belongs, and determine an audio similarity between the to-be-processed audio and the target audio based on the audio segment feature sequences respectively corresponding to the to-be-processed audio and the target audio
S240
Determine the target audio as an audio copy corresponding to the to-be-processed audio if the audio similarity reaches or exceeds a preset similarity

FIG. 3

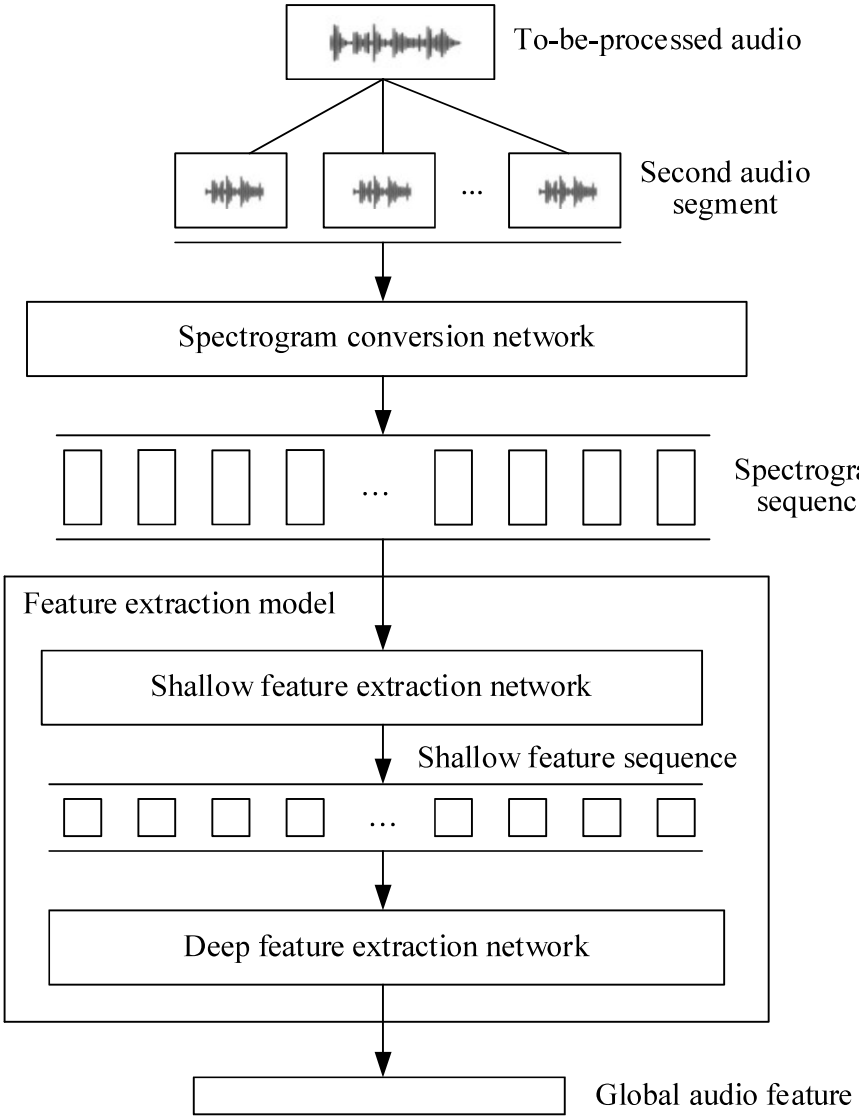

To-be-processed audio
Second audio segment
Spectrogram conversion network
Spectrogram sequence
Feature extraction model
Shallow feature extraction network
Shallow feature sequence
Deep feature extraction network
Global audio feature

FIG. 4

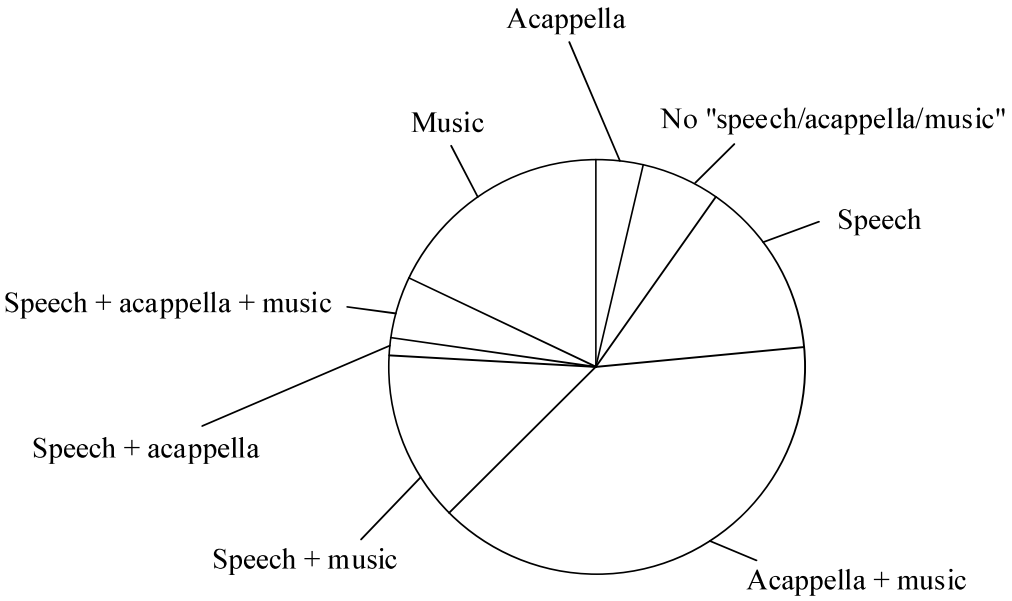

Acappella
Music
No "speech/acappella/music"
Speech
Speech + acappella + music
Speech + acappella
Speech + music
Acappella + music

FIG. 5

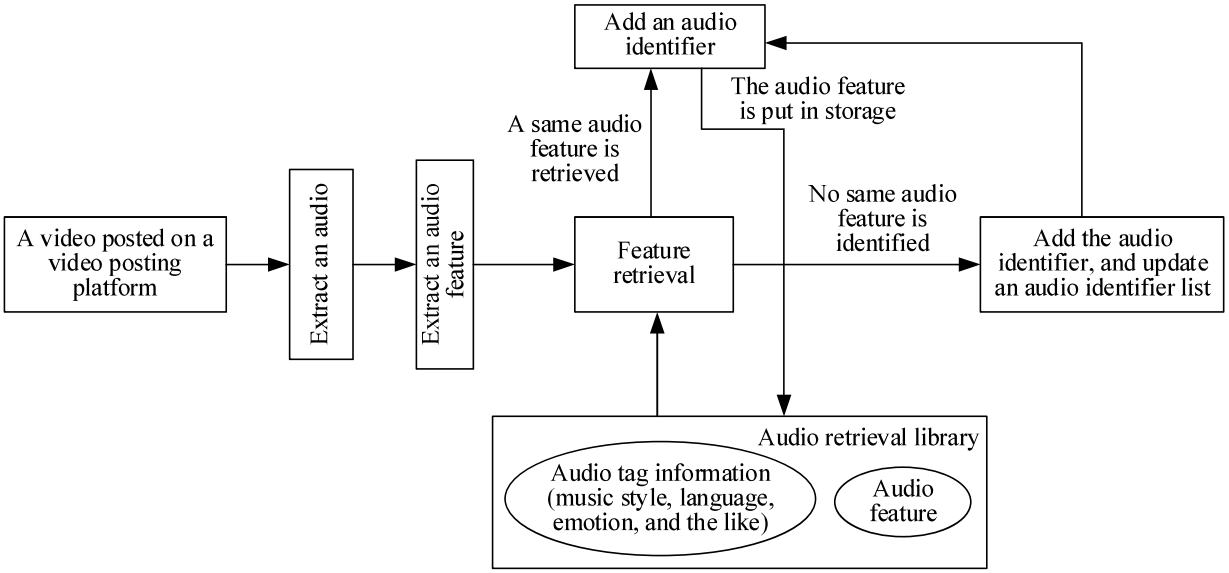

Add an audio identifier
The audio feature is put in storage
A same audio feature is retrieved
No same audio feature is identified
A video posted on a video posting platform
Extract an audio
Extract an audio feature
Feature retrieval
Add the audio identifier, and update an audio identifier list
Audio retrieval library
Audio tag information (music style, language, emotion, and the like)
Audio feature

FIG. 6

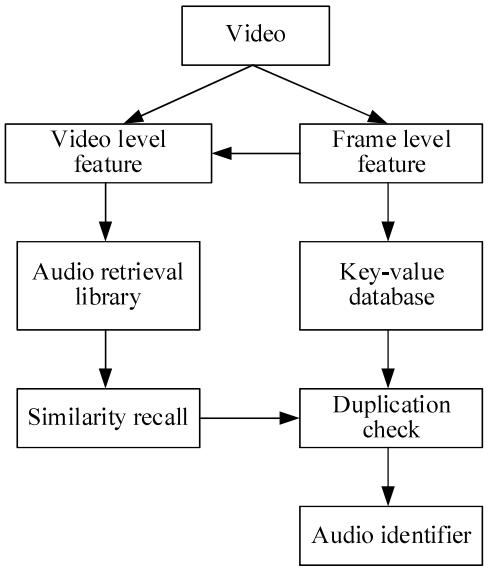

Video
Video level feature
Frame level feature
Audio retrieval library
Key-value database
Similarity recall
Duplication check
Audio identifier

FIG. 7

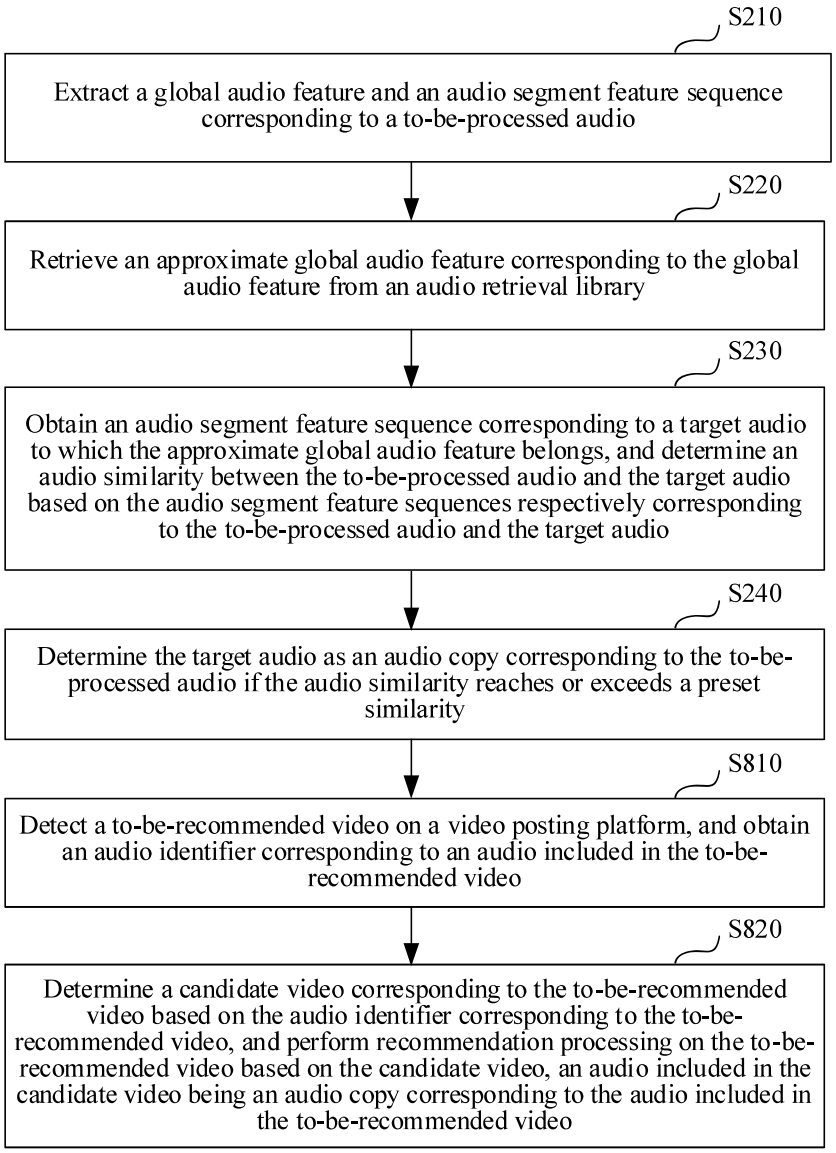

S210
Extract a global audio feature and an audio segment feature sequence corresponding to a to-be-processed audio
S220
Retrieve an approximate global audio feature corresponding to the global audio feature from an audio retrieval library
S230
Obtain an audio segment feature sequence corresponding to a target audio to which the approximate global audio feature belongs, and determine an audio similarity between the to-be-processed audio and the target audio based on the audio segment feature sequences respectively corresponding to the to-be-processed audio and the target audio
S240
Determine the target audio as an audio copy corresponding to the to-be-processed audio if the audio similarity reaches or exceeds a preset similarity
S810
Detect a to-be-recommended video on a video posting platform, and obtain an audio identifier corresponding to an audio included in the to-be-recommended video
S820
Determine a candidate video corresponding to the to-be-recommended video based on the audio identifier corresponding to the to-be-recommended video, and perform recommendation processing on the to-be-recommended video based on the candidate video, an audio included in the candidate video being an audio copy corresponding to the audio included in the to-be-recommended video

FIG. 8

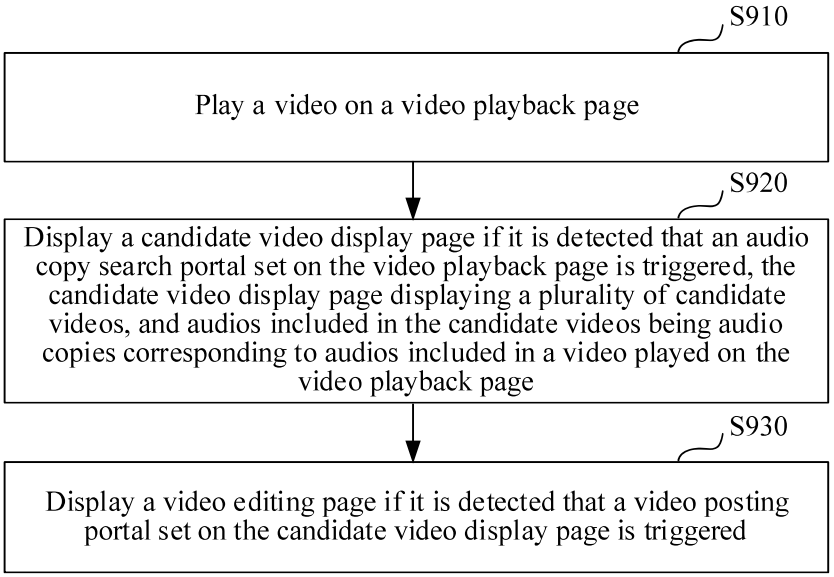

S910
Play a video on a video playback page
S920
Display a candidate video display page if it is detected that an audio copy search portal set on the video playback page is triggered, the candidate video display page displaying a plurality of candidate videos, and audios included in the candidate videos being audio copies corresponding to audios included in a video played on the video playback page
S930
Display a video editing page if it is detected that a video posting portal set on the candidate video display page is triggered

FIG. 9

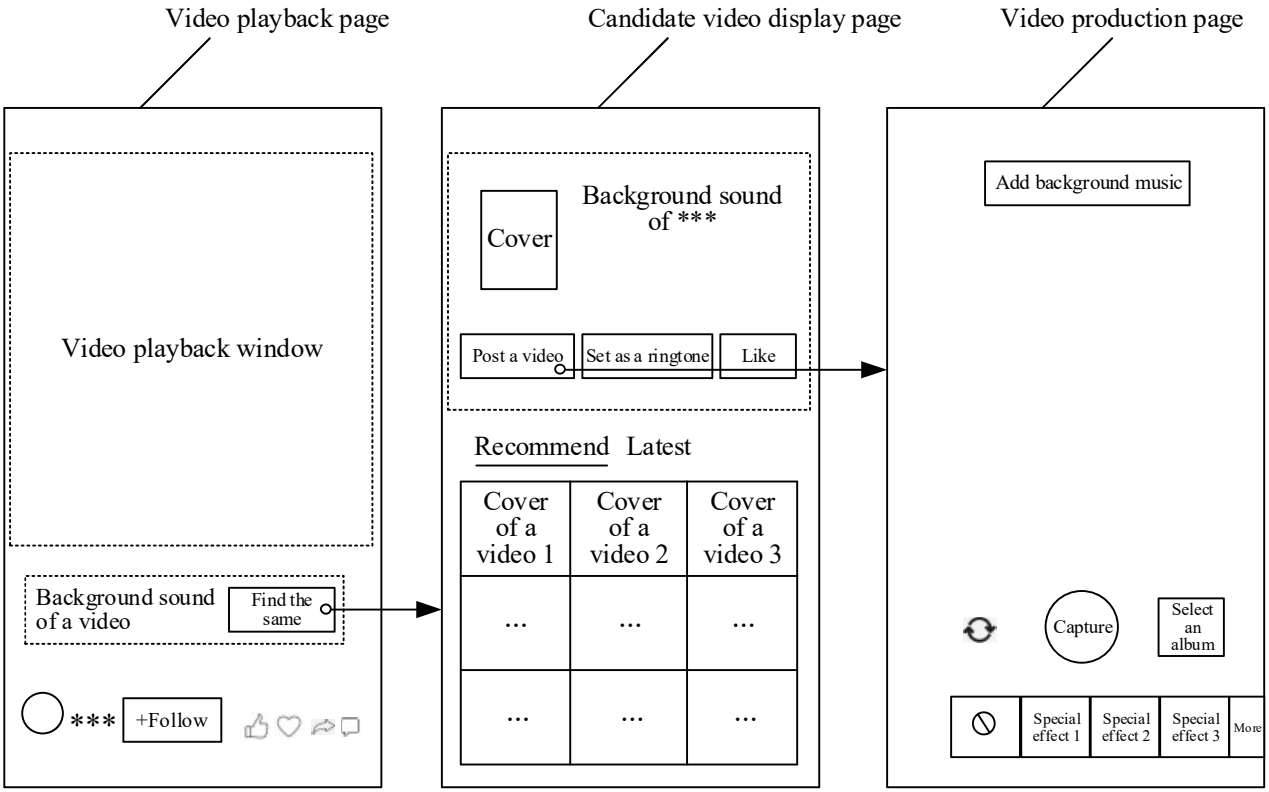

Video playback page
Candidate video display page
Video production page
Video playback window
Background sound of a video
Find the same
***
+Follow
Cover
Background sound of ***
Post a video
Set as a ringtone
Like
Recommend
Latest
Cover of a video 1
Cover of a video 2
Cover of a video 3
Add background music
Capture
Select an album
Special effect 1
Special effect 2
Special effect 3
More

FIG. 10

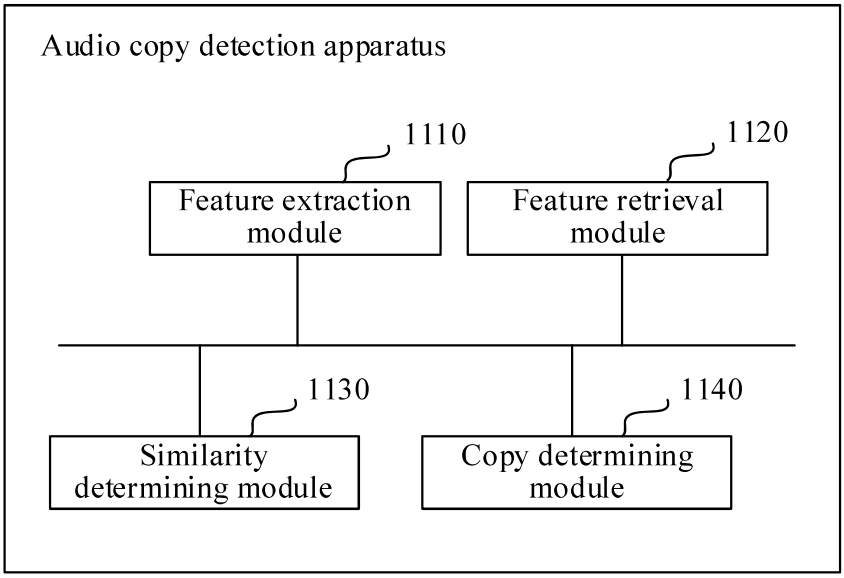

Audio copy detection apparatus
1110
Feature extraction module
1120
Feature retrieval module
1130
Similarity determining module
1140
Copy determining module

FIG. 11

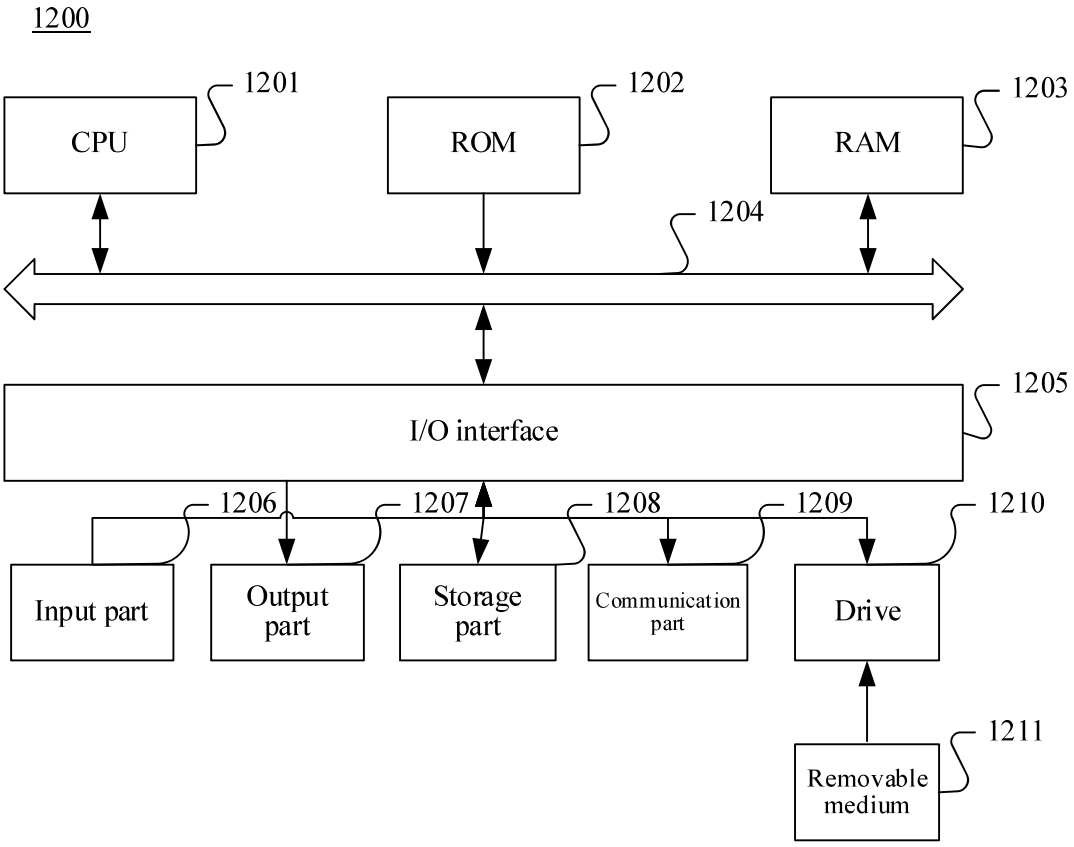

1200
1201
CPU
1202
ROM
1203
RAM
1204
1205
I/O interface
1206
1207
1208
1209
1210
Input part
Output part
Storage part
Communication part
Drive
1211
Removable medium

FIG. 12